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**ADDIS ABABA UNIVERSITY,
SCHOOL OF GRADUATE STUDIES
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INSTITUTE OF POPULATION STUDIES**

**SOCIO DEMOGRAPHIC CORRELATES OF SUBSTANCE
USE AND SEXUAL BEHAVIOR OF URBAN YOUTH OF
NORTHERN ETHIOPIA:
Particular study of Mekelle city**

By: Agazi Ameha

**A Thesis submitted to the School of Graduate Studies, Addis Ababa
University in partial fulfillment of the requirements for the degree of
Master of Science in Population Studies**

June 2009

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Urban Youth of Northern Ethiopia: A Particular Study of Mekele City*

By
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Acronyms

BCC	Behavioral Change Communication
BSS	Behavioral Surveillance Survey
CSW	Commercial Sex Workers
EDHS	Ethiopian Demographic and Health Survey
IEC	Information, Education Communication
MOH	Ministry of Health
OSSA	Organization for Social Service for AIDS
SPSS	Statistical Package for Social Sciences
STDs	Sexually Transmitted Diseases
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations International Children's fun
USAID	United States Agency for International development
WHO	World health Organization

Abstract:

Background: Substance use, more importantly abuse, is one of the many risk factors that endanger the life of youth. It is perpetuated by inadequate social support, lower socio-economic situation, poor or weak family background, negative peer pressure and lack of alternative amenities. Khat, alcohol and combined use of both substances are widely practiced by youth and young adults in Ethiopia. Literatures indicate that substance use increases the vulnerability of users to unprotected sexual behavior leading them to become victims of HIV/AIDS STI, unwanted pregnancy and many other consequences.

Objective: To measure the magnitude, identify the socio demographic correlates of substances use (Khat and Alcohol) and examine their relation to sexual behavior of Adolescents, youth and young adults (15-29) in Mekelle town.

Methods: A descriptive cross sectional survey was conducted from 11/02/2009 to 17/02/200A among 535 participants (15-29 of age) together with FGD and in-depth interviews in Mekele, the capital city of the Tigray Regional State of FDR of Ethiopia. The data was coded; entered, and analyzed using SPSS version 15. Focus group discussion, In-depth interview and transect walk results are also summarized, categorized and incorporated thematically into the thesis report.

Result: The study revealed that 17.6 %, 42.3% and 13% of the participants do have Khat chewing, alcohol drinking and smoking behaviors respectively, though at different level of intakes. Male, 15-19, unemployed and unmarried are the largest share of the users in all kinds of substances studied here. Using of alcohol and khat has strong association with risky sexual behavior ($P < 0.05$). Multiple use of substance i.e. persons who use both khat and alcohol consecutively have very strong association with risky sexual behavior ($P < 0.05$). Peer pressure, religiosity and open discussion with family members contributes to shape the substance use behavior of the participants.

Conclusion: The study finding shows that the most important factors for being exposed to khat and alcohol use are weak parent-child discussion, peer pressuring for substance use, low religious commitments and being unmarried. The study also revealed that being exposed to khat and alcohol use and more importantly combined use of both substances in turn leads to risky sexual behavior. Even though ,the consequences of risky sexual behavior is not the scope of the study, different literatures have affirmed it leads to different reproductive health diseases and/or problems such as HIV/AIDS, STD, Abortion and unintended pregnancy. Not with standing to the need for further research on the link between khat and alchol use with reproductive health problems; the result indicates Youth-specific interventions to reduce the likelihood of exposure of adolescent, youth and young adults to khat and alcohol in order to prevent them from Reproductive health problem, among others.

CHAPTER ONE: INTRODUCTION

1.1. Background information

In Ethiopia, like other sub-Saharan African countries, adolescent, youth and young adults (from 15--29 of ages for the purpose of this study) represent the largest share of the total population. In spite of the fact wide variety of interest and aspirations are vested by these different groups of the population, they are treated as "youth" according to the policy provision of the 2004 youth policy by FDRE, Ministry of Youth, Culture and Sport. Important emphases have to be given to adolescent and youth because they represent large portion demographically as well as they are part of active population who can play an important role in the economic, social and political development of the country. On the contrary, they can be a source of devastating problem to the society in the absence of proper and timely interventions.

Substance use behavior develops through complex and interrelated psychological, social and societal factors. Stressful childhood experience, weak parent-child relationship and supervision, the existence of supportive social norms (for substance use), lack of employment opportunities, peer influences, lack of availability of amenities, school environment are among the major risk factors that may contribute for the prevalence of substance use in a given community.

Substance use, more importantly abuse, is one of the many risk behaviors that endangers the life of youth. Existence of substances use contributes to various problems to the individual users as well as to the society at large.

“Substance use leads, among others, to risky sexual behavior and violence. A study assessing the magnitude of Chlamydia trachomatis and Neisseria gonorrhoea infections together with self reports of sexual risk behavior among youth (15-24 years old) in Addis Ababa, Ethiopia reported that increased sexual activity was significantly associated with being male, Age 20 years or over, out of school status, and reported alcohol/ khat consumption(Tifa, et al,2002).”

Hence, its impact on reproductive health problem is one of the negative health outcomes.

Youths and young adults are among the major users of substances in Ethiopia. Khat, alcohol and a combined use of both substances is widely practiced by adolescent, youth and young adults in Ethiopia. The use of marijuana also lurks to a certain extent.

Very few researches have been done undertaken (Derege, et al, 2005; Abebe, et al, 2006; Hibret, et al, 2007) regarding substance use and its relation to sexual behavior and practice in Ethiopia. Studies regarding such issue are virtually non existence in the northern part of Ethiopia. Absence of enough studies in these areas gives a strong motivation and justification to the study it.

In spite of the devastating effect of substance use, little is known on "How prevalent is substances use?," "Which are major risk factors that contribute to the increasing trade of substances in actual community context?," "To what extent is it affecting sexual behavior of the users?," "How strong is the relationship between the use of khat and alcohol, and risky sexual behavior?". The aim of this study is, therefore, to unravel such queries, and hence, in response to contribute to the healthy development of youth and young adults.

1.2. Statement of the problem

Youth face greater reproductive health risks than adults for many reasons, including a willingness to take greater risks in general, such as having unprotected sex and a greater vulnerability to sexual pressure, coercion and exploitation (Carolina, 2004). As a result, they are at the forefront that may face various negative consequences of reproductive health outcome.

Similarly, adolescents and youth are the primary victims of unintended pregnancy and unsafe abortion. HIV/AIDS prevalence is dominantly found among adolescent, youth and young adults. The ratio is highest among young people aged 15-24 year, and moreover young girls are found to be 2.5 times more infected with HIV than young

men. In addition to that, sub Saharan Africa is home to 62% of these young people living with HIV (UNAIDS, 2004).

Moreover, problems such as early marriage, school dropout, early pregnancy affects them. In short, they suffer from the various social, health and economic problems.

Adolescent, youth and young adults (15-29) share large proportion of population in developing countries in general and in Ethiopia in particular. If proper and timely investment is not made to ensure their reproductive health, serious health and socioeconomic repercussions will affect not only this age group but also the country at large. In other word, the resulting impact will hinder the development of the country.

Myriads of factors can be enunciated to the growing problems of youth and young adult's reproductive health problems in Ethiopia. Youth friendly programs are not well mainstreamed through relevant institutions (e.g. in educational, health and other concerned institutions); life skill programs that enable youth to explore, analyze and make healthy decisions are not widely available.

Substance use is one of the internationally recognized health risks to youth with devastating consequences. One of the reasons that exacerbate youth reproductive health risks is substance use. Ethiopia along with associated social, economic and demographic changes; the use of substance has been increasingly observed especially, among youth and young adults.

Wide existence of unemployment, lack of helpful parent child relationship and supervision, the exposure of many youth to different substances (khat, alcohol and other drugs), lack of alternative amenities that help them spend their time and lack of knowledge about reproductive health are among the major reasons. Notwithstanding to the efforts made, much is required in terms of building supportive social and economic structure that enables the healthy development of youth.

A research undertaken in Bahirdar (Ethiopia) in 2007 shows that strong association exists between substance use and risky sexual behavior. Adjusting for possible confounding socio demographic variables, it was found that those who chewed khat were about six times more likely to have had sex either with non regular partner, including commercial sex workers than those who did not report khat chewing khat(Hibret, et al,2007)

According to a BSS, condom use in Ethiopia is generally low (Family Health International, 2002). The survey indicates that only 13.4% of women and 30.3% of men reported condom use with a non-cohabiting partner. With a cohabiting partner, condom use was as low as 0.4% and 0.1%, for women and men, respectively. One of the reasons for the low level of condom use is use of different substances.

“The use or combined use of drugs such as Khat, alcohol, and cannabis is believed to further undermine the use of condoms. The Ethiopian AIDS Control Programme emphasizes abstinence, reducing the number of one’s sexual partners, consistent condom use, and diagnosis. Drug abuse in general, and khat use in particular, as possible risk behaviors for the spread of HIV infection, however, has not been adequately considered as part of this control programme”
(Abebe, et al, 2006).

The issues of sexual and reproductive health and substances use are interlinked and often have common roots (Economic and Social Commission for Asia and the Pacific: Item 6, 2001). Many young people report that they themselves have engaged in risky behavior because of substance use. Risky sex is indicated by having multiple partners, casual sex, absence of using condom, commencement of sex at early age, practicing different (and what are usually considered as taboo) sex types such as anal and oral sex.

For many years, Mekele and other towns of Tigray region are considered to have very low coverage of khat and other drug use. However, currently it is observed that many youth and young adults are increasingly becoming users of these substances. With changing trends in substance use, if proper interventions are not made it can have negative implications. Hence, this research initiative can be a breakthrough to bring

the issue of substance into public agenda where they will discuss and provide a solution.

Ensuring the reproductive health of young and young adults, where by they are protected from HIV/AIDS, STD, unsafe abortion, early pregnancy and related problems, is one of the key priority areas as has been indicated by the authoritative bodies.

One way of ensuring these is through undertaking research on the various root and intermediate causes that hamper the enjoyment of healthy reproductive behavior.

Therefore, a descriptive cross sectional quantitative study design together with qualitative study will enable to describe the area in terms of substance use (khat, alcohol and other related) by the age group (15-29) and examine its association with sexual behavior.

This study therefore is aimed at identifying the prevalence of khat, alcohol and examining association between substance use status and sexual behavior of the respective group. Moreover, it will also describe the socio demographic characteristics of what substance users with possible explanation for the outcome pattern among youth and young adults of Mekele Town.

The research result is expected to helping build the existing body of knowledge and forwarding to pertinent recommendations relevant stake holders towards making evidence based programming in designing, targeting and implementation.

The final outputs of the research will have implication in problem solving and decision making:

- * It will help concerned bodies to understand the situation of substance use by youth and its implication in the reproductive health of youth and its society in general.
- * It will enable programmers to make an evidence based targeting, strategy design and implementation of reproductive health programs and projects
- * It will give an insight for identifying other research question that will be undertaken in the area and elsewhere.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview

Substance use such as, khat, alcohol and to certain extent marijuana, are used at young age group in Ethiopia. The issues of sexual and reproductive health, HIV/AIDS and substance use are very closely interlinked. However, little is also known as to what is the magnitude, their socio demographic correlates and the level of association with sexual behavior, particularly in Ethiopia

Literatures indicate that substance use is one of the major reasons for early sexual debut. A national survey undertaken in Ethiopia shows that khat use was strongly associated with initiation of sexual activity with fourfold increased odds both daily and weekly users (Derege, et al, 2005)

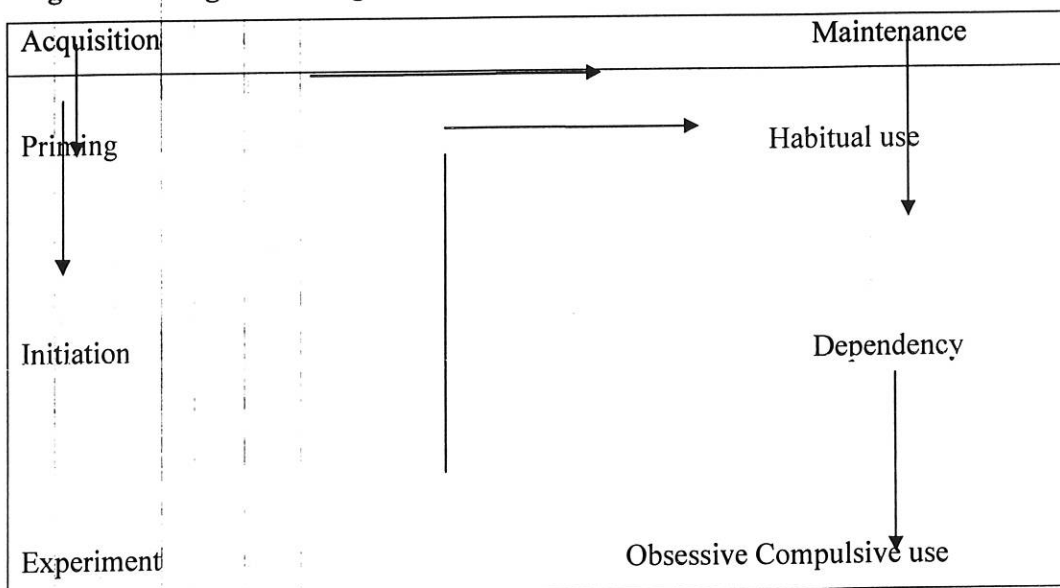
On the other hand, early sexual debut increases the likelihood of making risky sexual practice. This is a concern because early sexual initiation places adolescent especially young girls at elevated risk of having unintended pregnancy, acquiring HIV AIDS and STD and other negative social and psychological outcome (Lydia, et al, 2001}

2.2 Substance use: concerns and process

World health Organization (WHO) has recognized substance use to be a serious health risks that have devastating health implications to adolescent and youth. According to the WHO 2005 report, substance use can lead to illness and even to death. The importance of alcohol and substance misuse as a causes of significant morbidity and mortality (particularly from injuries) and social harm (such as social disruption, from crime, unemployment and martial disharmony) have been well recognized (Ritsonn, 1994). Substance use, through its effect on eluding users to make very risky decision making can lead users to resort into action that can cause them physical health (morbidity and mortality), social, psychological and legal problems.

Substance use is a practice that through time changes into habit having more or less similar pattern among users. There are different stages to be experienced by a person. As individual continues to use substance, they increase the chances of progressing through each stage. Pandina described drug dependency, according to the United States a longitudinal study of 6 to 24 years old. In that study he had identified a progressive model for the acquisition and maintenance of drug use. In that model he identified six common stages for substance use i.e. priming, initiation, experimentation, habit formation, dependency and finally obsessive compulsive use (Economic and Social Commission for Asia and the Pacific, 2003). In spite of these stages, however, that these stages can be interrupted at any time through appropriate counseling and related interventions

Figure 2.1 Progressive stages of substance use



Economic and Social Commission for Asia and the Pacific, 2003

2.3 Determinants of substance use

There are many interlinked factors that force adolescents and young people to use substance. Norms regarding what is expected and appropriate behavior may have altered with increasing exposure to a more globalizing youth culture, although young people in Africa are less exposed to forces of globalization than are their peers elsewhere (Barbara, 12). Poor economic situation including lack of unemployment opportunity, lack of availability of services also contribute to substance use.

In short, there are similarities in every major category of inquiry. For example, with regard to the nature of drug use, it was clear that all the young people felt the reasons for using were varied and included personal, family, peer and environmental factors (UNFPA, 1999)

2.3.1 Individual/personal risk factors

The major factors are level of care from a parent or other adult at an early age, the quality of school environment, and general personal feeling one develops including self esteem, efficacy and hope about the future. Many youth use substances for reasons ranging from seeking pleasure and fun to escaping life's problems to lack of knowledge or feelings of loneliness and inadequacy. (Michael, 2003)

Religious persons who have spiritual belief have less experience of substance use compared to those who do not give concern to their beliefs. Kandler and Co workers addressed that some dimensions of religiosity are related to reduce risks specifically for internalizing disorders and for other dimensions to reduced risk of externalizing disorders (David, et al, 2006).

Many youth after they have already developed a habit they can be forced to engage to some unwanted actions in order to secure those demands. Some pimps and brothel owners may give drugs to young people to get them to provide sex services and keep them physically and psychologically dependent in such work (Economic and Social Commission for Asia and the Pacific 2001: Item 6, 2003)

2.3.2 Family and peer factors

In a summary of two decades of research about family influences on the risk of adolescents becoming pregnant or causing a pregnancy, Miller, Benson and Galbraith (2001) suggest that researchers consistently find that parent/child closeness or connectedness, parental supervision or regulation of children's activities, and parents' values against teen intercourse decrease the risk of adolescent pregnancy. While several biological factors (timing of pubertal development, hormone levels, and genes) are also related to adolescent pregnancy risk, these factors are impossible or

difficult to change, so research focusing on family influence as a key proximal determinant is a useful focus for potential interventions (Mary, et al, 2005)

A loving and nurturing relationship with parents has been shown to be an important vehicle through which children learn to care, to give, and to compromise in relationships with others (Ronald L. Simons and Joan F. Robertson, 1989). Family factors include the effectiveness of family management, level of attachment, nature of rules and parental expectation and the strength of the extended family network (Economic and Social Commission for Asia and the Pacific, 2001).

Different literature (Barnes, et al, 1987; Gove & Crutchfield, 1982; Rollins & Thomas, 1979) indicates that researches have fairly consistently found a linear relationship between parental support and adolescent outcomes, such that the more support or the stronger the attachment, the better the adolescent outcome .

Family system shows evidence that substance abuse is higher in youths with family members who use drugs (Brines, et al, 2006). In addition, parental factors that affect youth include the ways they mold the behaviors of their children Lower socio economic situation family background and previous exposure to being victim of violence also contributes to indulgence in substances use.

Selection of peers with whom young people associate and the nature of peer support is crucial. For example, peers who show behavioral problem are considers their behavior as a conventional behavior and normal behavior as a deviant (Economic and Social Commission for Asia and the Pacific, 2003).

2.3.3 Social risk factors

Sexual behavior among adolescents is learned, and it responds to various social pressures and processes (Sanford, 1998). Social processes shape sexual behavior within a particular setting. Lower socio economic situation, existence of supporting

norms for indulgence in substances and lack of amenities coupled with personal, family and peer factors aggravate the use of substances among youth.

2.4 Situations of khat, alcohol and other substance in

Ethiopia

Even though hard drugs like heroin and cocaine are very rarely available in Ethiopia; locally produced psycho-stimulant Khat is commonly used in the country (Derege, et al, 2005). The same literature indicates the spread of the practice of Khat-chewing throughout Ethiopia has been highlighted in several epidemiological studies, and studies have estimated that it is used by 30–50% of the adult population. According to beekhuise, an estimated 10 million people chew Khat leaf daily (Abebe, et al, 2006).

Khat is one of the many drugs to which people can become addicted. Compulsive use, psycho-active effects, and drug-reinforced behavior are the primary criteria for defining drug addiction. When khat (*Catha Edulis*) leaves, which are known to contain psycho-active ingredients, cathinone, are chewed and ingested, they produce loquacity of thought, euphoria, and removal of fatigue and suppression of hunger (Adugna, et al, 1994). Khat chewing delays gastric emptying of semi-solid food.

Similarly, alcohol use is also largely used in Ethiopia. Some police reports and other sources indicate that the use of marijuana lurks in the major cities of the country.

According to Kalix P on his book “Khat: Scientific knowledge and policy issues”; the psycho stimulant effect of Khat is due to the alkaloid ingredient, chathotine, which is similar to amphetamine (Derege, et al, 2005). This characteristic makes khat consumption to be taken as a substance use. Khat has many years in Ethiopia particularly, in the eastern part of the region. Its use has now spread to most regions of the country as well as to neighboring nations, as people discover the exhilarating properties of this ‘flower of paradise’ (Abebe, et al, 2006)

“**Alcohol** consumption was more frequent for khat chewers aged 16–30 years, males, Christians, urban dwellers, married persons, and those with a secondary or higher level of education ($p < 0.001$). There was no significant relationship between frequency of alcohol consumption and

khat-chewing for the unemployed or employed. Alcohol consumption was more frequent for chewers who complained of suffering from anxiety or insomnia and who felt they faced family disapproval because of their chewing habit than it was for chewers who dismissed the existence of such problems ($p < 0.004$; OR = 1.4, 95% CI = 1.1,1.7)" (Abebe ,et al, 2006).

2.5 Effect of substance use and its relation with sexual behavior of the young

Khat, Alcohol and other drugs have many effect on the social, economic and health well being of youth. Their abuse may come at the cost of various socio-economic problems at the collective level, while the individual user may face increased agitation, apprehension, anxiety, mania, and possibly increased tolerance and thus dependency (Abebe, et al, 2006).

Economic crisis is one of the negative consequences as a result of indulging substance use such as chewing khat and alcohol bring in the life of users. According to Daly, such behavior strongly suggests the development of psychic dependence, reflected in the regular daily consumption of Khat, and with an associated decrease in economic productivity through reduction of working hours because the time spent for chewing (Abebe, et al, 2006).

In the same article by Dawit, the use of khat and/or alcohol affects the health of its consumer as it reduces their appetite. In addition to personal spending on this nonessential commodity at the expense of food may result in malnutrition and proneness to infectious diseases, while the appetite-inhibiting effect of the drug may aggravate the condition of malnutrition Furthermore it also indicates, up to 85% of men's monthly income is reportedly used for purchasing khat.

Strong link exists between substance abuse and, sexual abuse and exploitation. Many young people reported that they got engaged in risky behavior because of substance use.

"More than a third of sexually active young people report that alcohol and drug use have influenced their decision about sex...

...Because of decisions that they have made while drinking or using drugs ,young people report having unprotected sex and worrying about STD and pregnancy" (The HENERY J KAISER FAMILY foundation, 2002).

There are different arguments as to whether chewing khat affects sexual behavior or not. Some say that habitual chewing of khat affects sexual behavior negatively by increasing impotence. The overwhelming data, however, imply that habitual khat-chewing causes a high frequency of spermatozoa, decreased libido and, at a later stage, impotence, as observed in Somalia and Djibouti, where as many as 60% of the male chewers in those countries were reported to be impotent (Derege, et al, 2005).

According to the results of many studies, however, chewing Khat could be linked to risky sexual behavior. According to UNAIDS and WHO study, the impact of widespread use of such drugs in facilitating the transmission of HIV could be more pronounced in a country like Ethiopia where as many as 1.5 million people are living with HIV, and where AIDS illnesses caused an estimated 30% of all adult deaths in 2003 (Abebe, et al, 2006).

According to a study conducted in Bahirdar on out of school youth, it confirms that there is strong association between substance use such as khat and alcohol to risky sexual behavior. Adjusting to possible confounding factors; it was found out those who chewed chat have six times more likely to have sex either with non regular partner including CSW than those who reported did not chew Khat (Hibret, et al,2007).

Alcohol also has an important influence in sexual behavior. According to a research conducted in Cameroon, it was observed that drinking alcohol significantly increased the odds of extramarital sex (Eugene, et al, 2007).

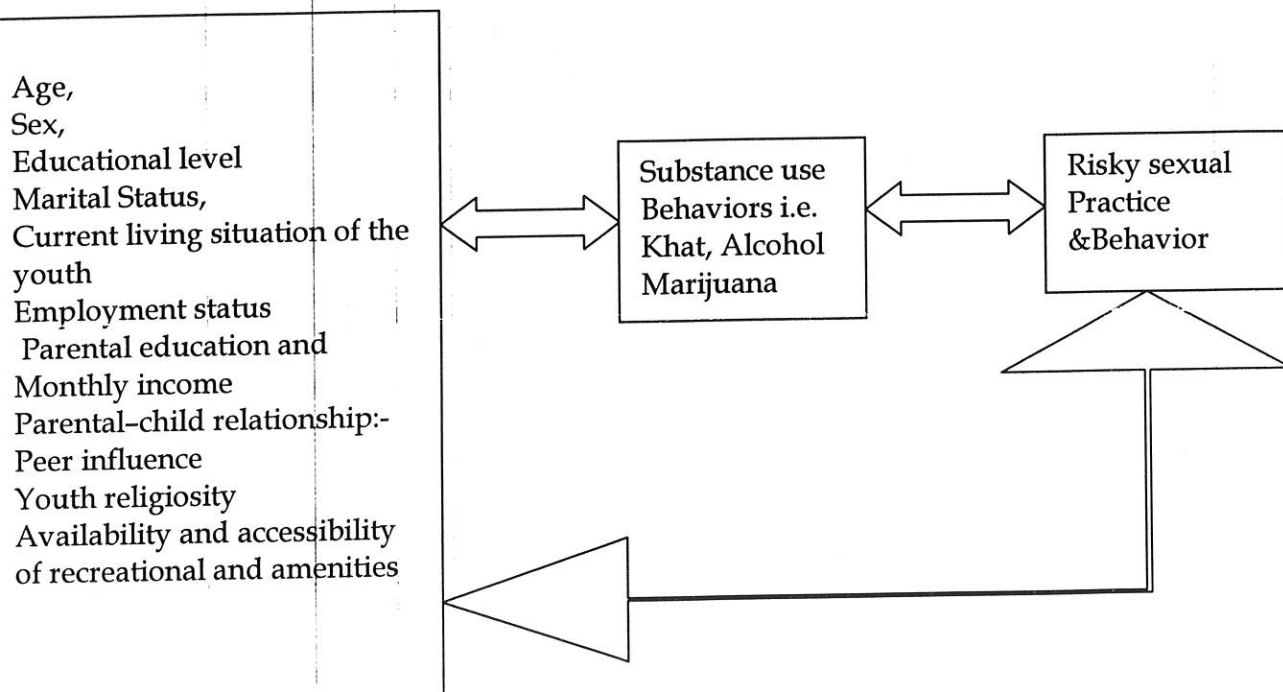
Whatever the underlying reason for consuming alcohol, FGD participants claimed that their combined use of Khat and alcohol enhanced their chance of engaging in casual sexual encounters because it removed usual restraint behaviors. They reinforced their argument regarding the high likelihood of unplanned and unsafe sex

by noting that alcohol is most often served in drinking establishments that commonly employ commercial sex workers (Abebe, et al, 2006).

Combined substance use is also observed among many youth. For example many of khat chewers frequently drink alcohol. According to a research result of Abebe Dawit, one reason for indulgence in alcohol by male Khat chewers is to overcome lack of sexual arousal. In the study, that assertion by participants appears to be well-founded, since male chewers with a problem of sexual performance reported resorting to alcohol more than those who do not feel such a problem (Abebe, et al, 2006).

As a whole summary of the literature indicate that substance use has many but interlinked risk factors ranging from personal factor to societal. Its effect on sexual behavior exists by altering the decision to healthy choices and eroding the self esteem of users. The concomitant result is then different sexual and reproductive health problems.

2.6 Conceptual framework



Research questions, Objectives and Limitation of the study

Research Questions

The basic research questions are

- * What is the prevalence of substance use (Khat, alcohol) by youth and young adults (15-29) in the Mekelle City?
- * What are the socio-economic and demographic correlates of substance users and why?
- * What is the level of association between exposure to substance use and sexual experience?

General objective

- To measure the magnitude, identify the socio demographic correlates of substance use (khat and alcohol) and critically analyze its effect on reproductive health (sexual behavior and practice in particular) of youth and young adults (15-29) in Mekelle town.

Specific objectives

- To measure the magnitude of substance users (khat and alcohol) among the youth and young adults (15-29) in Mekelle.
- To identify and describe the socio demographic correlates of the users and non users.
- Compare the sexual experiences (behaviors and practice) among users and non users;
- Elucidate the explanation for exposure to substance use.

Limitation of the study

- As a cross-sectional nature of the study it may not give clear indication on the nature of relationship between some of the explanatory and response (dependent) variables.
- Respondent can show reluctance in providing honest information due to sensitive nature of the issue. (Some participant may be fearful to declare their exposure to substance use and actual sexual behavior)

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Major variables

Dependent variables:

- Sexual initiation
- Risky sexual behavior (practice, attitude and knowledge)
- Khat chewing
- Alcohol intake/use

Explanatory variables for the main outcome: -

- khat chewing , alcohol behavior

Control variables

Youth socio demographic characteristics: -

- Age,
- Sex,
- Educational level
- Marital Status,
- Religion,
- Current living situation of the youth
- Employment status
- Parental education and monthly income

Parental –child relationship:-

- Relationship with parents
- Parent child communication on substance use, sexuality and reproductive health

Peer influence

- Level of peer pressure,

Youth religiosity

Availability and accessibility of recreational amenities

2.8 Operational definitions of important terms

- **Early sexual initiation** is defined as an experience of first intercourse before 18 years of age.
- **Risky sexual behavior** is a behavior that can be expressed by absence of using condom in premarital sex, having multiple partners, having casual sex and having sex with CSW.
- **Socio demographic correlates:** Corresponding characteristics or status of respondents in terms of age, sex, educational level, marital Status, religion, current living arrangement of the youth, employment status, and Parental- education.
- **Parent- child relationship:** The nature of relationship that exists between parents (custodian) and child in terms of open discussion regarding sex, substance use behavior and parents (custodian) child handling mechanism when the child made mistake, vices and unacceptable behavior while the child is under parents (custodian) responsibility.
- **Peer influence:** Positive or negative influences of peers who stay closer to the respondent in terms of his/her decision regarding his own sexual or substance use behavior.
- **Youth religiosity:** Measure of respondent closeness to his religious denomination in terms of practicing the required religious practices such as praying, attending religious days and fasting.
- **Substance use** is the current use of khat, alcohol or marijuana, or a combination of any of them.

CHAPTER THREE: METHOD AND PROCEDURE

3.1 Study design

The study design of the research is a descriptive cross sectional survey method together with FGD and in-depth qualitative study aimed at elucidating possible explanation to the results obtained by the survey in Mekele, the capital city of the Tigray Regional State of FDR of Ethiopia. Data collection was conducted during 11/02/2009 to 17/02/2009.

3.2 Study area and source population

Mekelle City, a regional capital city, is located in the geographical center of the regional state of Tigray. It is located 783 KM away north from Addis Ababa. It has 3500 Hectares (35 Sq.KM) found in N 13 Degree 32' latitude E 39 28' Longitude.

The city is divided in to 7 Kebeles corresponding roughly to neighborhood. The total estimated population of the city in 2001 is about 134,996 (Bureau of Finance and Economic Development). Of the total population males comprise 80,052 while female are 79,372.

According to the city profile, the college age and new worker population (20-24 years) was estimated 14,164 in 2010. Young worker population (25-34 years) is projected to be 20,597 by 2010.

The source population for this study is all youth and young adults who are aged 15-29 years. Hence, sample was selected from source population through using probabilistic sampling method from all area administration of the city. Moreover, part of this population will be selected through purposive sampling to collect qualitative information.

3.3 Sample size determination

A sample size of 535 was determined using a single population proportion .The sample size was determined by taking the P. value 5 % (The averaged prevalence of frequent khat, alcohol and other substances intake).The prevalence is obtained from a published (2005) research

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article on “Khat and Alcohol use and risky sex behavior among in school and out of school youth in Ethiopia” by Derege kebede and his associates.

Hence, the sample has been calculated by

- “P” i.e. the prevalence of khat intake being 0.05
- “q” is non users of khat being 0.95
- 1.96(96%) confidence interval i.e. Z is (1.96)2
- 0.02 standard error has been determined to increase its precision

n =	$\frac{(Z\alpha_2)^2 p q}{(0.2)^2}$
	$(0.2)^2$

3.4 Sampling procedure /technique

All [7 area administration i.e. was covered in the sampling frame. Population, No of house hold and sample household and targets of Mekele city is described in the table below.

Table3.1: Population, House holds and selected targets by Woreda and area administration

Woreda	Area administration	Population	Number HH	Selected HHtarget
Debub	Adi haki.....	30120	8091	76
	Kedamay weyane.....	32453	9165	76
	Hadenet.....	37890	9100	76
	Quiha	36419	9235	77
Semen	Semen.....	39874	9520	77
	Aider.....	354673	9435	76
	Hawelti.....	324563	9587	77

The study population included all adolescents, youth and young adults. The inclusion criteria being any person who lived in the area for at least six months, whose age is in the age range of 15-29 years and who had no disability status that hampers his/her social relation in the community for at least one year.

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The sample population constituted 535 youth selected equally from all area administrations. This is because the population was uniformly distributed to each area administration. With in each area administration, the respondents were randomly selected by rolling a stick standing at the center of that area administration and following the random direction of the stick. Once the household is selected, the consecutive household was systematically picked by adding "n" to the one previously selected. "n" being the number calculated for identifying the systematic sampling(i.e. Sample size allocated per area administration divided by number of households in the area administration) .If there was more than one target in the house hold ,it is selected through lottery method.

3.5 Data collection, Quality management, Processing and Analysis

In this study, both quantitative and qualitative data were collected. Quantitative data was collected through a well designed questionnaire using an interview method. Focus group discussion and in-depth interview were used to collect qualitative data.

Table 3.2: Instruments used for primary data collection by types, purpose and language Mekelle, Tigray, Ethiopia, 2009

Tools	Questionnaires	FGD	In-depth interview	Transect walk
Targets	Adolescent, youth and young adults (15-29 years)	Adolescent, youth and young adults(15-29 years)	Youth with substance use behavior	Anti HIV/AIDS club members
Purpose	To measure the magnitude, identify the socio demographic correlates of substance use (Khat and alcohol) and analyze its effect on sexual behavior	To dig hidden information and/or give much clearer understanding on the motivation for substance use, the pattern of behavior and their link between substance use and sexuality	To identify motivation for substance use, the pattern of behavior and their link between substance use and sexuality at personal level	To identify aggravating area for substance use
No of participants	535	38	4	6
No of items	80	12	20	Not applicable
Language	Tigrigna	Tigrigna	Tigrigna	Tigrigna
Procedure	Simple random sampling	Stratified	Snowball	Snow ball
Time taken on average	35 minute	2 hours/session	1 hour and 20 minute	One day

The presentation of final result in the following topics is prepared through triangulated results of quantitative and qualitative information.

3.5.1 Quantitative survey

Questionnaire development

Experiences, from different surveys and standard data collection instruments of previous researches, were drawn for the development of the questionnaire. (Questionnaire is attached as annex). Maximum efforts have been made to make the questionnaire very simple, precise and short. The questionnaire has been initially developed in English and then translated to Tigrinya by student researcher and consultation from teachers of the language at high school.

The questionnaire has been adapted and developed based on field tested questionnaire items of EPHA (young people HIV/AIDS and RH needs and utilization of services published in Dec.2005), as well as FHI, WHO and Wisconsin standard questionnaires. In view of structuring the questions, the questionnaire has incorporated different instructions, verbal informed consent. Arrangement of the questions is structured in a systematic way to improve the interview process.

Selection of data collectors and supervisor

Data collection was performed by six, recruited for the task, Anti HIV/AIDS club members. Previous data collection experience was considered as criteria for selection of the successful candidates. Gender mix was also considered. Two days training was given to equip with interview skills and to familiarize with detailed questions. Moreover, the data collection was supervised by 2 supervisors who have college education and had the experience in data collection and, who have worked in youth programs.

Pretest and its results

In order to ensure the relevance, comprehension, easiness and effectiveness of the questionnaire, pre test was conducted to study population targets using 5 % of sample size i.e. 27 questionnaire. The participants of pre test were selected from schools, out of school, from all age groups and both sexes who was met by data collectors in their locality by coincidence. Hence, amendments were made accordingly. In view of the different parts, the questionnaire has incorporated different instructions, verbal informed consent. Arrangement of the questions is structured in a systematic way to improve the data quality.

Because of the necessary attention given to the development of the questionnaire not much problems has occurred only very few questions were amended based on the outputs of pretest. The results of pretest in which amendments was done is displayed in the following table

Table3.3: Modification made to the questionnaire after the pretest Mekelle, Tigray, and Ethiopia, 2009.

S/No	Reason for amendment	Question before pretest	Question before pretest
1	The term doesn't exist formally	Keble	Area Administration
2	Difficult to be estimated by youth	What is the average income of your house hold	How do you evaluate your household income compared to the neighborhood? (Very high, High, Moderate, low, very low)

Data collection and supervision

The data was collected through properly selected and trained data collectors and monitored through experienced supervisors.

In addition, up to 10% randomly selected interviews were double administered by the principal investigator and the supervisors. The result of the study revealed that all the first and double administered questionnaires have proved consistent.

Data process and analysis

All variables of the questionnaire were created in SPSS version 15 and every data has been entered accordingly. Data cleaning has been made to ensure the consistency and address missing values. All relevant steps such as editing of responses, post coding, entry and data cleaning procedures are followed.

Analysis of the data will be made using appropriate descriptive and analytical statistical tools. Logistic regression, Chi-squared test (χ^2), and other related statistical estimates were performed by the application of SPSS version 15 to determine the presence of statistically significant associations between the dependent variable and the independent variables. Results are presented in text, graphs and tables and compared with others findings.

3.5.2 Qualitative methods

Focus group and in depth interview were used in this research. The qualitative part comprises 4 FGD and 4 in-depth interviews. The numbers of FGDs and In-depth interviews with youth and young adults have been determined in a way to helping generate as much information as possible towards gaining clearer understanding on the motivation for substance use, the pattern of behavior and their link between substance use and sexuality at personal level. Some of the major considerations taken during the whole process are presented here below.

Moderator and Note taking

Moderators and note takers have been selected with higher educational background, experienced and who have volunteered to participate in the data collection process.

Selection of participants

Each FGD comprised 8-12 participants (total of 38 i.e. 18 female and 20 male were participated). They were selected in a way it involves different background characteristics of the study population. School status (In –school, out-of-school), employment status (Working and not working), age group (15-29 years) and sex (male and female) considerations were

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made. This is because participants with similar background have more belongingness to participate actively, share their ideas honestly and in an easy manner especially of substance use and sexual behavior. In school with age 15-22 years, out of school with age 15-22 years, out of school 22-29 years, On-job has participated separately.

Data process and analysis

For the qualitative part, recording through manual hand writing was undertaken. Back translation was made and issues were summarized per topics which were presented in this final thesis report thematically.

3.5.3 Consideration of ethical issues

Every necessary step to ensure the ethical standards of the research is adhered. Among these;

- Scientific soundness and ethical standards approved by the CDS/IPS;
- Earned supporting letters from IPS and Local administration of the study area;
- Written Consents were obtained from each of the respondents prior to the interview both in the quantitative and qualitative part;
- Full information were given to the selected participants and any concerned body about the nature purpose and scope of the study;
- Confidentiality of the information were strictly followed;

CHAPTER FOUR: FINDING RESULTS, AND DISCUSSION

4.1 Descriptive finding of the study

4.1.1 Socio-demographic characteristics of study participants

The following narrative description and tabulation (4.1) describe the participant's characteristics in terms of sex, age group and other socio-economic variables.

Sex characteristics of Respondents

The study result, as shown in table 4.1, illustrates the respondents sex distribution is fairly distributed. Of the total, 306(57.2%) males participated in the study while females are 229 (42.8). It indicates that, although uniformly distributed; the number of males is little higher than their counterparts, females. The possible reason for such situation is in some of the selected households; some females, who were selected primarily, did not volunteer for the interview (For different reasons such as shyness, difficulty in communication) and, hence increasing the number of male respondents. Nevertheless, such circumstances rarely happened that it have only negligible effect in the sex distribution

Respondent characteristics by Age group

These study participants are with in the range of 15-29 years. The national Policy stipulates youth as the age of 15-29 year (FDRE-MYSC, 2004). Moreover, the study can be regarded as a study focused on adolescence, youth and young adults each implying the age range of 15-18, 19-24, 25-29 years respectively. This is actually consistent with the world Health organization definition that classify as adolescent 10-19 years and youth as 15-24 years (FDRE-FMOH, 2006).

The study finding shows that 26% adolescent (15-18 years), 51% youth, 19-24 and 23% young adults (25-29 years) have participated in the study indicating major proportion being youth population. The population of 19-24 years takes the largest share (half of the

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participants) mainly due to the age range included in this age group is larger than in other two age groups.

Religious denomination of respondents

464 orthodox (86.7%) have participated in the study followed by Muslim 27(5%), Catholic (4.3%), Protestant (3.4%) and others (0.6 %). The distribution of respondents by religious denomination correspond the actual statistics of the city population; where the largest share of population is Orthodox and the 2nd being Muslim. In terms of population share the city profile 2007 states that, 90 % of the Mekelle population are Christians (Orthodox, protestant, catholic) while Muslims are only 10 % (Mekele city Finance and & Economic Development, 2007).

Education background of respondents

The majority of the study participants are above 10th grade who can be either TVET, Pre College or in higher educational institution. This variable is categorized as into four (Did not attend formal education, Completed up to 10, TVET and pre college, higher education). The rationale for categorizing in this way is firstly, so that number of participants that would fall in each cell would be proportionate and meaningful classification that is convenient for running logistic regression among categories were taken.

Participants ‘who did not attend formal education’ are 24(4.5%) and high level education are 94 (17.6 %). The other 417 are completed up to 10 grade 207(38.7) to TVET and Pre college education 210 (39.3).

Employment Status of respondents

Employment status is classified into three i.e. ‘No work ‘meaning the person is neither working nor engaged education, ‘Working’ means the person who is actively involved in an income generating activity regardless of the rate earned and may or may not get engaged in educational activity, and ‘Student’ is the one who is primarily learning in formal education who could be either at elementary, secondary or higher level. The finding shows the majority study participants are working i.e. 197(36.8%) followed by students i.e. 190(35.5%) and the third being neither in education nor work activity i.e. 148(27.7%).

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Marital status of respondents

The majority of study participants are never married who either have steady friend or not who comprises 59% of total participants. Very small proportion of the total population is who ever married but have dissolved their marriage for different reasons (5.4 %). 107(20%) are participants who have steady sexual partner and 81(15%) are currently married.

Current living arrangement of respondents

With regard to current living status, majority of the participants are with their parents (29.6) followed by alone (16.26%), with single parent headed (14.95%), with partner (11.7%) and with relative / custodian (3.74 %). These study has also indicated that significant proportion of the participants live under single parent headed.

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**Table 4.1 Socio-demographic characteristics of study participant:
Mekelle, Tigray, Ethiopia 2009**

	No (%)	Male	Female	Total
Age(In completed years)				
15-18.....	No (%)	85 (15.8)	54(10.0)	139(25.9)
19-24.....	No (%)	152 (28.4)	121(22.6)	273(51.0)
25-29.....	No (%)	69 (12.8)	54(10.0)	123(22.9)
Religious denomination				
Orthodox.....	No (%)	262(49.0)	202(37.8)	464(37.8)
Catholic.....	No (%)	10(1.9)	13(2.4)	23(4.3)
Protestant.....	No (%)	10(1.9)	8(1.5)	18(3.4)
Muslim.....	No (%)	21(3.9)	6(1.1)	27(5.0)
Other.....	No (%)	3(0.6)	0(0.0)	3(0.6)
Educational Status				
Did not attend formal education.....	No (%)	14(2.6)	10(1.9)	24(4.5)
Completed up to 10.....	No (%)	101(18.9)	106(19.8)	207(38.7)
TVET and Pre college.....	No (%)	138(25.8)	72(13.5)	210(39.3)
Higher Education.....	No (%)	53(9.9)	41(7.7)	94(17.6)
Employment Status				
No Work.....	No (%)	68(12.7)	80(15.0)	148(27.7)
Student.....	No (%)	119(22.2)	71(13.3)	190(35.5)
Working.....	No (%)	119(22.2)	78(14.6)	197(36.8)
Marital Status				
Never Married.....	No (%)	206(38.50)	112(20.93)	318(59.44)
Have Steady married.....	No (%)	60(11.21)	47(8.79)	107(20.0)
Currently Married.....	No (%)	27(5.05)	54(10.09)	81(15.14)
Ever Married.....	No (%)	13(2.43)	16(2.99)	29(5.42)
Current Living Status				
With both parents.....	No (%)	140(26.0)	73(13.6)	253(29.6)
With Single Parent Headed.....	No (%)	41(7.66)	39(7.29)	80(14.95)
With relative and/Custodian.....	No (%)	16(2.99)	4(0.75)	20(3.74)
With partner.....	No (%)	26(4.8)	37(6.9)	63(11.7)
Alone.....	No (%)	30(5.61)	57(10.65)	87(16.26)
Other.....	No (%)	53(9.91)	19(3.55)	72(13.46)

Field survey result

4.1.2 Substance use situation of participants

Table 4.2 depicts the substance use situation of khat, alcohol intake, smoking and also the experience of viewing pornographic material. Viewing pornographic material is considered here as it could have an intermediate role between the use of substances like khat, alcohol, and risky sexual behavior.

KHAT intake

The study result has revealed that khat chewing prevalence during the time of the study is 17.6 %. This rate is lower than the finding of nationally undertaken survey on 2005 on Khat and alcohol among 15-24 that found out the prevalence to be 20.8 % (Derege, et al, 2005).

The prevalence rate comprises of persons who chew khat occasionally, weekly, frequently and every day. The majority of khat chewers are males, as shown in the table 4.2 who have 15.6% share of the whole participants in the study while only .02 % of the participants are females. Persons who chew khat occasionally (meaning who chew twice or once a month or even less) are 4.1% of the total participants (Male 3.9% and female 0.02). Those who chew at least once in a week are 5.2 %, frequently khat chewers are 6% and every day 2.2 %. So the finding shows males are by far higher users of khat than females.

Even if the prevalence is lower than the national but the situation is quite serious with regard to the pace of change from time to time. Both FGD and transect walk participants have affirmed their concern for rapidly increasing situation of khat chewing behavior especially among youths and adolescents.

Almost all of the transect walk participants, while observing the khat selling shops at the center of the city, said all started in the past 6 years. To quote directly from the participants verbal statement, one participant said " If one was here before 6 years he could have seen only 3 of them out of 15 khat selling shops that exist in a row, near to the market ". Similarly, some of the older FGD participants stated that the phenomenon of khat chewing behavior is a recent one (8-10 years back) and its progress is really very fast.

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ALCOHOL intake

The study measured the Alcohol intake to be approximately 42.3 percent. The estimate includes persons who drink alcohol occasionally (during holiday and familial ceremony), frequently and always. This rate is however, unlike chewing khat, higher than the nationally undertaken survey on 2005 on Khat and alcohol among 15-24 that found out the prevalence to be 11.4 % (Derege, et al, 2005). However, the difference can be attributed to the fact that the national survey has considered the occasional drinking behavior category the same as none while in this research it is considered as separate category. If the occasional and none are treated the same in this research the percent of alcohol consumers in Mekele according to this study is 8.8% that is lower than the national.

The majority of alcohol consumers in Mekele city are males as shown in the Table 4.2. Males have approximately 28% of the whole participants while female 14.3 %. However, the difference is not as big as seen in the khat chewing behavior. Age wise the majority are in the age range of 15-24. The majority of alcohols consumers are occasional drinkers 33.5 %. Only 1.3% of participants drinks alcohol every day.

The situation of alcohol consumption, unlike khat chewing and smoking, has relative recognition in the culture of the community in Mekele. Drinking alcohol, be it locally made (Tela, Teg) or brewed in factory such as beer, liquor, gin; especially during holiday and feast times have existed for many years in the tradition of the study area according to the participants from focus group.

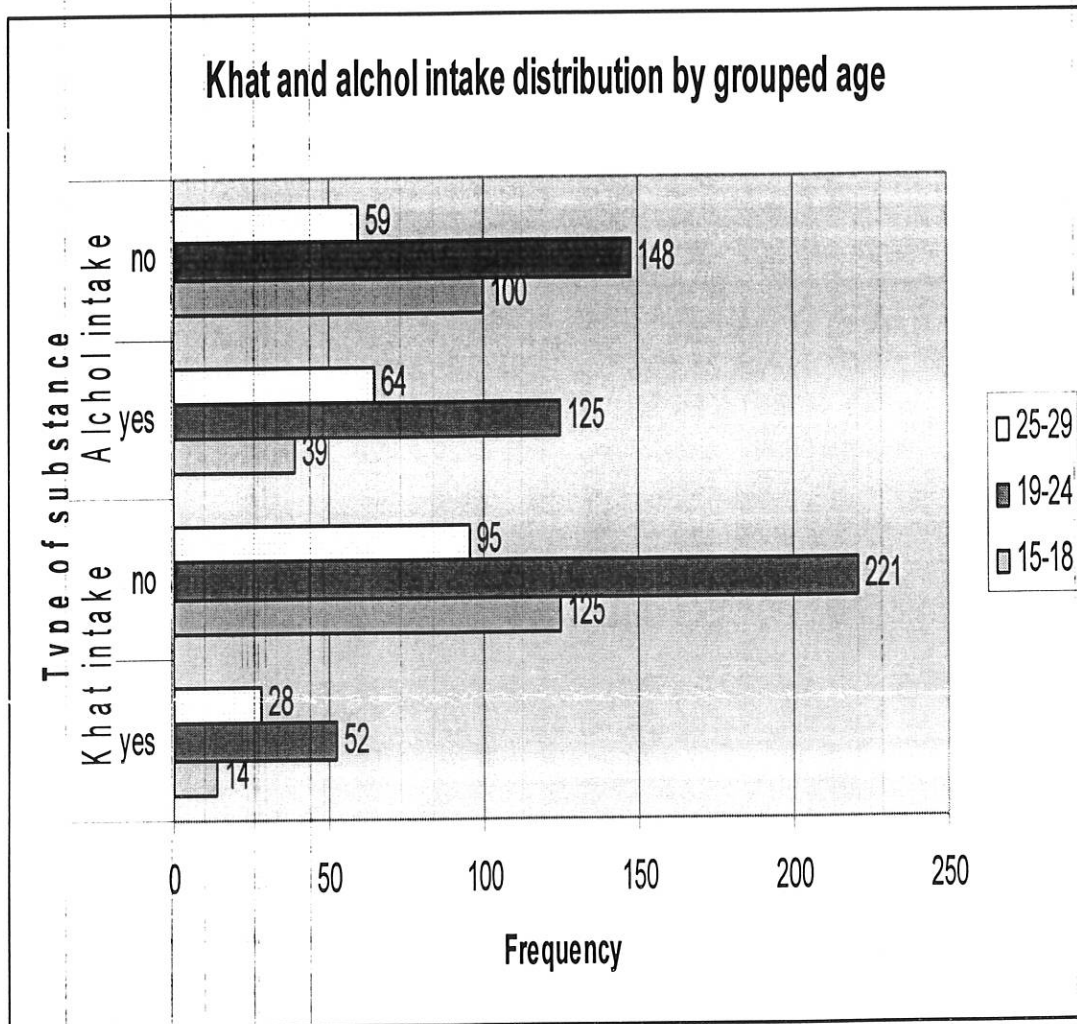
Similarly as compared to khat chewing shops bars, hotels and local drink selling houses have existed for many years. Nevertheless, the situation among adolescents and youths is changing from time to time in terms of the context they drink. They said that party houses where youth of both sexes get drunk and dance are flourishing rapidly in many corners of the city.

With regard to smoking 13.5 % of the whole participants have smoking behavior with majority being males (12.1 %). Besides 17.6 % of the participants view pornographic

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materials such as: sex, video, magazines and etc. And the result has shown that out of the total viewers of pornographic materials most of them are frequent viewer. Similarly sex wise males are the major viewers of the pornographic material.

Figure 4.1 Khat and alcohol intake distribution by age: Mekelle, Tigray Ethiopia, 2009



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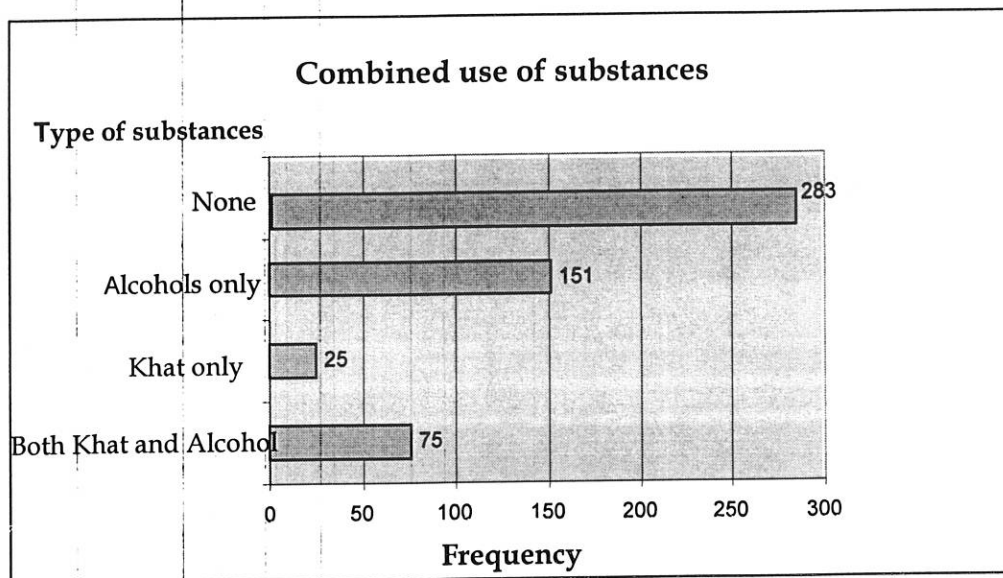
Table 4.2: Substance use characteristics of the study participant by sex: Mckelle, Tigray, Ethiopia, 2009

Characteristics	Number(Percentage)		
	Male	Female	Total
KHAT intake			
None.....	225{42.1}	216{40.4}	441{82.4}
Occasionally.....	21{3.90}	1{0.2}	22{4.1}
Weekly.....	23{4.3}	5{0.9}	28{5.2}
Frequently.....	28{5.2}	4{0.7}	32{6.0}
Every day.....	9{1.7}	3{0.6}	12{2.2}
Alcohol intake			
None.....	161{30.1}	148{27.7}	309{57.8}
Occasionally.....	108{20.2}	71{13.3}	179{33.5}
Frequently.....	33{6.2}	7{1.3}	40{7.5}
Always.....	4{0.7}	3{0.6}	7{1.3}
Smoking cigarette			
Yes.....	65{12.1}	7{1.3}	72{13.5}
No.....	241{57.2}	222{42.8}	463{86.5}
Viewing Pornographic material			
None.....	230{43.0}	211{39.4}	441{82.4}
Occasionally.....	17{3.2}	2{0.4}	19{0.6}
Frequently.....	59{57.2}	16{42.8}	75{17.0}

Field survey result

Another very important feature of the study that has to be stressed in substance use behavior is combined use of (more than one substance use) of different substances by the same person. The figure below shows that 75 respondents do had both khat chewing and alcohol behavior while only 25 of the 94 khat chewer never drunk alcohol.

Figure 4.2 Situation of substances combined use behavior, Mekelle, Tigray Ethiopia, 2009



Field survey result

A simple associations made was ratio to show the relative distribution between risky sexual behavior and multiple uses of substances. The result is depicted below in Table 4.3. The result shows that being user of both Khat and alcohol is more likely to expose into risky sexual behavior. The relative distribution of those who had risky sexual experience in the past six months over those who were not exposed to risky sexual behavior is high (75%) among users of both substances(Khat and alcohol) followed by khat only 47% , Alcohol only 26% and none with only 10 %.

This is also supported by the focus group discussion participants saying that there is an accustomed behavior among most of khat chewers' i.e. After chewing khat they drink alcohol (such as beer, gin, "tella" (local drink) depending on their income) to fight sleep disturbance and/or for other reason. At this time their sexual arousal is initiated making them prone to hasty/irrational decision capacity hence risky sexual behavior.

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Moreover during khat chewing , as one of the of in depth interview participant have said, they are served by ladies with sexually soliciting way of dressing and also view pornographic videos that also facilitates sexual arousal and expose them selves in risky sexual behavior.

Table 4.3: Relative distribution of combined use of Khat and Alcohol and risky sexual behavior, Mekelle , Tigray, Ethiopia, 2009

Multiple use of Khat and alcohol	Risky sexual behavior		Relative distribution	Total
	Yes	No	Yes/No	
Both Khat and alcohol.....	31	41	75.61	72
Alcohol only.....	8	17	47.06	25
Khat only.....	31	120	9.42	151
None.....	27	256	10.55	283
Total.....	79	452	N/A	531

Field survey result

4.1.3 The situation of peers' influence, open discussion with parents and youth religiosity

The study has attempted to measure the influence of peer's, the situation of open discussion at family level and religiosity of youth on substance use and sexual behavior. A number of questions scaled with likert scale have been included to the questionnaire, collected and averaged to assess whether there is open discussion with his family or not; whether there is negative peer influence or not and; whether the respondents are highly religious or not. The results are narrated below and illustrated in Table 4.4

Open discussion with parents

Three questions that are believed to measure open discussion with parents were asked. These are: discussion about sex issues,(ii) discussion about substance use behavior with their parents and (iii)whether participant's parent use corporal punishment or not.

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As far as open discussion is concerned, the result revealed that 347(64%) of participants have/had frequent and open discussion with their parents. About 11% of the participants had mediocre level. Open 24.30 % of the study participants, however, have/had little or no open discussion with their family. Looking at age wise, most of the adolescents had greater open discussion with their family that may indicate that family up bringing approach is changing. Table 4.4 indicates that 75% of 15-24 had open discussion with their family followed by 61% of 19-24 and 60% of 25-29.

This is true also according to FGD participants now a day the way family are upbringing their children has changed so much than before. One of the participants said "Now days most parents are opting discussion, orienting their children about many issues that concerns youths ..."

Peers' influence

With regards to peer pressure three questions were asked and averaged to classify the respondent type of exposure to peers' influence. The questions are first, whether he/she had friends in the neighborhood or age mates influencing his/her to be exposed to substance use. Second whether he/she have friends neighborhood or age mates influencing him to have sexual intercourse and the last being whether most of his/her friends were substance users or not. The averaged result categorizes respondents as having Positive, mediocre, negative peer's influence.

Hence, as the table below shows, 46.5 % had faced positive peer pressure meaning that they have very small pressure from friends and other community members to make substance. 16 % had faced very high negative peer pressure meaning that their community members and friends encourage them to be exposed in substance or involve in sexual activity. Table 4.4 indicates positive peer's influence exists better in age group 15-18(51%) followed by age 19-24(47%) and 25-29(39%).

Socio demographic correlates of substance use and sexual behavior

Youth religiosity

Similarly youths religiosity have been measured as an averaged result of three questions i.e., frequency of visiting religious institutions (churches, mosques...); fulfilling religious expectations (fasting and related) and praying frequency.

The result illustrates that 62.43 are highly religious followed by medium one 21% and low religious are 15 %. Religiosity is also different as far as age is concerned; age group 15-18(71%) is highly religious followed by 25-29(62) and the last being 19-24 (57%).

Table 4.4 Participants level of category by parent-child open discussion, youth religiosity and peer pressure by age group, Mekelle, Tigray, Ethiopia, 2009

Variable	Category	Age Grouped							
		Number(Percentage)							
		15-18		19-24		25-29		Total	
Peer pressure on respondents	Negative.....	14	(2.62)	48	(9.00)	25	(4.67)	87	(16.26)
	Medium.....	53	(9.91)	96	(17.9)	50	(9.35)	199	(37.2)
	Positive.....	72	(13.46)	129	(24.1)	48	(8.97)	249	(46.54)
	Total	139		273		123		535	(100.0)
Respondent's Open Discussion with parent and family	Low.....	20	(3.7)	75	(14.0)	35	(6.54)	130	(24.3)
	Medium.....	14	(2.6)	31	(5.8)	13	(2.43)	58	(10.84)
	High.....	105	(20.0)	167	(31.2)	75	(14.02)	347	(64.86)
	Total	139		273		123		535	(100.0)
Religious fellowship on Participation	Low.....	16	(3.0)	43	(8.0)	25	(4.67)	84	(15.7)
	Medium.....	24	(4.5)	72	(13.5)	21	(3.93)	117	(21.87)
	High.....	99	(19.0)	158	(29.5)	77	(14.39)	334	(62.43)
	Total	139		273		123		535	(100.0)

Field survey result

4.1.4 Sexual behavior and practice of respondents

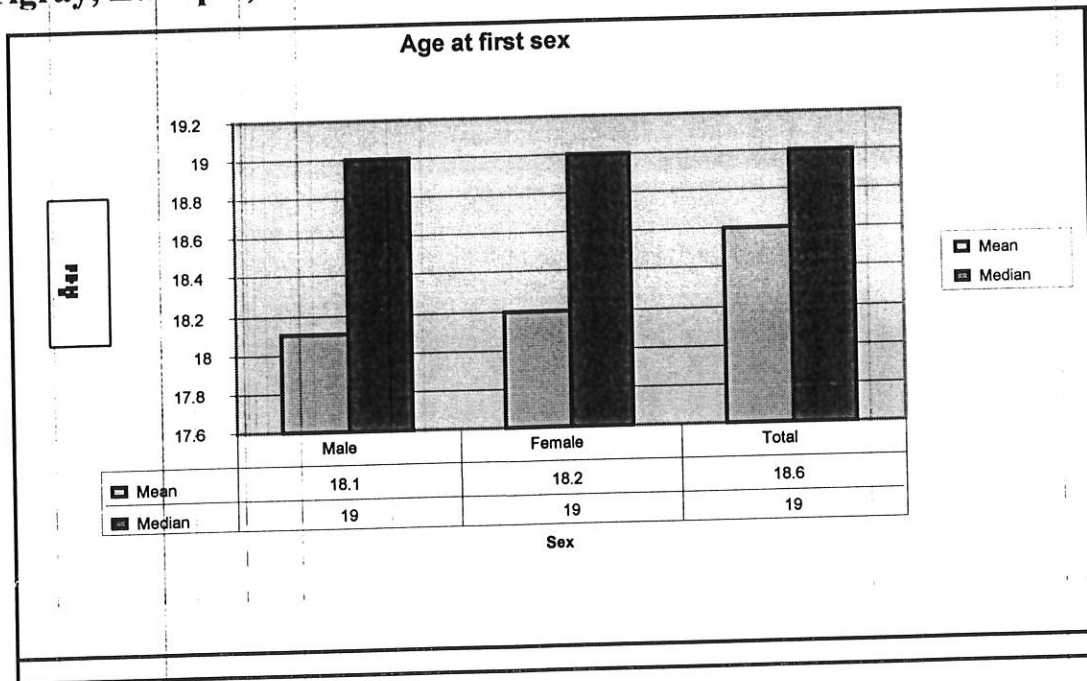
Participants of the study were asked a number of questions that are related to sexual behavior and practices. Figure 4.3 shows the calculated age at first sex. The measurement have been made through censoring (Assuming respondents who had not ever have sexual intercourse, have their first sex during the time of interview) method meaning considering those who haven't made sex being considered as if they had sex during the time of interview.

Age at first sex

Both median and mean were calculated and, as a result, the finding have shown the mean age at first sex of Mekelle adolescents, youth and young adults to be 18.6 while the median age is 19. Mean age at first sex for males is 18.1 and 18.2 for female. Median age at first sex for females is similar for both sexes being 19. The findings indicate that age at first sex is comparatively late to females and early to males.

When we look at the finding of DHS 2005 the data shows that men initiate sex at a later age than women. The median age at first intercourse for men age 25-49 is 21.2 years. An assessment of the median age at first intercourse across the different age cohorts indicates that there has not been any significant change in age at first sexual intercourse for men over the past 20 years. (DHS, 2005)

Figure 4.3 Age at first sex by sex and measures of central tendency. Mekelle, Tigray, Ethiopia, 2009



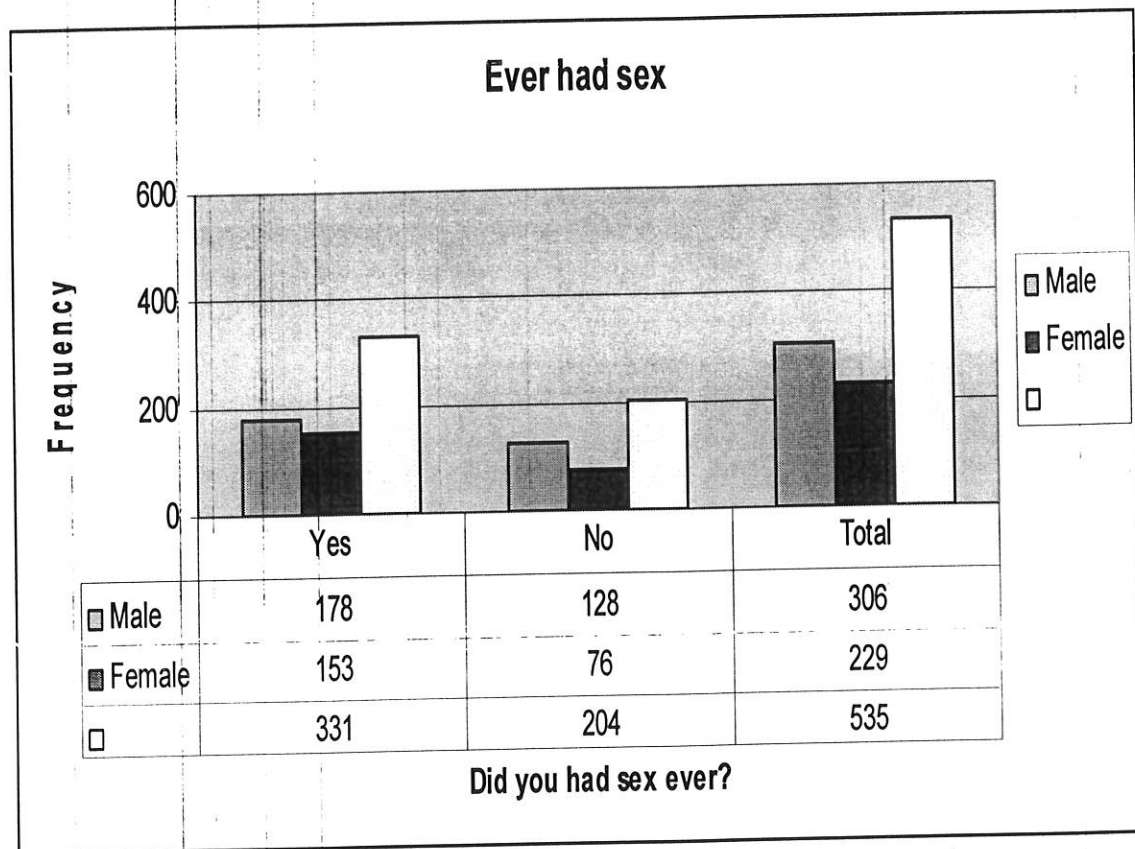
Field survey results

Ever had sex by sex characteristics

Participants have also been interviewed whether they had sex ever in their life until the time of survey. As presented in figure 4.4, that 331(61%) participants have had sex at least once in their life time out of the total 535(61%).

In terms of sex 178(98.2) out of the total (58%) 306 males have had sex at least once in their lifetime. On the other hand, 128 (66%) of 229 females have had sex at least once in their life time. Even if higher proportion of respondents of both sexes who have had sexual experience at least once, comparatively females have larger proportion of sexual behavior.

Figure 4.4 Respondent distributions of those who "ever had sex" by sex, Mekelle, Tigray, Ethiopia, 2009

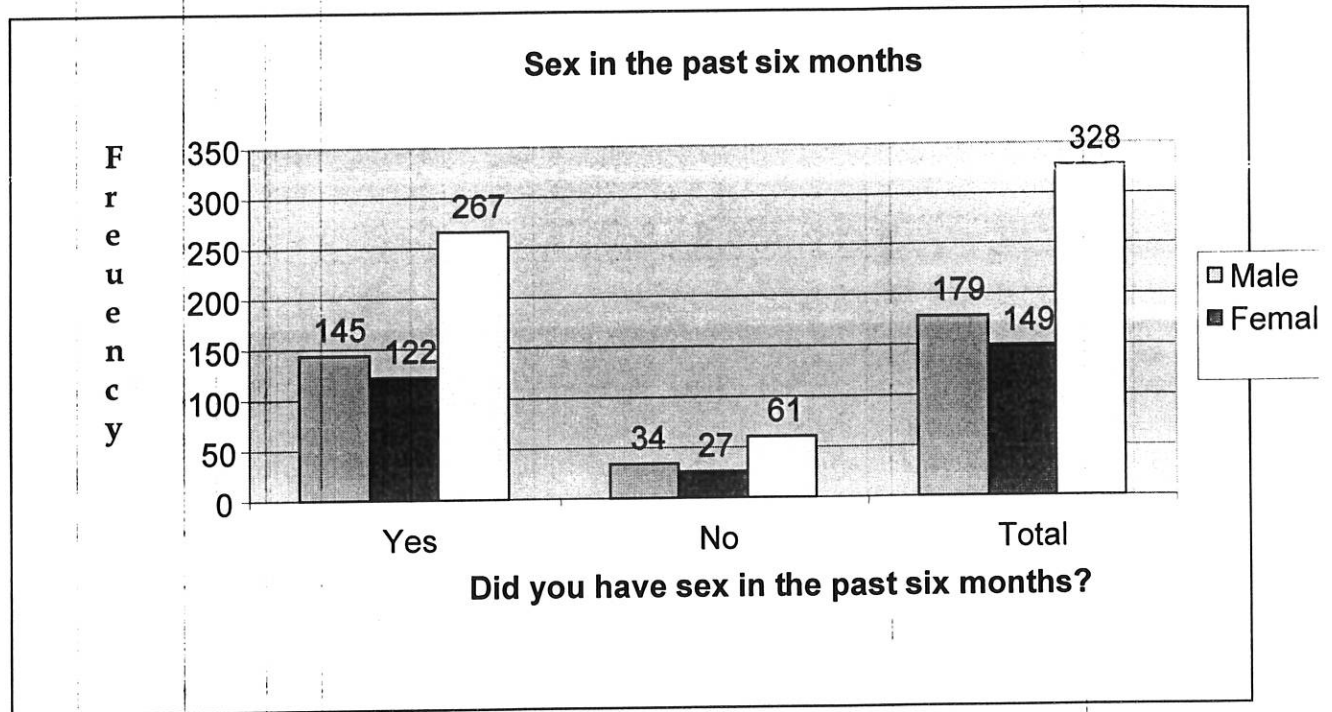


Field survey result

Sexual practice in the past six months

More specific questions were asked in order to explore further about the sexual behavior of respondents. Thus, one of the questions they have been asked were whether they have had sex in the past six months or not. Figure 4.4 shows that 267 participants have sexual experience in the past six months (i.e. approximately 50% of the participants have sex in the past six months. Out of this 145(27%) were males and 122 (22%) were Females.

Figure 4.5 Respondent distributions of those who had sexual experience in the past six months by sex, Mekelle, Tigray, Ethiopia



Field survey result

4.2 Relationships between socio-demographic variables, substance use and sexual behavior

The previous parts of this chapter have described the socio demographic characteristics of the substance users and the sexual behavior and practices. More over, we have seen the situation of peer influences, open discussion between parent and child, and level of youth religiosity.

This study has also tried to measure the association between substances use behavior and risky sexual behavior using different inferential statistical analysis. Different kinds of bivariate and multi-variate analysis were used. Chi-square, from bi-variate analysis and binary logistic regression from multivariate analysis has been employed.

The results are presented below with narratives. Moreover the findings from focus group discussion and In-depth interview are incorporated along with results of quantitative analysis to elucidate the situation. On the top of that additional references are made in detail. One thing to remember is, however, most of the explanation and references are treated in the multivariate

Socio demographic correlates of substance use and sexual behavior

analyses; and in the bi-variate analysis only presentations are described so as to reduce duplication of presentations and narrations.

4.2.1 Bi-variate analysis

Chi-square

Risky sexual behaviour among adolescents, youth and young adults varied under the influence of various factors. Under this section the suspected relationship between the dependent variable and the selected independent variables were examined by the Pearson chi-square test. A higher value of Pearson chi-square and small value of p (<0.01) shows the presence of causal association between the dependent variables and its specified predictor.

Risky sexual behaviour is categorized as a person who has more than one partner, or had casual sex, or had premarital sex in the past six months in the absence of protective measure. The general result shows that risky sexual behaviour (being dependent variable) is affected by socio-demographic variables (e.g., Age, Marital Status, work status, current living status & educational status), peer pressure, youth religiosity open discussion with parents and substance use behaviour being independent behaviour.

The results of the association between risky sexual behaviour and independent variables (These are age of the respondents, sex, educational level, employment current living status, marital status) is presented in table 4.5.

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Table 4.5: Chi Square results of Risky sexual behavior versus with selected socio demographic variables, Mekelle, Tigray, Ethiopia, 2009

Variable	Categories	Have been exposed to risky Sexual practice		Value	Significance
		Yes	No		
Sex	Male.....	54	252	4.71	0.030
	Female.....	25	204		
Age	15-18.....	8	131	12.99	0.002
	19-24.....	52	221		
	25-29.....	19	104		
Employment Status	No Work.....	19	129	3.05	0.217
	Student.....	24	166		
	Working.....	36	161		
Current living status	With both parents.....	22	231	38.69	0.000
	With Single Parent Headed....	17	63		
	With relative and/Custodian.	2	18		
	With partner.....	6	17		
	Alone.....	7	80		
	Other.....	25	47		
Marital Status	Never Married.....	43	275	28.04	0.003
	Have Steady married.....	14	93		
	Currently Married.....	8	73		
	Ever Married.....	14	15		
Educational Status	Did not attend formal education	6	18	7.86	0.049
	Completed up to 10.....	39	168		
	TVET and Pre college.....	23	187		
	Higher Education.....	11	83		

Field survey result

Sex is one of the predictor variables and has association with the dependent variable at ($\chi^2=4.71$; $P<0.03$). The proportion of males who have risky sexual behaviour infection is higher than that of females (i.e., 27.3% and 19%, respectively).

Age: Age is one of the predictor variables as it has association with the dependent variable at ($\chi^2=12.99$; $P<0.02$). Higher risk sexual experience is high in proportion in 19-24 years, followed by 25-29 and 15-29.

Socio demographic correlates of substance use and sexual behavior

Employment status:-This variable status however did not show association that is significant one

Educational Level: Education is expected to be an important protective factor how ever, the study result does not show a strong association like the other variable despite being significant i.e. ($\chi^2=7.86$; $P>0.049$).

Marital status: - Closely associated with have risky sexual behaviour significant $\chi^2=28.04$; $P<0.003$). Never married being the first followed by having steady friend and ever married and, currently married being the last.

Current living status: - Closely associated with risky sexual behaviour significant $\chi^2=38.69$; $P<0.00$). Being alone is more likely to risky sexual behaviour and being with both parents is the least.

Table 4.6:- Chi Square results of Risky sexual behavior versus Youth religiosity, Peer pressure and Parental openness, Mekelle, Tigray, Ethiopia, 2009

Variable	Categories	Have been exposed to risky Sexual practice		Value	Significance
		Yes	No		
Peer pressure	Positive.....	26	223	40.01	0.00
	Medium.....	21	178		
	Negative.....	32	55		
Religious Participation	High.....	25	309	46.43	0.00
	Medium.....	24	93		
	Low.....	30	54		
Open Discussion	High.....	23	324	54.09	0.00
	Medium.....	14	44		
	Low.....	42	88		

Field survey result

Peer pressure: -According to the study peer pressure is closely associated with risky sexual behaviour significant $\chi^2=40.01$; $P<0.01$). This means that person who have friends soliciting

Socio demographic correlates of substance use and sexual behavior

them to have Khat, Alcohol and sexual intercourse are more likely to have risky sexual experience.

Youth Religiosity: - The study also revealed that youth who are religious have strong relation to risky sexual behaviour significant ($\chi^2=46.43$; $P<0.01$). This means that person who repeatedly visits church or mosque and prays and practice religious discipline is less likely to have risky sexual experience.

Open discussion: - Similarly open discussion with parents also significantly contributes less to risky sexual experience significant ($\chi^2=54.09$; $P<0.01$).

Table 4.7:- Chi Square results of Risky sexual behavior versus Youth religiosity, Peer pressure and Parental openness, Mekelle, Tigray, Ethiopia, 2009

Variable	Categories	Have been exposed to risky Sexual practice		Value	Significance
		Yes	No		
Alcohol Intake	None.....	36	273	33.51	0.000
	Occasionally.....	24	155		
	Frequently.....	14	26		
	Always	5	2		
Khat intake	None.....	40	401	76.22	0.000
	Occasionally.....	7	15		
	Weekly.....	8	20		
	Frequently.....	18	14		
	Every day.....	6	6		
Combined intake of both Khat and Alcohol	Both khat and alcohol.....	31	41	61.98	0.000
	Khat only.....	8	17		
	Alcohol only.....	13	138		
	None.....	27	256		
Viewing Pornographic	None.....	56	385	9.48	0.009
	Occasionally.....	6	13		
	Frequently.....	17	58		

Field survey result

Khat and alcohol behavior, multiple use of substances and viewing pornographic materials have effect on risky sexual behavior all of them significant.

Alcohol intake: - According to the study Alcohol intake is closely associated with risky sexual behaviour significant ($\chi^2=33.51$; $P<0.01$). This means that person who has friends soliciting them to have Khat, Alcohol

Khat in take - The study also revealed that youth khat intake have strong relation to risky sexual behaviour significant ($\chi^2=76.22$; $P<0.01$) which is strongest of all other variables. This means that person who does not chew is less likely to have risky sexual experience

Multiple use of substances:-Similarly use of both alcohol ad khat consecutively; leads to higher sexual risk compared to either alcohol or khat only. "None" being the least risk bearer significant at ($\chi^2=61.98$; $P<0.01$).

Viewing pornographic - Similarly viewing pornography material with parents also significantly contributes less to risky sexual experience significant($\chi^2=9.48$; $P<0.009$).

4.2.2 Multivariate analysis

In the previous subtopic of this chapter, chi-square analyses results have examined the effect of different predictor variables on the risky sexual behaviour. According to the result, depicted in the previous tables, all variables except employment status, proved to have an association with risky sexual behaviour at ($P<0.05$). More importantly the association for most of the variables is highly significant ($P<.01$).

Despite the fact that chi square has detected out the existence of an association between the variables; it has limitation in illustrating how strong the relationship is. In an effort to unravel the strength of relationships, logistic regression is used to analyze the level of association between the selected socio demographic variables and risky sexual behaviour. Moreover, logistic regression is also ran to see the effect of different variables on chat chewing behaviour of youth.

Two separate binary Logistic regression analysis are ran to measure the predictor variables that best fits for Khat intake and risky sexual behaviour. In the first logistic regression result, the dependent variable was khat use behaviour coded as dummy of 0- No and 1- Yes. The

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independent variables are sex, employment status, and marital status, open discussion with parents, religiosity, peer pressure and alcohol drinking behavior.

The second logistic regression analysis in the dependent variable was risky sexual behaviour coded not risky as 0 and risky as 1. The independent variables are sex, employment status, and marital status, viewing pornographic material, open discussion with parents, religiosity, peer pressure, alcohol drinking behavior khat chewing behavior and combined use of khat and alcohol.

The results of the analysis are discussed below and presented in table 4.8 and 4.9

4.2.2.1 Results of binary logistic regression khat chewing behavior versus socio-demographic variable

Table 4.8 Logistic regression results of khat chewing behavior versus socio-demographic variable, Mekelle, Tigray, Ethiopia, 2009.

Variable	Categories	B	S.E.	Sig.	Exp(B)
Sex	Male (ref).....				
	Female.....	1.798007	0.723017	0.0129	6.037606
Employment status	No Work (ref).....				
	Student.....	-0.63923	0.772032	0.4077	0.5277
	Working.....	-0.78343	0.657377	0.2334	0.456834
Marital Status	Never Married (ref)...				
	Have Steady married.	-2.11218	0.915205	0.0210	0.120974
	Currently Married.....	-3.95953	1.010199	0.0094	0.01907
	Ever Married.....	-2.6239	1.401111	0.0047	0.07252
Alcohol	No (ref).....				
	Yes.....	2.063217	0.663621	0.0019	7.871251
Peer pressure	Negative (Ref).....				
	Medium.....	3.687342	0.811372	0.0000	10.1082
	Positive.....	2.759009	0.716758	0.0001	6.136158
Open Discussion	Low (Ref).....				
	Medium.....	1.705073	0.648219	0.0085	5.501785
	High.....	0.015155	1.01674	0.0210	1.015271
Religion	Low (Ref).....				
	Medium.....	1.816104	0.790371	0.0216	6.147861
	High.....	1.653175	0.695304	0.0174	5.22354

Field results

Socio demographic correlates of substance use and sexual behavior

The examination of logistic regression of chewing khat by different socio demographic variables shows that all, except employment status, proved to have significant relationship ($P < 0.05$). The variables with significant relationships are sex, marital status, and alcohol drinking behaviour, peer pressure, open discussion and religiosity.

Sex and Khat chewing behaviour

The multivariate analysis results of this study also show that sex is a significant variable to predict khat chewing behaviour. Being female is found to be less likely to chew khat than male. As can be observed from Table 4.9 males are 6 times likely to have khat chewing behaviour than females ($P < 0.05$).

This issue of sex and khat chewing behaviour result was one of the hot discussant issues among the FGD participants in the sense that some of them support the idea that females are also increasingly becoming khat chewers and others do not. Later on consensus was created on the fact that currently the majority of khat chewers are males, though; female khat chewers are increasing from time to time. Previous study undertaken in Bahirdar also confirms the fact that majority of khat chewers are males (63 %) and the rest being females. (Hibret , et al, 2007)

Marital status and khat chewing behaviour

The multivariate analysis results of this study show that marital status is a significant variable to predict khat chewing behaviour. Being currently married is 99% less likely to chew khat than never married, have steady friend is 88% less likely than never married and ever married is 93% less likely to never married.

The study have clearly revealed that being never married is a factor that increases the likelihood to khat chewing behaviour which is also supported by FGD participants saying that being unmarried especially being alone is one of the risk factors. Most of the khat chewers stop khat chewing behaviour after getting unmarried.

Peer pressure and khat chewing behaviour

This variable is also a very important factor that determines khat chewing behaviour ($P < 0.05$). That is it is 10 times a person who is exposed with negative peer pressure to have chewing khat behaviour than with middle level and 6 times more likely than with a person who have positive peer pressure. Many researches have confirmed that peer influence is one of the most important factors for substance use and risky sexual behaviour.

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"Having friends who break the law increases individual offending (having friends who smoke or drink alcohol increases one's own cigarette smoking and alcohol use; having friends with poorer mental health leads to more individual depression and anger and less resiliency older induces females to become sexually active earlier than they would otherwise have done. But whatever the interpretative framework, causal claims like those above provide the major empirical warrant for contending that peers matter" (Thomas, et al, 2007).

Moreover, in-depth interview participants have attested that most of their friends are khat chewers that reinforces them to stay and undermines the initiative to stop.

Youth religiosity and khat chewing behaviour

Another important determining factor is youth religiosity. Religiosity determines khat chewing behaviour ($P < 0.05$). The study result reveals that a person with low religious attendance is 6.1 more times than the middle and 5.2 more times than high religious to have khat chewing behaviour. The plausible explanation for this, according to many literatures is that a highly religious person gets many lessons about the expected moral standard of his behaviour, and also gives motive to act accordingly.

Open and khat chewing behaviour

This variable is also a very important factor that determines khat chewing behaviour ($P < .05$). That is, it is a person who was less exposed to open discussion with his/her parents is 5.5 more likely than medium and 0.015 more likely than with high open discussion exposure to have khat chewing behaviour. Similarly different literatures attest the role of family upbringing is very crucial for the future life of children.

Alcohol drinking behaviour: and khat chewing behaviour

Is also predictor variable to chewing khat in the sense that being alcohol drunker increase the likelihood of khat chewing i.e. it is 7.871 times more likely for a person to chew khat when a person is having drinking behaviour than who did not drink ($P < .05$) level.

The FGD participants have stated that the very source for khat chewing is not alcohol but khat chewing behaviour increases alcohol drinking behaviour. To quote from the direct words of one of the in-depth interview participants "When ever I chew khat I decide to drink alcohol after it for different reasons like to prevent sleeplessness during night, just because I am accustomed to it and refresh. Even if i don't have money i have to do it through asking credit to my friends or pressuring them to invite me."

Socio demographic correlates of substance use and sexual behavior

Employment status and khat chewing behaviour

According to this study finding the fact that being a student or being an employed or unemployed did not show a strong association ($P < .05$).

Employment status is said to have a reason for khat chewing behaviour but this study didn't prove it has a relationship. Different explanations can be discerned for this phenomenon. As one of the in-depth interview participants has said the reasons they chew khat is in order to improve their work performance and/or concentration during reading.

Summary

As we can learn from the results a number of factors are attributing a person to become a khat chewer in the study. These are marital status, Open discussion, religiosity and peer pressure. Moreover khat is acting as a catalyst and reinforces a person to become an alcohol drinker.

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4.2.2.1 Results of binary logistic regression Risky sexual behaviour versus socio-demographic variable

Table 4.9 Logistic regression results of Risky sexual behavior versus socio-demographic variable

Variable	Category	B	S.E.	Sig.	Exp(B)
Sex	Male (ref).....				
	Female.....	0.572242	0.327062	0.059	1.187966
Employment status	No Work (ref).....				
	Student.....	-0.14777	0.366877	0.687	0.862628
	Working	-0.16821	0.346404	0.627	0.845175
Marital Status	Never Married (ref)...				
	Have Steady married.	-1.67117	0.498541	0.000	0.188028
	Currently Married.....	-1.94182	0.552782	0.000	0.143443
	Ever Married.....	-1.86049	0.599122	0.0019	0.155596
Open Discussion	Low (Ref).....				
	Medium.....	0.807638	0.421647	0.045	2.242604
	High.....	1.261503	0.410505	0.002	3.530723
Religion	Low (Ref).....				
	Medium.....	0.879716	0.419149	0.035	2.410216
	High.....	0.665875	0.365035	0.068	1.946192
Pornographic View	None (ref).....				
	Occasionally.....	-0.28382	0.371047	0.444	0.7529
	Frequently.....	0.399076	0.636179	0.530	1.490447
Khat chewing	Yes (ref).....				
	No.....	0.981879	0.623558	0.011	2.669467
Alcohol	Yes (ref).....				
	No.....	0.724415	0.892298	0.016	2.063523
Combined substance use	Both Khat and alcohol				
	Alcohol only.....	1.969756	0.312397	0.000	7.168925
	Khat only.....	1.495569	0.474096	0.002	4.461874
	None.....	-0.11296	0.353713	0.749	0.893183

Field results

The result of logistic regression of risky sexual behaviour by different socio demographic variables shows that marital status, and alcohol drinking behaviour, open discussion and

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religiosity, combined use of substances, khat chewing behaviour proved to have significant relationship ($P < 0.05$). Others such as employment status, viewing pornographic view and sex are found to be strongly ($P < 0.05$).

Marital status and risky sexual behaviour

Like the previous examination also show that marital status is a significant variable to predict risky sexual behaviour. Being currently married is 86% less likely; having regular sex partner is 82% less likely; and being ever married 85 % less likely to be exposed for risky sexual behaviour than never married. The explanation for this phenomenon is more or less the same like that of khat.

Youth religiosity and risky sexual behaviour

Another important determining factor is youth religiosity. Religiosity determines risky sexual behaviour ($P < 0.05$). The study result reveals that a person with low religious attendance is 2.4 times more likely than the middle and 1.9 times more likely than high religious to have risky sexual behaviour. The explanation being religious teachings emphasizing that extra-marital sex, pre-marital sex are sinful acts that influences the religious persons restrain them selves compared less religious one.

Open discussion with parents and risky sexual behaviour

This variable is also a very important factor that determines risky behaviour ($P < 0.05$). That is, a person who was less exposed to open discussion with his/her parents are 2.2 more likely than medium and 3.5 times more likely than those with high open discussion exposure to have risky sexual behaviour.

"Teenagers who feel that they have a high-quality relationship with their parents and who communicate regularly with them are likely to initiate sex at a later age and behave in less risky ways than their peers. Moreover, teens whose parents talk about sex and birth control with their children, and communicate strong disapproval of sexual activity, are more likely to have positive reproductive health outcomes (Jennifer, et al, 2002)"

Alcohol drinking behaviour and risky sexual behaviour

Is also predictor variable to risky sexual behaviour in the sense that being alcohol drinker increase the likelihood to be exposed in risky sexual behaviour i.e. it is 2.06 times more likely for a person to be exposed in risky sexual behaviour when a person is having drinking behaviour than who did not drink ($P < .05$).

"Significant number of young people report engaging in risky sexual behaviour because of alcohol or drugs (The HENERY J KAISER FAMILY foundation, 2002). Another study made also affirms that "The persons who drink alcohol are about three times more likely to have sex either with non regular partner or in exchange for money ($OR=2.78, 95\%v CI 1.83-4.23$) than those who did not report consumption of alcohol. (Hibret, et al, 2007)

Khat chewing and risky sexual behaviour

Is also predictor variable to risky sexual behaviour meaning that being khat chewer increases the likelihood to be exposed in risky sexual behaviour i.e. it is 2.6 times more likely for a person to be exposed in risky sexual behaviour when a person is having khat chewing behaviour than who did not chew ($P < .05$).

This is also indicated by different researches who have said "Khat use was strongly associated with initiation of sexual activity with four fold, increased odds by daily and weekly users.... it also found that khat intake was also associated with unprotected sex: adj. $OR(95\%CI)=2.26(1.92,2.67)$ (Derege, et al, 2005)

Combined substance use and risky sexual behaviour

Is also predictor variable to risky sexual behaviour in the sense that being alcohol drinker and khat chewer increases the likelihood to be exposed in risky sexual behaviour i.e. it is 7.16 than alcohol only and, 4.4 than khat only more likely for a person to be exposed in risky sexual behaviour ($P < .05$).

Being none is however 89% less likely than who use both substances to have engaged in risky sexual behaviour.

Socio demographic correlates of substance use and sexual behavior

Combined substance use, according to both In-depth interview and focus group participants, is one of the most important factors that increase the likelihood of exposure to risky sexual behaviour." Many addicted person frequently during alcohol after chewing khat that leads them to make unreasonable decision" according to one of the participants of FGD. Similarly previous research in Bahirdar found out that "After chewing khat to avoid the problem if sleep disturbance and anxiety that usually follows the consumption of khat. Taking too much alcohol, in turn was reported to results in lack of inhibition from indulging in unprotected sex (Hibret, et al, 2007)

Sex and risky sexual behaviour

The multivariate analysis result of study does not show that sex is a significant variable to predict risky sexual behaviour.

Employment status and risky sexual behaviour

Similarly like the previous logistic result finding of this study is the fact that being a student or being an employed or unemployed did no show association.

Viewing Pornographic material and risky sexual behaviour

The multivariate analysis result of study does not show that viewing pornographic material a significant variable to predict risky sexual behaviour. The very reason for this can be related to the less reservation in providing the honest information and the placing of the questionnaire was at the end that lowered its correct response rate

So generally we can see that a number of socio demographic variable results in risky sexual behaviour. Open discussion with families, Peer influence, Religiosity, khat Chewing, Alcohol drinking behaviour, and more importantly combined use khat and alcohol are the most important predictors of Risky sexual behaviour. However, viewing pornographic materials, Sex, employment status didn't show significant association with risky sexual behaviours.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

It can not be hoped that such a small scale study will reveal the whole intricate and complex pattern that exists in substance use behaviors and its link with risky sexual practices. However, a number of important findings have come up from the study result that give better understanding to the issues and can also highlight recommendation as to what could be done in an effort to improve social, psychological and physical health situation of youth and adolescents of the area.

This cross-sectional quantitative plus qualitative study, however, have addressed its intended objective stated in its proposal; To measure the magnitude of substance users (khat and alcohol, describe the socio demographic correlates of the users and non users), compare the sexual experiences (behaviors and practices) among users and nonusers, elucidate the explanation for exposure to substance us among the youth and young adults (15-29) in Mekelle.

The study results have shown that 17.6 %, 42.3% and 13% of the participants do have Khat chewing, alcohol drinking and smoking behaviors respectively, though at different level of intake. Male, 15-29, unmarried are the dominant characteristics of the users in all kinds of substances studied here. Qualitative study participants have clearly affirmed that the situation have been getting more and more serious from time to time.

Khat and alcohol use have direct implication on the risky behavior of its user. Using of alcohol and khat has strong association with risky sexual behavior significant at < 0.05 P value. Multiple use of substance i.e. persons who use both khat and alcohol consecutively have even very stronger association to risky sexual behavior at < 0.05 P-value. The effect of khat is highly aggravated when the use of khat is accompanied by the intermediate use of other substances such as alcohol, pornographic view and chewing with opposite sex

Peer pressure is one of the most important factors that shape the behavior of the youth with regard to substance use behavior and risky sexual behavior. Similarly youth religiosity has an important contribution for a person to preserve him/her self from indulging to substance use.

Parental relationship is also a very important factor for the youth's behavior to substance use and risky sexual behavior. The existence of open discussion with family members contributes to shape the substance use behavior. The result have found out the importance of having open discussion at family level regarding sexual, substance use and abandoning corporal punishment for it gives adolescent and youth to understand the risky situation ahead and develop the life skill to avoid them selves from this kind of exposure.

The study finding implies that the situation of khat and alcohol use is a problem leading to unsafe sexual practice and, hence consequently reproductive health problem. Intervention is required at different level that demands the active participation of different stakeholders. Hence, the following recommendations are forwarded by the student researcher that must be done in order create positive situation for health all rounded development of the adolescent youth.

5.2 Recommendations

- Diversification of recreational amenities by concerned body should be given due emphasis. One of the frequently raised reasons for the youth to indulge themselves in drinking alcohol, chewing khat and hence expose themselves into risky sexual behavior is the absence of public and private amenities and recreational places according to qualitative participants and interviewee from survey questionnaire. It is not easy to find places that can give them an alternative with recreational facilities (like football, basketball, tennis, gymnasium, theater show, art exhibition centers and libraries.)
- Developing an appropriate practical legal measures and launching them to control distribution and use of substance use especially khat where by the risk of exposure by youth will be reduced. The focus group participants have stated that the regional

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government had taken legal measures to stop the khat trade. Nevertheless the measures were not successful due to different reasons. In spite of the fact, the situation is increasing from time to time. However, practical legal measures can be taken with the active involvement the community at large. This is because the community dwellers have a keen interest to stop the expansion of khat trade at least from being used by adolescent and youth.

- Implementations of youth specific communication programs aimed at improving their knowledge and skills about substance use, reproductive health and related issues. Using channels, that already exists or can easily be formed in the city, like FM radio, school min media, and In-school and out of school and neighborhood; peer-to-peer exchanges approaches can be strong communication opportunity provide and updates correct information knowledge and skill.
- Building strong youth network and support group at community level that work on the issue of substance use and reproductive health. This could be done either through establishing new or integrating through the exiting anti HIV/AIDS, clubs and youth association. The establishment ad supporting new ad existing clubs and association in substance use issues.
- Sexual education should be incorporated in-school and at family level. Sexual education should be facilitated through initiating programs through and parent and student forum in school and should also e entertained through curriculum and teachers should also train with this regard.
- Building strong network of community members at community level through establishing and fostering community dialogue forums such as community conversation, youth dialogue and participator community discussion about the substance use and how it can be controlled. This can be incorporated through existing community institution and community based organization like *idir, equb and sewa*

senbet. This will help in order to improve their knowledge of how to handle youth behavior and educate positively.

- Building the ethical standard of youth through ethics and moral committee and/or at in-school and out- of -school. In addition, religious and faith based organization should work actively to build the ethical and moral obligation of the believer youths by their respective religious institution.
- Further researches particularly on the link between substance use and reproductive health problems and/morbidity should be conducted and disseminated to concerned bodies.

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Annex I

Consent Form

Hello dear respondent

My name is _____. This study is being undertaken by Addis Abba University (AAU), a post graduate (M.A) student of College of Development Studies (CDS) Institution of Population Studies (IPS).

The study is intended to assess the socio-demographic characteristics, peer influences, familial relationship, sexual behavior, sexual practice, reproductive health issues, substance use situations and related matters of adolescents, youth and young adults who are within the age range of 15-29 years in Mekele city.

Hence, the questionnaire attached here with this consent form will help to collect necessary information to do the research.

I would like to remind you that the information you give will only be used to this purpose and hence, confirm you that they will be maintained confidential through out the whole process.

Considering the importance of the purpose of the study I hope you will cooperate, Nevertheless this cooperation is totally based on your consent.

Finally, I would like to thank you the interaction this far

I am willing to participate in the study

Yes	Give Thanks and start interview
-----	---------------------------------

No	Ask why?

	Thank and end the interview

Dear Interviewer

The reliability and validity of the study is based on accurate and genuine information interviewee's give to each of the questions. To this effect, I would kindly like to remind you to play your role by elaborating the questions, treating them with respect and recording the responses correctly.

- * Please also avoid deletions, mark clearly and keep the questionnaire clean
- * Remind them that all their responses will be kept confidentially

Date of interview:-Date _____ February, 2009.

Name of Interviewer _____

Supervised and cleared by _____

ID No			
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Part one: - Questions on Socio demographic characteristics

S. No	Questions	Alternatives	Skip to Question No
101	Area Administration		
102	Sex	1. Male 2. Female	
103	Age in completed years	Age: _____ years	
104	Ethnicity	1. Tigray 2. Erob 3. Amhara 4. Others _____	
105	Religion	1. Orthodox 2. Catholic 3. Protestant 4. Moslem 5. Traditional 6. Others _____	
106	Marital status	1. Never married 2. Currently married 3. Have steady sexual partner 4. Separated	

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		5. Divorced 6. Widowed	
107	Educational status	1. Illiterate 2. Read and write, no formal 3. Grades 1-8 level 4. Grades 9-10 level 5. TVET 6. Preparatory education 7. University/college diploma 8. University/college degree and above	
108	Are you currently engaged actively in academic fulfillments?	1. Yes 2. No	
109	What is your current occupation?	1. None 2. Student 3. Daily laborer 4. Government employed 5. Employed in private sector 6. Have a private sector _____ 7. Others _____	
110	What is your current monthly income?	1. None 2. _____ birr	
111	With whom are you living currently	1. With father & mother 2. With father only 3. With mother only 4. With relatives 5. being adopted 6. With friends 7. With boy/girl friend 8. As husband/Wife 9. Alone 10. Others _____	If "No" skip to question No 318
112	What is the educational level of your father?	1. Illiterate 2. Read and write, no formal 3. _____ last grade 4. Don't know	
113	What is the educational level of your Mother?	1. Illiterate 2. Read and write, no formal 3. education 4. _____ last grade 5. Don't know	
114	Is your Father's engaged in income earning activity?	1. Yes 2. No	
115	Is your Mother engaged in income earning activity?	1. Yes 2. No	

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116	How do you evaluate the income of your household?	<ol style="list-style-type: none"> 1. Enough 2. Average 3. Low 4. very low 	
117	How do you compare the income of your household compared to Neighborhood?	<ol style="list-style-type: none"> 1. Very High 2. High 3. Average 4. Low 5. Very Low 	
118	Are your father and mother living together, currently?	<ol style="list-style-type: none"> 1. Yes 2. No 	If "yes" skip to question go to part two
119	If not What is(was) the reason that your parents currently don't live together:	<ol style="list-style-type: none"> 1. Divorced 2. Separated 3. One of my parents is dead 4. Both of my parents are dead 5. I don't know 	

Part two: - Questions about Parental relationship, Peer influence and Youth religiosity

Sub section one:- Parental-youth relation ship			
201a	In sexual matters, have/had open communication with my parents.	<ol style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree 	
201b	In substance use matters(Khat smoking cigarette, drinking alcohol or other drugs) , I have/had open discussion with may parents	<ol style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree 	
201c	My parents usually opt to discuss and advice than physical force when I failed to fulfill their expectation?	<ol style="list-style-type: none"> 1. Strongly agree 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree 	
Subsection two :- Youth religiosity			
202a	In the past 6 months, on religious days how often did you attend church/mosque?	<ol style="list-style-type: none"> 1. All of the time 2. Most of the time 3. Sometimes 4. Rarely 5. Never 	
202b	In the past 12 months, on holy days of fasting, how often did you fast?	<ol style="list-style-type: none"> 1. All of the time 2. Most of the time 3. Sometimes 	

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		4. Rarely 5. Never	
202c	How often do you pray?	1. Daily 2. At least once a week 3. Sometimes 4. Rarely 5. Never	
Sub section three:- Peer pressure			
203a	Have you ever encountered pressure from your friends to have sexual intercourse?	1. Yes frequently 2. Yes occasionally 3. Very rarely or non at all	
203b	Have you ever encountered pressure from your friends to have khat or alcohol?	1. Yes frequently 2. Yes occasionally 3. Very rarely or none at all	
203c	Many of my friends drink alcohol(beer, alcohol or local drinks) Khat	1. Agree 2. Not sure 3. Disagree	

Part three –Questions regarding sexual behavior and practice

301	Did you ever have sex?	1.Yes 2.No	If “No” skip to question No 316
302	How old were you the first time you had sexual intercourse?	Age: _____ years	
303	Have you had sex in the past 6 months?	1. Yes 2. No	If “No” skip to question No 316
304	Please describe the nature of your relationship with your sex partner/s for the past 6 months? (<i>Multiple choice can apply</i>)	1. Spouse 2. Boy friend 3. Girl friend 4. CSW 5. Casual 6. Others, specify _____	
305	How often did you and/or your partner use modern contraceptive method in the past 6 months?	1. Always 2. Quite often 3. Sometimes 4. Rarely 5. 5. Never	
306	How often did you have sex with a casual sex partner in the past 6 months?	1. Once or twice 2. Rarely (a few times per year or less) 3. Sometimes (1-4 times a month) 4. Several times per week	

		5. Not sure 6. Others, specify _____	
307	How often did you and/or your casual sex partner use condom in the past months?	1. Always 2. Quite often 3. Sometimes 4. Rarely 5. Never	
308	Only for Males; Did you ever had sex with a CSW in the past 6 months?	1. Never 2. More than once 3. Frequently	If "No" skip to question No 316
309	Only for Males: How often did you have sex with CSW in the past 6 months?	1. Once or twice 2. Rarely (a few times per year or less) 3. Sometimes (1-4 times a month) 4. Several times per week	
310	Only for Males: How often did you and/or your CSW use condom in the past 6 months?	1. Never 2. Rarely 3. Sometimes 4. Quite often 5. Always	
311	Only for Females: Have you ever been pregnant?	1. Yes 2. No	If "No", go to question no316
312	Only for females; What was your age at your first pregnancy?	1. Yes 2. No	If "No", go to question no 316
313	Only for females: Did you have any unintended/ unplanned pregnancy?	1. Yes 2. No	If "No", go to question No 316
314	Only for females : Have you ever had an abortion?	1. Yes 2. No	
315	Have you had a sexually transmitted infection in the past 6 months?	1. Yes 2. No	
316	Sex out of wedlock is not morally wrong.	1. Strongly agree 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree	
317	Pre marital sex is acceptable behavior	1. Strongly agree 2. Agree 3. Not sure 4. Disagree 5. Strongly disagree	

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Part four Question regarding substance use behavior and practice

401	Do you chew Khat?	<ol style="list-style-type: none"> 1. Yes 2. No 	If "No", go to question No418
402	If yes, why do you chew?(Multiple choices apply)	<ol style="list-style-type: none"> 1. To pass the time 2. To stay awake 3. To socialize 4. I am addicted 5. other(Specify) 	
403	How long have you been chewing Khat?	<ol style="list-style-type: none"> 1. For Shorter than six months 2. b/n 6 months- 1 year 3. for 1-3 years 4. For longer than three years? 	
404	During the past 30 days, on how many days did you chew Khat?	<ol style="list-style-type: none"> 1. For 1-4 2. For 5-8 3. For 9-12 4. For 13-16 5. For 17-20 6. For > 21 days 	
405	On average on how many days do you usually chew Khat?	<ol style="list-style-type: none"> 1. Less than once per week. 2. Once per week 3. Greater than once per week but not every day 4. Every day through the week. 	
406	With whom do you chew Khat?	<ol style="list-style-type: none"> 1. Always alone 2. Usually Alone 3. Usually with others 4. Always with other 	
407	If you usually or always chew with others, what are their sex characteristics?	<ol style="list-style-type: none"> 1. Usually with opposite sex 2. Usually with both sex 3. Usually with same sex 	
408	What other substances do you use during Khat chewing?	<ol style="list-style-type: none"> 1. Smoke cigarette 2. Marriujana 3. "shisha 4. Other(specify) 	
409	Do you drink beer or alcohol drinks after chewing Khat?	<ol style="list-style-type: none"> 1. Yes 2. No 	If "No", go to question No418
410	How frequent do you drink after chewing Khat?	<ol style="list-style-type: none"> 1. Every time, after chewing chat 2. Most of the time, after chat 3. Some time, after chat 4. Never drink, after chat 	

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411	Do you feel sexually aroused either during or after chewing (in the same day)?	1. Yes 2. No	If "No", go to question No 418
412	If so what do you do in response to your sexual arousal?(multiple choice can apply)	1. I control it 2. I will call up on my girl/boy friend 3. I chase to any girl to have sex with me 4. I will have sex with CSW. 5. Other (Specify)	
413	Male respondents: what difficulties do you experience when you have sex or are about to have sex?	1. No problem 2. Lack of penis erection 3. pre-mature ejaculation 4. Anxiety 5. Delayed orgasm 6. Other (specify)	
414	Female respondents: what problems do you Experience during sexual intercourse?	1. No problem 2. Delayed 3. Orgasm 4. copious vaginal secretion 5. Other (specify)	
415	Male respondents: After chewing, do you engage in casual sex practices,	1. No 2. yes	If "No" go to question No 418
416	If yes, do you use a condom?	1. Never 2. Occasionally 3. Always	
417	How do you compare your sexual desire during/after chewing khat and in the absence of chewing khat?	1. I have more sexual desire when I have khat. 2. I have more sexual desire when I have not 3. It makes no difference 4. Other(Specify)	
418	Do you smoke cigarette?	1. Yes 2. No	If "No" go to question No 420
419	During the past month, about how many cigarettes or packs of cigarettes per day have you smoked?	1. None 2. 1 - 20 cigarettes 3. 20 - 60 cigarettes 4. More than 60 cigarettes 5. Don't remember	
420	Do you drink alcohol	1. Yes 2. No	If No skip to 429

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421	Why do you drink alcohol?(Multiple response is possible)	<ol style="list-style-type: none"> To pass the time To do away with my shyness problem. To fight depression To forget my problems To socialize I am addicted To release khat stimulation other(Specify) 	
422	On average How frequently do you drink beer or other alcohol?	<ol style="list-style-type: none"> Always (daily) Often (3-4 times per week) Occasionally (1-4 times per month) Rarely (on holydays) 	
423	What kind of alcohol do you usually drink	<ol style="list-style-type: none"> "Sewa", Mes.. local drinks Beer Heavy Alcohols drinks (Gin,whisky..) 	
424	For the past months ,on how many days did you have at least one drink of alcohol	<ol style="list-style-type: none"> Always (daily) Often (3-4 times per week) Occasionally (1-4 times per month) Rarely (on holydays) 	
425	For the past months ,on how many days did you have five or more drinks of alcohol in a row	<ol style="list-style-type: none"> Always (daily) Often (3-4 times per week) Occasionally (1-4 times per month) Rarely (on holydays) 	
426	Do you have sex after drinking alcohol?	<ol style="list-style-type: none"> Usually Occasional Rarely Not at all 	
427	Did you have casual sex after drinking?	<ol style="list-style-type: none"> Yes No 	If no skip to 429
428	If yes, do you use a condom?	<ol style="list-style-type: none"> Never Occasionally Always 	
429	Did you ever know people smoking marijuana	<ol style="list-style-type: none"> Yes No 	
430	Have you viewed pornographic materials in the last six months?	<ol style="list-style-type: none"> No Often (3-4 times per week) Occasionally (1-4 times per month) Rarely (once in months) 	

Thank you for your cooperation time.

To be filled by supervisor:

Comment

Supervised and cleared by _____

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FGD QUESTIONS

Open ended questions that are used as a guideline for FGD questions with youth who are between the age group 15-29 years

Instruction

Well come participants

Let participants discuss each other

State the possible timeframe for the discussion

State the purpose and objective of the discussion

Confirm the consent of participants and ask if they agree to be recorded by Tape

For all questions (except question number one) please emphasize on khat, alcohol and drugs like marijuana as practiced by age group 15-29)

Probe to each questions and record very well not only the verbal but also the group dynamics and nonverbal expressions.

1. How do you evaluate the situation of substance use in Mekele over time trend (Discuss one by one for khat, alcohol and other drugs?)
2. What does the situation look like among adolescents and youth?
3. Is substance use a concerning issue in our locality? Why?
4. What are the main factors for youths that forces (push & Pull) them to chew Khat?
5. Are there enough amenities and recreational services where by youths spend their time? What is the situation regarding this?(Make a detailed discussion)
6. What would be the problems and/or benefits of substance use? Why?
7. Can we identify any pattern of addiction to substances that describes our community?

8. What are the consequences of using substance as we observe from practical experiences?
9. Do you think substance use (especially khat and alcohol) influences the sexual behavior of users? Why/why not?
10. What are risky factors of substance users for having risky sexual behavior,
11. Can we say the users are problem to our society? How?
12. What kind of measures can/should be taken?
13. Any other views or so? Questions?

Thank you

In -depth interview with khat chewer

These are open ended questions that are used as a guideline for IDI questions with a young person who have a habit of chewing khat.

Instruction

Well come the respondent

Let participant introduce himself/herself

State the possible timeframe for the discussion

State the purpose and objective of the discussion

Confirm the consent of participants and ask if he/she agrees to be recorded by Tape

Ascertain employment status, age, educational level and marital status

Probe to each questions and record very well both the verbal and non verbal expressions.

General Questions

- ⇒ How do you usually spend the day?
- ⇒ Can you please describe me briefly what are the major actions you do in your day to day life?
- ⇒ How/why do you become to start chewing Khat
- ⇒ What was your first impression?
- ⇒ Do you use any other substances like smoking cigarette, alcohol or marijuana? Why?
- ⇒ How long have you been chewing khat?
- ⇒ How frequent do you chew khat?
- ⇒ What are the immediate reasons for chewing khat?
- ⇒ What other major reasons do you state for chewing khat?
- ⇒ Do you think chewing khat influences your social behaviors?
- ⇒ How do your parents and friends feel about your behavior?
- ⇒ What do you usually do after chewing khat?
- ⇒ Do you think it influences youth sexual behavior? How? Why?
- ⇒ Do you have a girl friend? If so what is her attitude for chewing khat?
- ⇒ What do you feel the positive effect you can state for chewing khat?
- ⇒ What negative effects do you experience from chewing khat?
- ⇒ With whom do you chew khat and why?

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- ⇒ Can you state any particular experiences that describe how your sexual behavior has been affected by chewing khat?
- ⇒ Do you aspire to stop it or keep going with such behavior (chewing Khat)? Why? How much do you think it is possible to stop or not
- ⇒ What is your response if your younger sibling (s) started to chew khat? Why?
- ⇒ Do you have any thing to add, comment or recommendation