ANALYSIS OF PREDISPOSING EXTRA-FAMILIILAL FACTORS FOR STUDENTS RISKY SEXUAL BEHAVIOR: The Case of Adigrat, Mekelle and Axum Universities.

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Abstract
Adolescents are at high risk for a number of negative health consequences associated with unplanned and unsafe sexual activity, including infection with human immunodeficiency virus, other sexually transmitted diseases and unintended pregnancy. The main aim of this study was to explore the main predisposing extra-familial factors that reinforce university students to engage in such behaviour. Using multi-stage stratified random sampling 150 university students were used as participants for the quantitative approach and FGDs and interviews were used for the qualitative part. As a result, this research has attempted to pinpoint the predisposing factors associated with the self, family and extra-familial systems. In this study about 150 participants were selected using multistep stratified random sampling technique for the quantitative part and 12 interviewees and 48 focus group discusants were included using purposive sampling technique for the qualitative part from the three universities found in Tigray. Besides, questionnaires for the quantitative approach and interview, FGD and observation for the qualitative one were used in order to collect the data. Therefore, both in the quantitative and qualitative analyses of this study found that fellow up from the family system and health education, peer influence from extra-familial system were found the most significant factors associated with university students risk sexual behaviour. Besides, sex, and university control were not found significant predictors. The result of this study was consistent and inconsistent with previous studies on the topic.

Key words: extra-familial system, risk behaviours, adolescents

CHAPTER ONE

1. Background

The World Health Organization (WHO) defines adolescent people as those between the ages of 10 to 19 years (UNICEF, 1997). Today’s adolescent and young adults constitute the largest cohort ever to enter the transition to adulthood. Evidence showed that nearly half of the global population was less than 25 years old and nearly 90% live in developing countries. About 1.7 billion people of the world’s population were between the ages of 10 and 24 (UNICEF, 1997). Most of the world’s youth are living in developing countries. Adolescence is a period characterized by immature exploration and experimentation behaviors of adolescents and subjection to peer influences.

When viewed from various behavioral, cognitive and developmental perspectives, young people can be labeled as the vulnerable group; because this segment of population is threatened by sexual and reproductive health problems. These days, most young people are exposed to risky behavioral practices in their teens. Moreover, negative behavioral practices during adolescence period predispose adolescents to sexual and reproductive health problems (Friedman LH, Edstron GK, 1983). Adolescents have been exposed to various sexual and reproductive health (SRH) problems because of their risky sexual behaviors without necessary precautions. Particularly these days, young people are highly suffering from the tragedy of HIV/AIDS. Millions of young people have been infected
with HIV and millions of them have died of it. Adolescent females have been jeopardized by the pandemic and other reproductive health risks such as unwanted teenage pregnancy, unsafe abortion-related complications, and dropout from schools (WHO, 2003, 20004, and 2005).

Quantitative and qualitative studies of the sexual knowledge and practices of adolescents reveal that a substantial number of boys and girls in many developing countries engage in sexual intercourse before their 15th birthdays (UNICEF, 1997). Early and unprotected sexual initiation can trigger a succession of harmful physical, emotional, and social outcomes, especially for girls (MOH, 2006). Moreover, compared with adults, adolescents are less likely to have the foresight, skills, cognitive maturity, information, and support they need to protect themselves from unwanted pregnancy, HIV, and sexually transmitted infections. In addition, the rising number of new HIV infections among these young demographic signals an urgent need to identify behavior and situations that contribute to sexual and reproductive health in adolescence (UNICEF, 1997).

In Ethiopia, over 65% of the population is under 25 years of age. Ethiopia is a nation whose youth have profound reproductive health needs and are disadvantaged in their access to sexual and reproductive health information and services. Gender inequality, sexual coercion, early sexual debut, unwanted/unplanned adolescent pregnancy, abortion, sexually transmitted infections and HIV/AIDS are the major sexual and reproductive health problems in Ethiopia. Different factors for sexual and reproductive health problems have been operating at individual, peer, and family and community level (Abubeker A, 2004).

Although Ethiopia has developed a national youth policy in 2004, yet much is expected to the provision of reproductive health care to university/college students (Abubeker A, 2004). Adequate systems such as, information education communications (IEC), appropriate guidance and counseling services are not yet rendered to deal with students’ sexual and reproductive health problems which might be due to paucity of research findings.

As stated by a study done in Ethiopia among in-school and out of school youth aged 15- 24 to describe the association between Khat chewing, alcohol consumption and risk sexual behavior, sexual initiation among in school youth of 15-19 was found to be 5.2%, one of the lowest figures recorded (Mesfin K, Hassen T. S, Ghimijha F, Teshome T, 1999). Numerous thesis works have also been produced investigating the sexual behavior of high school students in Addis Ababa and other towns. A thesis conducted among in school youth of Addis Ababa in 2002, came up with a proportion of 11.1% sexually active youth. 17.7% of these had more than one sexual partner and consistent use of condom was reported to be 58.7% (Fantahun M. Chala F., 1994).

A study on similar population conducted on Dessie preparatory schools, North Ethiopia, in 2004, reported a proportion of 25.8% sexually active youth. The mean age of sexual debut was 17+1.55 years. Out of these, 43.1% had history of sexual encounter with more than one partner and consistent use of condom was reported to be 44% (Sebsebe D, 1983).

In a cross sectional study conducted in Agaro, Ethiopia (2004), 25% of the in-school youth were claimed to be sexually experienced and the average age of sexual debut was 16.74 years. Fifty four percent of them used condom at least once and 46.9% reported using condom always (Mesfin Belew, Dereje Kebede, Mesfin Kassaye and Fikre Enquoselassie, 2000).

In another study conducted among Bale in-school youth, south east Ethiopia, in 2004, 30.8 % of the study participants (72.1% of males and 29.9% of the females) was sexually active and the mean age at first sexual
intercourse was 15.87 + 1.84 years. The main reason forwarded for sexual initiation was, personal desire. Forty eight percent of them had sexual encounter with multiple sexual partner. Majority, 58.1%, have never used condom during any sexual intercourse episode, while only 19.4% of them used consistently (Gebere S, 1990).

Similar study done among students of Ambo high school, Ethiopia, in 2006, claimed 19% of the study subjects had experienced sexual intercourse. The overall mean age at first sexual intercourse was 15.91 ± 1.8 years. The mean ages at first sexual intercourse for male and female respondents were 16.08±1.708 years and 15.66 ± 1.975 years, respectively. More than half, 56.4% claimed to have more than unisexual partner and only 27.6% reported consistent condom use (Gebere S, 1990).

1.2 statement of the problem

Sexual risk behaviors are defined as sexual activities that may expose an individual to the risk of sexually transmitted infections (STIs) including HIV and unplanned pregnancies. Some of these behaviors include unprotected sexual intercourse, multiple sexual partners, forced or coerced sexual intercourse and sexual intercourse for reward. However, lack of knowledge about consequences of these negative behaviors and poverty has been identified as factors that increase the chances of adolescents engaging in risky sexual behaviors. Adolescents face different challenges related to their sexuality which have an influence on their perception of the world and themselves. There has been increasing public health concern about the reducing age of initiation of adolescents into sexual activities. The rate of risky sexual behaviors and the spread of STIs continue to be on the increase due to many factors including dearth of information regarding adolescent sexuality (UNICEF, 1997). Each year, approximately one million young women aged 15-19 become pregnant; the vast majority of these pregnancies are unplanned (EMOH 2006). Abstaining completely from sexual activity will eliminate these risks and where abstinence is not a reasonable choice or goal, preventive measures are imperative (Friedman LH, Edstron GK, 1983). The observed that unsafe sex was second among the top ten risk factors in the world burden of all diseases globally. Fifty to seventy five percent of first teenage pregnancies, in Sub-Saharan Africa are unwanted and unplanned, while 25-57.5% of induced abortions in Ethiopia occur among young women aged 15-20 years (Ministry of Health, 2002).

Even though this is fact about Ethiopia and its youth population, this problem is not only under researched topic but also full of confusions. According to some studies, Sexual risk behavior, like many other problematic behaviors of youth, has been studied for quite some time in general and third world countries in particular (see B.A. Kotchicketal. 496 Evans, & Edmundson, 1997). Therefore, this study was aimed to systematically explore the main factors that increase university students risk sexual behaviors which in turn precipitate their sexual and reproductive health problems. Based on the statement of the study this research will answer the following research questions:

1. What are the main extra-familial factors that associate with students’ risky sexual behaviors?
2. Which factor/factors significantly contribute to students’ risky sexual behaviors?
3. Which sex group is significantly vulnerable to sexual risky behavior?

1-3. Objectives of the Study

The general objective of the study is to investigate factors that affect university students’ risky sexual behaviors.

Specific objectives

More specifically the study is intended to answer the following specific objectives:
To assess the main factors that affect university students’ risky sexual behaviors.
To investigate the factor/factors significantly contribute to students’ risky sexual behaviors?
To explore which sex group is significantly vulnerable for risk sexual behavior.

1.4. Significance of the study

The findings of this study is going to be distributed to the beneficiaries through print and digital media and then it will help teenagers, primary care givers and educators about the risks and consequences of involving in risky sexual behaviors at a younger age. It would also contribute to existing knowledge and enhance the development of strategies that will positively influence the attitudes of adolescents regarding sex related matters. Furthermore, this study would sensitize everyone including families, educators, communities, health care professional especially nurses and policy makers. Such sensitization would invariably help to empower adolescents on sexual issues and reduce their risk taking behaviors.

Dissemination of the Results
The finding report will be submitted to Adigrat University the funding agent. As deemed necessary, it will also be communicated in scientific conferences and will be sent for publication to a relevant scientific journal.

Chapter two

Literature review

This review examines adolescents’ sexual risk behavior and its associated risks factors that influence their sexual risk-taking behaviors. The overarching purpose of this review is to present the available research within a conceptual frame work that is called a multi-systemic perspective. Thus, the specific goals of this review are the following: First, to present an overview of sexual activity and risky sexual practices among Ethiopian university students. Second, it offers a multi-systemic conceptual model that organizes the available findings in to a useful framework for both understanding and preventing adolescent risk behavior. Third, it summarizes findings on the factors associated with sexual risk behavior from recent research in the world.

Factors associated with youth sexual activity

According to a literature review of one study, different studies have shown gender (sex), early puberty, substance use, low parental education, parental absence, self-esteem, grade, perceived peer sexual norms, and cultural and family patterns of early sexual activity to be some of the predictors of youth sexual activity (Fekadu Z, 2001).

In a study done in Ethiopia, among in-school and out of school youth aged 15-24, to describe the association between Khat chewing, alcohol consumption and risk sexual behavior over 90% of the in-school youth did not use Khat or alcohol and only 7.5% of them used Khat every day or once weekly. Khat use was strongly associated with initiation of sexual activity with four fold increased odds in both daily and weekly users while alcohol use was strongly and linearly associated with initiation of sexual activity by four fold (Yazachew M., 2003).
A number of qualitative studies done among in and out of school youth in Ethiopia have also revealed a close link between alcohol consumption and *Khat* use with sexual activity among the youth (Seifu A. 2001, Abate S. 2001). As one youth based study describes, *Khat* chewing and alcohol consumption often in combination provide a fertile environment for the execution of pre-contemplated ideas on sex (Seifu A. 2001).

**CONCEPTUAL FRAMEWORK**

Socio demographic factors, source and adequacy of information on sexual activity, behavioral and environmental factors are assumed to have a direct link with sexual behavior or they can predispose to frequent exposure to sexually explicit materials which may further be linked with sexual behavior. Frequent exposure to sexually explicit material by itself can be linked with sexual behavior bi-directionally. In order to manage and focus up on the main factors from the infinite risk sexual factors, the researchers adopt the condensed multi systemic factors model from the work of Beth A. Kotchick, Anne Shaffer, and Rex Forehand, University of Georgia.

![Diagram of Multi-systemic Perspective on Adolescent Sexual Risk Behavior](image)

**FIGURE 2. A Multi-systemic Perspective on Adolescent Sexual Risk Behavior**

**LITERATURE REVIEW ABOUT MULTI-SYSTEMIC FACTORS**

This review examines the literature on adolescent sexual risk behavior from a Multi systemic perspective. According to this perspective, an accurate and comprehensive understanding of adolescent sexual risk behavior must necessarily include some knowledge of both the personal and the environmental factors which may contribute to the decision to become sexually active and, subsequently, the decision to engage in risk-promoting sexual behaviors.

Here the attention is on three systems of influence believed to be primary Contributors to adolescent sexual risk behavior: the self, family, and extra familial systems. Although it is acknowledged that higher order systems, such as cultural, economic, or societal systems, may also exert influence on behavior, researchers
believe the impact of such Macro systems permeates through micro-level systems, such as the self, family, and extra familial systems, to affect behavior (Bronfenbrenner, 1979).

A multi systemic perspective would suggest that the relations among these systems are transactional and interactional, with each system exerting both direct and indirect effects on behavior. It is assumed that systems interact with each other, such that risks or resources from one serve to either potentiate or buffer against the effects of others, and that each system influences other systems as well as behavior itself. In this sense, one system may serve as a partial or full mediator of the effects of other systems or factors within other systems on behavior.

This review is intended to serve as a "jumping-off" point for systematic research that may support or disconfirm these theoretical hypotheses. The following literature review will present a summary of the correlates of adolescent sexual risk behavior within the self, familial, and extra-familial systems.

1. The Self-system
The self-system refers to a constellation of factors, including qualities, skills, knowledge, attitudes, and behaviors, that belong to an individual person and which have either a direct or indirect influence on his/her own behavior. For the purpose of this review, the self-system variables will be divided into biological, psychological, and behavioral correlates of sexual risk practices.

1.1 Biological factors
In this study, the term biological factors to refer to physical characteristics with which adolescents are born and that are not modifiable by environmental forces.

Adolescent age, pubertal development, and gender, race are self-system variables that have been shown correlated to adolescent sexual risk behavior. Not surprisingly, older adolescents report more sexual activity and having more partners than do younger teens (e.g. Harvey & Spigner, 1995; Sonenstein et al., 1991). But how does age relate to sexual risk behaviors, such as inconsistent condom use? Some groups of researchers found that older age was associated with less consistent condom use in both minority and mixed race samples (Anderson et al., 1990). A fifth study found that older females were more likely than younger females to use some form of birth control consistently.

Adolescents who report higher levels of religiosity are less likely to engage in sexual intercourse (Bingham & Crockett, 1996; Crockett, Bingham, Chopak, & Vicary, 1996). However, religiosity has not been found to reliably predict sexual risk behavior. Jemmott and Jemmott (1992) found that inner city Black male adolescents who score higher on a measure of religiosity were more likely to use a condom during sex than their less religious peers, but the relationship was of only marginal significance once family structure, SES, and age were considered. Likewise, religiosity was inversely related to sexual risk behavior in a large survey sample of adolescents in Minnesota; however, the standardized regression coefficient was very small and accounted for very little of the variance in the dependent variable (Neumark-Sztainer, Story, French, & Resnick, 1997).

Adolescents' knowledge about sexual risk-taking and its association with negative health outcomes, such as HIV infection or pregnancy, has received considerable attention as a predictor of sexual risk behavior.
However, there does not appear to be a clear association between knowledge of sexuality or HIV/AIDS risk factors and adolescent sexual risk-taking practices. Some previous researchers found that more knowledge about sexual risk practices and prevention was significantly associated with either more consistent condom use, contraception use in general or fewer sexual partners (Zimet et al., 1992).

1.2 Behavioral factors

Sexual risk-taking behaviors are correlated with a number of other behaviors, including delinquency, substance use, and other indices of sexual activity in general. Problem behavior theory (e.g., Jessor & Jessor, 1977; Jessore et al. 1995) suggests that sexual risk behavior would co-occur with other problem behaviors, such as delinquent activities or substance use, during adolescence. Similarly, fighting and other measures of delinquency (e.g. school suspension or expulsion, drug use) emerged as significant predictors of rapid repeated pregnancies among a sample of adolescent mothers (Gillmore, Lewis, Lohr, Spencer, & White, 1997).

A number of other studies have documented the relationship between substance use and sexual risk practices. The national Youth Risk Behavior Survey data indicate that high-risk sexual behaviors (e.g., multiple sexual partners, no condom use at last inter course) were most prevalent among adolescents who had used illicit substances during the past year (Lowry et al., 1994). Others have found that a history of alcohol and/or drug use correlated within consistent condom use (Brown et al., 1992; Cooper et al., 1994; Fullilove et al., 1993) and having multiple sexual partners (Devine et al., 1993). Use of alcohol or drugs immediately prior to or during sexual encounters is also related to decreased condom use (Bagnall, Plant, & Warwick, 1990). Similarly, adolescents who reported a high frequency of combining alcohol consumption and sexual behavior were seven times less likely to use a condom (Bagnall et al., 1990).

In a longitudinal study employing latent growth curve modeling, Duncan et al. (1999) found strong support for Problem Behavior Theory, as the development of three types of substance use (alcohol, cigarettes, and other drugs) covaried with the development of risky sexual behaviors. In addition, in a study of female adolescents with and without substance abuse disorders, Mezzich et al. (1997) found not only that substance use problems and risky sexual behavior are strongly related, but that they share many of the same risk factors (e.g. behavioral dysregulation, childhood victimization).

In summary, a number of factors from the self-system that have been found to relate to an adolescent's sexual status have also been associated with adolescent sexual risk behavior. However, the findings are not consistent for some variables commonly believed to have an influence on adolescent sexual behavior. Most notably, the relation between adolescent sexual risk behavior and knowledge about sexual risk factors and perceived personal vulnerability to undesirable outcomes of sexual activity are not well understood. More research is needed to examine the role of self-esteem, self-efficacy, and general psychological health in the promotion of safer sex practices.

The Family System

Familial influences on adolescent sexual activity can be divided into two primary categories: family structure variables and family process variables.
There is evidence that structural factors, such as single parenting, SES, and Parental education, should not be ignored. For example, Baumeister et al. (1995) examined familial characteristics of Latina adolescents in two groups, one never pregnant and another pregnant or parenting, and found that living with an intact family (i.e., parents married or living with a partner) significantly discriminated between the two groups. Additionally, Devine et al. (1993) found that parental divorce during early adolescence was a significant predictor of sexual risk behavior for females in later adolescence. Other family structure variables, such as SES, may be related to adolescent sexual risk behavior. In one study of urban adolescents, living in poverty, especially when combined with low academic skills, was related to early pregnancy (Gordon, 1996). Roosa et al. (1997) found similar associations between SES and risk for teenage pregnancy. Studies such as these would suggest that family structural variables warrant greater attention in sexual risk behavior research with adolescents. In terms of family processes, parenting behavior has been identified as an important source of influence on adolescent sexual activity. Throughout the socialization process, parents transmit their own standards of conduct, both directly through their parenting practices and indirectly through their own observable behavior. In regard to the direct transmission route, three dimensions of parenting parental monitoring of adolescent behavior, parent-adolescent relationship quality, and parent-adolescent communication-have been identified as important variables in reducing adolescent sexual risk-taking behavior.

Parental monitoring or supervision of adolescents' social activities has been consistently associated with less frequent sexual behavior. While frequency of sexual activity is not, by itself, among the behaviors considered to be risky in this review, less frequent sexual activity would certainly decrease an adolescent's risk for negative sexual outcomes. Parental support and involvement has also been shown to be indirectly related to decrease sexual risk behaviors, as noted by Metzler et al. (1994), who included perceived parental support in their model of the social context of sexual risk-taking, alongside other family variables, peer influences; academic factors and academic competence in early adolescence are inversely related to risk sexual practices.

The Extra familial System

For adolescents who are in the midst of developing their own identities and establishing more complex social networks, the point of reference by which they guide their behavior shifts from the family to the social environment (Forehand & Wierson, 1993). Of the three systems targeted by this review, the extra-familial system is the broadest in environmental scope. Unfortunately, it is also the system that has received the least empirical attention in the literature on adolescent sexual risk taking tendencies. As a result, distinct subsystems, such as peers, neighborhoods, and school conditions, have been subsumed under the label of the extra-familial system, though one could argue that each is its own unique system of influence.

Peers become an important source of reinforcement, modeling, and support Concerning value and belief systems during adolescence (Forehand & Wierson, 1993). Thus, it is not surprising that peers' behaviors and attitudes have been found correlated to adolescent sexual risk behavior, especially in light of the findings that adolescents whose peers are sexually active are more likely to be sexually active themselves (e.g., Miller et al., 2000; Romer et al., 1994). Additionally, indicators of sexual risk-taking behavior among adolescents' peer groups (e.g., pregnancy, inconsistent condom use) have been shown to relate to increased
adolescent sexual risk (Gillmore, Lewis, et al., 1997; Millstein & Moscicki, 1995). More subjectively, adolescents’ perceptions of their peers' behaviors have also been found to relate to sexual risk-taking, as several researchers have found that consistent condom use is associated with the perception of condom use among friends (Brown et al., 1992; Romer et al., 1994; Stanton et al., 1994). A similar study by Pendergrast et al. (1992) found that consistent condom use was correlated with a sexual partner’s positive attitudes toward condom use. Beyond peer's sexual behavior, the behavior of a peer group in general is often related to adolescent sexual risk behavior.

On the broadest level of the extrafamilial system, the neighborhood or community in which the adolescent lives also serves to influence the types of risk behaviors in which he or she may be involved. The community provides myriad levels of social support, through schools, jobs, social contacts, and other resources.

An important aspect of an adolescent's social community is the school environment. School factors, however, have not been extensively examined in the adolescent sexual risk literature. While some studies, reviewed above in the self-system, have found associations between personal academic aspirations and sexual risk behavior, no studies identified in this review have examined school climate in general as it pertains to sexual risk-taking behaviors. One study by Pendergrast et al. (1992) has noted that increased exposure to sexual education in the schools, particularly on the avoidance of sexually transmitted diseases, is related to increased condom use. Further, research is needed to investigate the potential effects of the school environment on adolescent sexual behavior.

In summary, the extra-familial system in general is in need of greater research attention with respect to adolescent sexual risk behavior for two primary reasons. First, as noted above, adolescence is a period of development characterized by the increasing influence of factors outside the family. Therefore, these influences deserve more attention, so that we may better understand the factors involved in adolescent sexual risk behavior. Secondly, of the three systems, the extra-familial system is the broadest in scope, as it encompasses the larger social context in which adolescents operate. Arguably, this broad context can serve to interact with, augment, or attenuate the influence of variables in the self or family systems, and for this reason must be included for consideration in all aspects of adolescent sexual behavior, particularly a sweat tempt to discover factors that increase or decrease adolescent sexual risk, and ultimately implement methods of preventing such risk.

Chapter three

Methodology

3.1. Research design

Based on the specific objectives and the nature of the research questions of the study required, this study used both qualitative and quantitative approaches. The design of this exploratory and explanatory research is a cross-sectional for quantitative one because this design allows for the identification of variables related to risky taking sexual behavior (see Devine et al., 1993). Multiple case study design was used for qualitative approach for it allows see things from the participants’ perspective about the phenomena.
3.2. Population
The research population of this study were more than 50,000 students of Adigrat, Mekelle and Axum universities. They are the only three Ethiopian federal higher institutions found in Tigray where the researchers were acquainted with and living in which in turn helped them to access the participants easily.

3.2.1. Exclusion Criteria
The following categories of participants were excluded from the study for convenience sake.
- non regular students of any of those three universities like extension, distance, summer etc.
- students who are not Ethiopians like those from Eritrea, Somalia etc.
- any post graduate students of those universities
- those who are not able to complete the questionnaire without assistance such as the visually impaired

3.2.2. Inclusion criteria
- Ethiopians who are in the first degree regular enrolment in those three universities
- students who are following their education in the studied year (2015/16 G.C)

Note: for the sake of convenience and clarity from this part onwards the researchers tried to treat the quantitative and qualitative parts separately.

3.3 For the quantitative part

3.3.1. Sample and sample size
The sample size for this study was a total of 150 participants from the three universities and at about 50 (25 females and 25 males) participants from each university disproportionally were taken for two major reasons i.e. first, the population was homogenous and second, the universities had almost equivalent number of regular undergraduate students. As far as the size of the sample is considered, it was done based on two major rules of thumbs. Green (1991) makes two rules of thumb for the minimum acceptable sample size, the first based on whether you want to test the overall fit of your regression model (i.e. test the $R^2$), possible to use the formula $50 + 8k(50+(8*15)=170)$, where $k$ is the number of predictors, and the second based on whether you want to test the individual predictors within the model (i.e. test $b$-values of the model), then he suggests a minimum sample size of $104 + k (104+15=119)$. This study wanted to test both then the average of their sum, around 145 was taken.

3.3.2. Sampling procedure and sampling techniques
For the quantitative part; participants were selected using multi stage stratified random sampling technique. The multi stage stratification variables, top to bottom, were university, campus, college, department, batch and then gender. Initially, using simple random sampling method, one campus from each university, 2 colleges from each campus and then 2 departments from each selected were selected. Finally, participants were selected from the two the departments in each university (Law and accounting) based on simple random sampling technique. Accordingly, at about 75 males and 75 females were included in the study as sampled participants.

3.3.3. Data collection instrument and procedure
Researchers of the present study, initially developed the survey questionnaire in English based on the main ideas of the formerly collected qualitative data of this study and the literature review of previous works on the topic and then translated it into Amharic, the working language of Ethiopia. Besides, to maintain the “content and spirit” of every original item another translator back-translated the questionnaire. Some necessary modifications were made based upon comments from peer reviewers who checked the face and content validity of the instrument. Before the main
data were collected, to check the reliability of the instruments a pilot study was conducted on students of Mekelle university Ayder campus who were the non-participants of the main study and it was found with crombach alpha .68 reliability.

As far as the data collection procedure is considered, it was in line with the research ethical and legal principles of different universal research institutions. One week in advance of the day designated for data collection, the researcher communicated and decided the data collection date with the department heads of the selected departments of each university. The issue of confidentiality was ensured by removing all personal identifiers from the questionnaire. Regarding the informed consent issue, during the data collection day, participants were asked their informed consent and given the chance to refuse or to discontinue participation at any time. After getting their agreement, the researcher was available throughout the administration of the questionnaires to clear any confusion just in case.

3.3.4. **Data analyses technique**
Data including participants’ personal information and responses on the variables will be analyzed using the computer statistics program entitled **Statistical Package for the Social Sciences** (SSPS version 20). **Descriptive statistics** (frequencies and percentages), mean comparison of the discrete predictors, partial correlation, **multiple regression**, and **Analysis of Variance** (ANOVA) were computed to answer the above research questions.

3.3.5. **Variables of the study**: the predictor and outcome variables were selected based on the previous researches and the emphases given to them in the qualitative data collection by participants.

**Criterion variables**
Risky sexual behavior; mainly resulted in unwanted pregnancy, inconsistent use of condom, experience of STI, commercial sex, casual sex and multi sexual partner.

**Predictor variables**
- **self-system**: age, sex, watching pornography, age at first sex, substance and alcohol use, academic performance, and religiosity.
- **Familial system**: family economic status, parent involvement and parent educational level
- **extra-familial system**: peer influence, university controlling systems, availability of youth programs (leisure activities, counseling services, and health education services) in these university.

3.4. **For the qualitative part**
3.4.1. **Sample and sampling techniques**
For the qualitative part; using purposive sampling technique, an intensive semi structured interviews were conducted with the university’s clinic head and head of proctors as well as a female and male students from each university. Besides, some voluntary night club managers and waitresses were interviewed. On top of that two students’ sex disaggregated focus group discussion, each consisted eight members, were conducted in each university. All the six FGD were run by the facilitators aided with notes and tape recorders. The interview and focus group guiding questions/points were developed by the researchers based on the reviewed literatures. Point of idea saturation was the assurance to end the in-depth interview and focus group discussion. Moreover, as the topic is too sensitive and socially desirable, both participant and non-participant observation were used as the main data collection tool. It was the researchers themselves made redundant participant observation in the three cities where the universities are named after and located.
3.4.2. Method of Data Analysis
The qualitative data were analyzed after the analysis of quantitative data. Data were transcribed into an English text by replaying the recorded interviews and discussions. Concepts were merged in their thematic areas and a manual thematic framework analysis was employed. The results were summarized and presented in narrative forms.

Chapter four
Results

This chapter discussed both the qualitative and quantitative findings one after the other for the three dimensions of risk sexual behavior predisposing factors and then cross-tabulated the results of the two approaches.

4.1. Qualitative Findings
Six FGDs were conducted among the purposely chosen two sex disaggregated groups from each university. Each group consisted of eight members and the discussion was tape recorded and led by the researcher for the male group and a female instructor for the females’ group from the respective university. Besides, in-depth interviews were conducted with purposely selected bodies like the head of the university clinics, head of proctors, female and male students from each university. Furthermore, a more impressive and valuable information has gathered from the participant observation. Those qualitative data were conducted to augment the quantitative study and to identify the main risky factors related to risk sexual behavior the participants’ points of views.

4.1.1. Result from the qualitative data about Prevalence of Risky behaviors among out of school youth

Almost all of the qualitative data sources undoubtedly witnessed the rampant prevalence of youth risk sexual practices. Besides, they also witnessed that it is increased in a very alarming rate from time to time. Especially, the participants of the in-depth interview from the clinic area highlighted STIs and abortions were very common like above 30 up to 50 cases of abortions per a month and occurrence of STIs were a usual phenomenon. Even though, rejected by the counter female participants, the males in the FGD discussed that it is becoming common, especially for females, to have more than one sexual partner for different “purposes” like for money, enjoyment etc.

Males who need to have girlfriend are forced to accept an agreement to share her with others when she found it necessary. In support of this idea he mentioned that there is a demarcation between the campus and the town from which the campus boyfriend and the outside partner could possess her freely. This means, he continued, the one could not even complain whatever things are happening out of his territory in relation to the girl. (One male participant said)

It was explained that there were some females who are working as waitresses in night clubs and khat houses” (a place where youths chew Khat and smoke shisha). In line with this argument, the researchers observed that one known night club at mekelle where all waitresses were university students. The interview informants claim that male students are committing sex with bar ladies and commercial sex workers. They also added that it was common to most of female students to be non-café and to have rented house out of the campus. According to their explanation the sources of the money are sugar dads and commercial sex. Even the female FGD discussants witnessed that females are victims of the risky sexual practice for natural and cultural reasons. One dominant female from the interview said that most of female students have at least one “ande sewye” in our terms which means sugar daddy. Some participants added that homosexuality and group sex are also becoming common practices.
4.1.3. Results of qualitative data on the self-system factors for risk sexual behavior

Most of the participants from both male and female members of the FGD discussion and interviews were almost agreed on the inevitability and dramatic increment of students’ involvement on sexual risk behaviors. Regarding to the self-system variables age, poor academic performance and substance and alcohol use were clearly pinpointed as the main contributing factors in the focus group discussions and the interviews.

In line with the participant observations, most focus group discussion and in-depth interview participants agreed that the key predisposing risk factor putting students at increased risk of sexual behavior was the ever increasing number of “khat bet” and local drinking houses around the universities and youth preference to visit these places more regularly. Chewing khat, along with its complimentary drugs like cigarette and shisha, is always followed by the so called “mirqena” which is a highness in feeling which later caused sleeping sickness (insomnia) and emotional disturbance. To lower those aftermath consequences, most of them thought that either have to drink alcohol or have sexual intercourse soon after. And then most students tended to visit “tella bet” and “Tejji/Tella bets” to drink local alcoholic drinks and then to night clubs. This is a trend traditionally called “mesberia” or “chebsi” which means breaking the effect of the substances. It was also reported that everything which is talked in these “khat bet” is about sex and enjoyment likewise in the night clubs everything, the music, the dancing styles, dressing styles etc are sexually tempting and deceptive.

One of the interviewee from the night clubs manager said

*it is unbelievable to see a university student doing such low rate practice, I think the main reason behind such behavior is the expansion of khat and shisha houses and followed by alcohol consumption. If they do drug and consume alcohol, they become crazy and lose their self-control.*

Most of the interviewees were agreed on the great impact of globalization and its negative consequences like the easy accessibility and availability of sexually explicit materials and videos. According to their belief, most of the students, particularly males, are having pornography movies in their smartphones and becoming addict of it. They also said Facebook is becoming the instrumental medium of introduction.

*I know a drama like incident about one of our university’s female student whose elder brother created a pseudo Facebook account with false profile and became a Facebook friend with his sister and exchanged their cellphone numbers. And then after a short period of fake talks over the phone, he appointed her to one of the famous hotels by telling her the bedroom number where he could wait and then she went and met her older brother. This was once big NEWS all over the campus (a female FGD participant said)*

Furthermore, the non-student interviewees mentioned on top of the luxury seeking tendency of the youths and their poor academic background their poor concern for and low performance in education was adding a fuel to the age related high sexual urge. In my observation at our town, the participant observer noticed that most of the night club regular Saturday night attendants were poor performing students. Besides, in the FGD discussion the students themselves even witnessed that most of such students were from the lower academic achievement students. It was the stress resulted from such desperation forced most of them to such type of practice.

“I have many peers who chew khat and their reason for doing this is that they want to forget what ever problem they encounter like stress and tension arising from hopeless due to their poor performance at school” (A male participant expressed)
Moreover, some of the participants suggested a lot of predisposing factors from the self-system dimension such as, students’ low self-confidence, low self-esteem; inter peer competition, their level of moral development, their materialist orientation etcetera. Moreover, few FGD participants over stressed on the power of place of residences, lack of clear vision, students low level of self-esteem, their attitude towards western culture.

In general, the most emphasized constructs mentioned by most of the qualitative participants were students’ age, their poor academic performance, and their substance addiction, the misuse of technology and easy accessibility of sex videos. Besides, students distance and negative attitude to religion and cultural issues.

4.1.4. Result of the qualitative data about Family related predisposing factors

Majority of the discussants without exception claimed that parents didn’t discuss sexuality issues openly with their children. Except few educated families majority think that it is not good to discuss sex related issues openly with children. They even did everything hidden. Some of the reasons forwarded by the participants why parents didn’t want to discuss these issues openly were: It is considered as a taboo topic and culturally unacceptable and Parents even consider it as remembering their children about sex and they fear that it will induce early sexual practices. Some of the participants who were young expressed that their current risky sexual behaviors would have been changed if their families had informed them everything openly like what sex means, when to be done, with whom to do it, how to do it etc.

More than half of the two sex disaggregated focus group discussion participants in each university emphasized the importance of parental involvement, supervision and open communication throughout the child’s life in general and in university in particular. Even what the adult interviewees capitalized on was the complete freedom that university students enjoy as a mother of all the other risk factors. They said if parents want to save their children from risky sexual behavior, they should have a mechanism to know their sons’ and daughters’ academic and behavioral conditions.

Together with the high peer pressure, lack of parental involvement accounts a significant share for university students’ misbehavior. Parents in Ethiopia are not even aware of what life in university looks like. Some students who are academically dismissed are coming back when entry call is made by their university as their parents are equipped them with necessary materials.

I know one ex-engineering female student who was dismissed three years ago but still acts to her parent as if she is about to graduate in the coming two years. They are also sending her a good deal of money in every month (a young female student explained).

The majority of the qualitative data informants pointed out that peer pressure is the most significant risk factor. As university is the place where communal life is mandatory, almost no one wants to suffer from the consequences peer rejection and mocking. Likewise, the researchers observe how much they are influencing and being influenced each other. For instance, the researcher personally knows a drug addict student for about four years. When he was first year student, he was doing things alone but now he influenced many of his class mates and made them drug addict.

I was virgin and clever student before my university life. When I come here, I introduced with one girl and became dorm mates. We were nice to each other; especially she had been supporting me financially which I was shorthanded for. I was thankful and grateful for it. However, I was suspicious enough about her financial source because she once told me that she is from the poor family. One night I asked her about it and she took me down town and introduced me with two middle adult males and then they bought us a dinner and invited us a bottle of wine. I resisted not drinking but she pressurized me and I started drinking soon after I got drunk. Without knowing
where and whom with the next day morning I found myself at bedroom with the person I didn’t see before and after that moment. Since then my life was spoiled and got dismissed from university as a result of that frustration and desperation. Now I am here in this town where my life transferred from bad to worse being waitresses at night club the job which I used to hate.

In nutshell, participants condemned those parents who are sending too much and too less amount of money. Both extreme amounts are pushing adolescents to unwanted behaviors. The victims of the sexual risk practices are either those from rich family because they have the money or students from poor family because they have nothing to cover their basic necessities like modes, soap, pen etc. what the focus group discussion participants appreciated about was the financial help the some universities are providing for poor students. They said even though it is small money, it is saving much life from unnecessary risks. Therefore, according to their deduction parental economic status has a good deal of correlation with students’ appropriate or inappropriate behaviors.

“Today’s parents have to be blamed for the way they managed their offspring’s rearing practice. Most parents are becoming lenient and sluggish. Parents changed their attention to the economical need of the child by forgetting the moral, educational, social needs. (An old informant strongly states)

In addition to above main ones, the interview participants mentioned family educational status, parental divorce, family size, family modeling, parenting style and so on as significant predisposing factors. According to the participants’ recommendation family structures and family processes should be given a due consideration.

4.1.4. Result from focus group discussions and in-depth interviews on extra-familial factors

All of the participants in the focus group discussion as a whole agreed that there were no adequate and attractive places in the universities for students to pass their spare time safely. Despite this, even though there were some recreational means in some of the universities, they are not modern, sufficient, and costly. Furthermore, some of them were not even user friendly to majority of students, particularly for the poor and from rural areas. Those participants added that they couldn’t get even hot drinks because most of the lounges available in the campuses were poor in quality and quantity but costly. As per their information, even the TV rooms were most of the time closed, non-functional and owned by the proctors. In those where there were functional TVs; the rooms, the seats, the sanitation and everything about it is not attractive as well as protectors or block masters managed the programs in their own favorite and interest. Those were the reason why majority of the participants without exception reported that the primary places usually preferred by most youth especially by males were “khat bet” followed by “tella bet.” It was stressfully mentioned that sport materials and areas were almost non-existent in the universities. This has been reported as a factor that leads most youth to shift their mind to “khat bet” and “tella bet”. The khat bets and bars are increasing dramatically and their availability is becoming easier more than ever before.

Majority of the study participants expressed that sex education and sexual health services are completely forgotten area. The existing clinics and their experts were not even cable of treating and educating others. To some extent, the students appreciated services provided by nongovernmental health institutions especially the Family Guidance Association of Ethiopia and Marie-stopes. They were grateful and extended their gratitude to the individual efforts of some instructors and some old moms working round the café and dormitories. The existence of peer to peer education and information clubs were almost few otherwise none. The lack of knowledge and awareness about the topic under discussion was taking the lion share of all the other factors.

The interview participants explained that information passed by media were not only poor in quality but also inadequate. They expressed that the way most programs passed were unattractive, repetitive, and their information
was not age specific rather common to all viewers and listeners. The media was again blamed for its trustworthiness and its inclination to politics. Besides, Ethiopian media was business oriented for example the coverage given for advertisements could be typical evidence. In a one hour program 30 minutes advertisements. The participants condemned the private Media for their emphasis on sex provoking programs and western culture orientation. In agreement to this idea, the interviewees stated that everything about the private media is opposition, westernization (western music, western movies, western development, western sport, western politics, western heroes etc) and undermining Ethiopian development and democracy.

“The private Medias are, in short to me, western Medias in Ethiopian land” (An old male participant explained)

The other major factor mentioned by participants was universities’ poor controlling system. According to their view, the mechanisms used by the universities to control students from such risk factors were not only poor and disorganized but also mechanistic which didn’t depend on mutual understanding of the stakeholders. For instance, “The attendance taking system was good but it was not consistent and not supported by advises for those who miss the attendance. And it was completely dependent on the person who took it”. (A female participant discussed)

In general, informants of the qualitative data added some contributing factors like the school environment, teachers’ dedication and modeling, the handout oriented teaching-learning condition, less controlling for cheating, etcetera.

4.2. The quantitative findings

This part presents the quantitative analysis of the selected and dominant predisposing factors from the three systems. The selection of the following fifteen predictors was based their dominance from the qualitative result and their predictive value on previous studies.

4.2.1. Results of the quantitate analyses on self-system factors

This part included the ANOVA and multiple regression analyses of the self-system predisposing factors for adolescents’ risky sexual behaviours. Among the main family related factors investigated in this study were first sex when, sex of the respondent, university stay, religiosity, watch pornography, substance use, academic performance. They were selected based up on previous works and the dominant themes of the qualitative part of this study.

4.2.1.1. Demographic characteristics

Among the total 155 respondents, 150 responded to the questionnaire correctly which makes the response rate 96.77%. From the study participants, 75 (50%) were males and 75 (50%) were females. The researcher took 50 participants from each university disproportionally. For every detail about the demographic characteristics of the respondents see table one below. As it is clearly stipulated in the table1 below, most of the respondents were first year, from the poor family background, illiterate parents, lower academic performance and not connected to religion.

The following table shows that the mean differences observed on risk sexual behavior scale among the levels/categories of the pure categorical predisposing factors. The main purpose of mean comparison was to compare and contrast the within mean differences in each nominal scale variables and the magnitude of their differences.

Besides, such type of mean comparison helps to get rid of the confusion created by the negative sign of beta values and the correlation coefficients of each discrete predictor variables. Thus, readers or beneficiaries can clearly understand which group of one discrete predictor was highly affected by risky sexual behavior.
Table 1 - Mean comparison between each self-system predictor variable on risk sexual behaviour result

<table>
<thead>
<tr>
<th>variables</th>
<th>levels</th>
<th>N</th>
<th>mean</th>
<th>Std.deviation</th>
<th>Eta</th>
<th>Eta²</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender</td>
<td>male</td>
<td>75</td>
<td>22.63</td>
<td>12.927</td>
<td>.086</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>75</td>
<td>20.41</td>
<td>12.862</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic performance</td>
<td>upper</td>
<td>64</td>
<td>13.33</td>
<td>10.732</td>
<td>.580</td>
<td>.337</td>
</tr>
<tr>
<td></td>
<td>middle</td>
<td>17</td>
<td>21.24</td>
<td>13.618</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower</td>
<td>69</td>
<td>29.19</td>
<td>9.560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stay in university</td>
<td>One year</td>
<td>62</td>
<td>17.29</td>
<td>17.29</td>
<td>.295</td>
<td>.087</td>
</tr>
<tr>
<td></td>
<td>Two year</td>
<td>34</td>
<td>22.32</td>
<td>13.151</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Three&amp; above</td>
<td>54</td>
<td>25.87</td>
<td>11.951</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial sex when</td>
<td>B4 university</td>
<td>39</td>
<td>32.95</td>
<td>6.083</td>
<td>.810</td>
<td>.656</td>
</tr>
<tr>
<td></td>
<td>In university</td>
<td>57</td>
<td>26.46</td>
<td>10.093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>family economic status</td>
<td>poor</td>
<td>63</td>
<td>28.32</td>
<td>9.845</td>
<td>.500</td>
<td>.250</td>
</tr>
<tr>
<td></td>
<td>middle</td>
<td>34</td>
<td>21.18</td>
<td>13.111</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>rich</td>
<td>53</td>
<td>13.66</td>
<td>11.536</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents educational level</td>
<td>≥1st degree</td>
<td>37</td>
<td>15.33</td>
<td>12.36</td>
<td>.392</td>
<td>.1536</td>
</tr>
<tr>
<td></td>
<td>diploma</td>
<td>47</td>
<td>16.29</td>
<td>16.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can Read&amp; write</td>
<td>35</td>
<td>20.32</td>
<td>13.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>illiterate</td>
<td>31</td>
<td>21.32</td>
<td>14.44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: grand mean=21.54 and standard deviation= 12.899

As it is clearly stipulated in the above table males and females mean difference were not that significant though male students were found as victims of the risk behavior in previous researches. Moreover, students who were academically poor and from poor family were found with high mean score in risk sexual behavior result. The other predictor found with high mean difference among its subdivisions was the time when students started initial sexual debuted. Accordingly, those who initiate sex before they inter university were found with high mean than those who started sex in university. Besides, the other predictors with great mean difference were parental education and family socio-economic status.

4.2.1.2. Result of the ANOVA Analysis for the self-system predisposing factors

The ANOVA analysis was computed in order to see if there is a significant difference in risk sexual behavior among students because of the self-system factors. Thus, the following table shows the coefficient determination or R Squared (the total contribution of both variables) and also their independent contribution (the partial Eta square) for the variance in students’ risk behavior. Even though ANOVA is a good statistical tool to test the significance of the contribution of the predictor variables in general, it doesn’t tell us the individual contribution of each predictor variable.

Table 2: ANOVA Summary Table for the self-system factors on students’ risk behavior

<table>
<thead>
<tr>
<th>Model2</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>17896.893</td>
<td>7</td>
<td>2556.699</td>
<td>52.658</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>6894.547</td>
<td>142</td>
<td>48.553</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24791.440</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6894.547</td>
<td>142</td>
<td>48.553</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24791.440</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), first sex when
b. Predictors: (Constant), first sex when, sex of the respondent, university stay, religiosity, watch pornography, substance use, academic performance
c. Dependent Variable: risk behavior (unplanned & unsafe sex)
The result of the ANOVA in the Table shows that there was risk behaviour difference among students because of their academic status. The risk behaviour difference among students because of their initial sex intercourse was found to be statistically significant (F=241.378, df1=1, df2=148, p>0.05). Furthermore, the risk behaviour difference was also significant for the remaining self-related predictors (F=52.658, df1=7, df2=142, p>0.05). This means, all the seven predictors in combination were found good predictors of risk sexual behaviour.

4.2.1.3. Results of Multiple-Regression

Multiple regression analysis was computed in order to see the combined and independent predictive value of the predictor variables over the criterion variable and also to check whether it is statistically significant or not. The predictor variables were the self-system Variables (first sex before or after university, sex, academic achievement, watching pornography, university stay, religiosity and substance& alcohol use) and the criterion variable was risk sexual behaviour. The Table below also presents the regression coefficient (R), squared multiple correlations or regression coefficient of determination (R²), and adjusted squared multiple correlations (R²adj) when all the predictors entered simultaneously.

Table 3: Model Summary Table of the self-system predisposing factors in Predicting Students’ risk sexual behavior

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Std.Error of Estimate</th>
<th>Change statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.850</td>
<td>.722</td>
<td>.708</td>
<td>6.968</td>
<td>R² change 52.658 F change 7 df1 42 df2 .000</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), first sex when
b. Predictors: (Constant), age at first sex, sex, university stay, religiosity, watch pornography, substance use, academic performance
C. criterion variable: risk sexual behavior

Regressing risk sexual behavior on the self-system predictor variables revealed that overall the model significantly predicted risk sexual behavior (F=52.658, p < .05). This means, results presented in above Table indicates that all the predictors in combination yielded a statistically significant and positive multiple correlation (R= .850, df1=7, df2= , F=142, *p<.01) which is a regression coefficient between predicted and actual scores on the criterion variable. The regression coefficient of determination (R²=.722) represents the proportion of variance accounted for by the predictor variables. That is, 72.2% of the total variance in Students’ risk sexual behavior was explained by the seven predictors. As to the independent contribution of the predictors, see the standardized betas in the Table below.

Table 4: Summary Table of Stepwise Regression Analysis for self-system predisposing factors’ independent Predictive power on Students’ risk sexual behavior

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized B</th>
<th>Std.Error</th>
<th>Standardized Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>27.44</td>
<td>5.689</td>
<td>____</td>
<td>4.823</td>
<td>.000</td>
<td>____</td>
</tr>
<tr>
<td>Sex of respondents</td>
<td>-.054</td>
<td>1.185</td>
<td>-.002</td>
<td>-.045</td>
<td>.964</td>
<td>-.086</td>
</tr>
<tr>
<td>University stay</td>
<td>.607</td>
<td>.783</td>
<td>.041</td>
<td>.775</td>
<td>.440</td>
<td>.294</td>
</tr>
<tr>
<td>Academic performance</td>
<td>1.981</td>
<td>.884</td>
<td>.145</td>
<td>2.240</td>
<td>.027</td>
<td>.580</td>
</tr>
<tr>
<td>Age at 1st sex</td>
<td>-.184</td>
<td>.017</td>
<td>-.595</td>
<td>-11.015</td>
<td>.000</td>
<td>-.787</td>
</tr>
<tr>
<td>Drug and alcohol use</td>
<td>-5.466</td>
<td>1.658</td>
<td>-.212</td>
<td>-3.296</td>
<td>.001</td>
<td>-.623</td>
</tr>
<tr>
<td>Watching pornography</td>
<td>.578</td>
<td>1.580</td>
<td>.022</td>
<td>.366</td>
<td>.715</td>
<td>-.467</td>
</tr>
<tr>
<td>religiosity</td>
<td>1.674</td>
<td>1.611</td>
<td>.068</td>
<td>1.039</td>
<td>.301</td>
<td>.516</td>
</tr>
</tbody>
</table>

a. Dependent Variable: risk behavior (unplanned & unsafe sex)
b. Note: Total N = 150
Although zero-order correlations indicated all the predictor variables predicted students’ risk sexual behavior significantly, when all of the predictors were included only three of them added unique variance. Those were first sex when, substance use, and academic performance respectively. In other words, stay in university, watching pornography, religiosity and sex of the respondents were found to have non-significant contribution for the variance in students’ risk sexual behavior ($\beta = .041, t = .775, p > .05$), ($\beta = .022, t = .366, p > .05$) ($\beta = .068, t = .301, p > .05$) and ($\beta = -.002, t = -.964, p > .05$) respectively.

Besides, in order to determine which of the treated variables (those which have significant beta weights) were more influential in predicting the variance in students’ risk behavior, multiple-regression was conducted by entering sex, university stay, and first sex when, academic performance, drug use, watching pornography and religiosity as predictors. Three predictors of the self-system variables had statistically significant contribution for the variability in risk behavior, relatively first sex when ($\beta = -.595, t = -11.015, * p < 0.05$) had strongest and significant effect on sexual risk behavior, which was followed by academic performance, ($\beta = .145 , t = 2.240, * p < 0.05$), and drug use ($\beta = .212, t = -3.296, * p < 0.05$) with their such strong and significant effect for the variation in students’ risk behavior. The Beta weight presented in the above Table indicated the magnitude of variance explained by each predictor independently when all the predictor variables were entered. Accordingly, the variation in risk behavior accounted for by first sex when was 59.5% (42.96% out of the 72.2%: their combined contribution), by drug and alcohol use was 21.2% & by academic performance was 14.5% respectively in descending order. The result shows that students who committed sexual intercourse before university had an experience of more sexually risk full life.

Regarding the correlation staff, zero order and partial correlations were computed to see the magnitude and direction of the relationship existed between the predictors and the outcome variable. Unlike the zero order, the partial correlation was mainly to see their relationship status when predictor variables were entered one by one while controlling the cofounding effect of the other variables. Therefore, accordingly only first sex when and drug& alcohol use were found strongly related with students risk sexual behavior. However, as you can see from the above table in the zero order correlation column all the six predictors, except sex of the respondent, are strongly related with the output variable, risk sexual behavior. Negative sign for sex and academic performance are not but directly related with the way how the levels or categories were labeled or coded. This is to mean that males and academically poor students were found to be at risk. Besides, according to the result of the study as alcohol and drug use increases risky sexual practice increases.

### 4.2.2. Results of the quantitate analyses on family system factors

This part included the ANOVA and multiple regression analyses of the family system predisposing factors for risky sexual behaviours. Among the main family related factors investigated in this study were family economic status, parents’ education, family follow-up& communication. They were selected based previous works and the dominant themes of the qualitative part of this study.

#### 4.2.2. 1. Result of the ANOVA Analysis for the family system predisposing factors

The ANOVA analysis was computed in order to see if there is a significant difference in risk sexual behaviour among students because of the familial-system factors. Thus, the following table shows the sum of squares and mean of squares for the variance in students’ risk behaviour.
Table 5: ANOVA Summary Table for the self-system factors on students’ risk behavior

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6188.038</td>
<td>1</td>
<td>6188.038</td>
<td>49.229</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>18603.402</td>
<td>148</td>
<td>125.699</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24791.440</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>9408.639</td>
<td>3</td>
<td>3136.213</td>
<td>29.766</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>15382.801</td>
<td>146</td>
<td>105.362</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24791.440</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), family economic status
b. Predictors: (Constant), family economic status, parents education, family follow-up & communication
c. Dependent Variable: risk behavior (unplanned & unsafe sex)

The result of the ANOVA in the Table shows that there was risk behaviour difference among students because of their family related predisposing factors. The risk behaviour difference among students because of their family economic status was found to be statistically significant (F=49.229, df1=1, df2=148, p<.05). However, the risk behavior difference was also significant for the remaining self-related predictors (F=29.766, df1=3, df2=146, p<.05). This means, all the three predictors in combination were found to be good predictors of risk sexual behavior.

4.2.2.2. Results of Multiple-Regression

Multiple regression analysis was computed in order to see the combined and independent predictive value of the familial system predictor variables for the variation on the criterion variable and also to check whether it is statistically significant or not. The predictor variables were the familial-system Variables (family economic background, parent educational status and family follow up) and the criterion variable was risk sexual behaviour. The Table below also presents the regression coefficient (R), squared multiple correlations or regression coefficient of determination (R²), and adjusted squared (R²adj) when all the predictors were entered simultaneously.

Table 6: Model Summary Table of all familial-system predisposing factors in Predicting Students’ risk sexual behavior

<table>
<thead>
<tr>
<th>model</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Std. Error of Estimate</th>
<th>Change statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R² change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F change</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>df2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig</td>
</tr>
<tr>
<td>1</td>
<td>.616</td>
<td>.380</td>
<td>.367</td>
<td>10.265</td>
<td>.130</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.284</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), family economic status
b. Predictors: (Constant), family economic statuses, parent educational status, family follow up and communication

Regressing risk sexual behavior on the familial-system predictor variables revealed that overall the model significantly predicted risk sexual behavior (F=15.284, p < .05). This means, results presented in above Table indicates that all the predictors in combination yielded a statistically significant and positive multiple correlation (R=.616, df1=3, df2=146, F=15.284, *p<.01) which is a regression coefficient between predicted and actual scores on the criterion variable. The regression coefficient of determination (R² = .380) represents the proportion of variance accounted for by the predictor variables. That is, 38.0% of the total variance in Students’ risk sexual behavior was explained by the seven predictors. As to the independent contribution of the predictors, see the standardized betas in the Table below.
Table 7: Summary Table of stepwise Regression Analysis for family system predisposing factors’ independent Predictive power on Students’ risk sexual behavior

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized</th>
<th>Standardized</th>
<th>Beta</th>
<th>Zero order</th>
<th>partial</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>14.258</td>
<td>4.461</td>
<td>____</td>
<td>3.196</td>
<td>.002</td>
</tr>
<tr>
<td>family economic status</td>
<td>-4.975</td>
<td>1.054</td>
<td>-.339</td>
<td>-4.722</td>
<td>.000</td>
</tr>
<tr>
<td>parent education</td>
<td>-2.612</td>
<td>.840</td>
<td>-.218</td>
<td>-3.109</td>
<td>.001</td>
</tr>
<tr>
<td>family follow up &amp; communication</td>
<td>-6.802</td>
<td>1.920</td>
<td>-.263</td>
<td>-3.543</td>
<td>-.475</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), family economic background, parent educational status, family follow up and communication b. Dependent Variable: risk behavior (unplanned & unsafe sex) c. Note: Total N = 150

The above multiple regression indicated that the three familial predictor variables predicted students’ risk sexual behavior significantly; when all of the predictors were included three of them added unique variance. Those were family economic background, parent educational status, family follow up and communication respectively.

Besides, in order to determine which of the treated variables (those which have significant beta weights) were more influential in predicting the variance in students’ risk behavior, multiple-regression was conducted by entering family economic background, parent educational status and communication, as predictors. The three predictors of the familial-system variables had statistically significant contribution for the variability in risk behavior, relatively family economic status ($\beta=-.339$, $t=-4.722$, *p*<0.05) had strongest and significant effect on sexual risk behavior, which was followed by family follow up and communication, ($\beta=-.263$, $t=-3.543$, *p*<0.05), and parent education ($\beta=-.218$, $t=-3.109$, *p*<0.05) with their such strong and significant effect for the variation in students’ risk behavior. These Beta weights presented in the above Table indicated the magnitude of variance explained by each predictor independently when all the predictor variables were entered. Accordingly, the variation in risk behavior accounted for by family economic status was 33.9% (12.88% out of the 38.0%: their combined contribution), by family follow up and communication was 26.3% & by parent’s educational status was 21.8% respectively in descending order. The result shows that family economic status was found to be the strongest family related predisposing factors on predicting risk sexual behavior.

Regarding the correlation of the predictors and criterion variable, zero order and partial correlations were computed to see the status of the relationship existed between the predictors and the outcome variable. Unlike the zero order, the partial correlation was mainly to see their relationship with the output variable while controlling the cofounding effect of the other predictor variables. Therefore, accordingly three of the familial predisposing variables were found significantly related to students risk sexual behavior at .05 alpha levels. However, as you can see from the above table in the zero order correlation column the predictors were found with strong correlation coefficient with students’ risk sexual behavior. Negative sign for the predictors and risky behavior were nothing but related with the way how the levels or categories of each predictor were labeled or coded. This is to mean that when a predictor increases, sexually risk behavior decreases. Besides, according to the result of the correlation matrixes, family income was found with strong correlation coefficient than the others.
4.2.3. Result of the quantitative analysis for the extra-familial predisposing factors

This part included the ANOVA and multiple regression analyses of the extra family system predisposing factors for risky sexual behaviours. Among the main family related factors investigated in this study were university controlling system, the power of peer influence, access to health education, access to counseling and guidance, access to youth spare. They were selected based up on previous works and the dominant themes of the qualitative part of this study.

4.2.3.1. Result of the ANOVA Analysis for the extra-familial system predisposing factors

The ANOVA analysis was computed in order to see a significant difference in risk sexual behaviour among students because of the extra-familial system factors. Thus, the following table shows the coefficient determination or R Squared (the total contribution of both variables) and also their independent contribution (the partial Eta square) for the variance in students’ risk behavior.

Table 8: ANOVA Summary Table for the self-system factors on students' risk behavior

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>18034.965</td>
<td>5</td>
<td>3606.993</td>
<td>76.875</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>6756.475</td>
<td>144</td>
<td>46.920</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24791.440</td>
<td>149</td>
<td>138.671</td>
<td>138.671</td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), university controlling system, the power of peer influence, access to health education, access to counseling and guidance, access to youth spare

The result of the ANOVA in the Table shows that there was risk behavior difference among students because of the extra familial system or the institutional predisposing factors. The risk behavior difference among students because of the extra familial system was found statistically significant (F=76.875, df1=5, df2=144, p>0.05).

4.2.3.2. Results of Multiple-Regression

Multiple regression analysis was computed in order to see the combined and independent predictive power of the predictor variables over the criterion variable and also to check whether it is statistically significant or not. The predictor variables were the institutional predisposing Variables (university controlling system, the power of peer influence, access to health education, access to counseling and guidance services, and access of youth spare) and the criterion variable was risk sexual behaviour. The Table below also presents the regression coefficient (R), squared multiple correlations or regression coefficient of determination (R^2), and adjusted squared multiple correlations (R^2 adj) when all the predictors entered simultaneously.

Table 9: Model Summary Table of the five extra familial predisposing factors in Predicting Students’ risk sexual behavior

<table>
<thead>
<tr>
<th>model</th>
<th>R</th>
<th>R^2</th>
<th>Adjusted R^2</th>
<th>Std. Error of Estimate</th>
<th>Change statistics</th>
<th>R^2 change</th>
<th>F change</th>
<th>df1</th>
<th>df2</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.853</td>
<td>.727</td>
<td>.718</td>
<td>6.850</td>
<td></td>
<td>.727</td>
<td>76.875</td>
<td>5</td>
<td>144</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), university controlling system, peer influence, access to health education, access to counseling and guidance, access to youth spare

b. Dependent Variable: risk behavior (unplanned & unsafe sex)

Regressing risk sexual behavior on the extra familial system predictor variables revealed that overall the model significantly predicted risk sexual behaviour (F=76.875, df1=5, df2=144, p < *.05). This means, results presented in above Table indicates that all the predictors in combination yielded a statistically significant and positive multiple
correlation ($R^2 = .853$, df1=5, df2=, F=144, p<.01) which is a regression coefficient between predicted and actual scores on the criterion variable. The regression coefficient of determination ($R^2 = .722$) represents the proportion of variance accounted for by the predictor variables. That is, 72.7% of the total variance in Students’ risk sexual behavior was explained by the seven predictors. As to the independent contribution of the predictors, see the standardized betas in the Table below.

Table 10: Summary Table of Multiple Regression Analysis for institutional predisposing factors’ independent Predictive power on Students’ risk sexual behavior

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Unstandardized B</th>
<th>Std.Err</th>
<th>Standardized Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>6.298</td>
<td>4.398</td>
<td></td>
<td>1.432</td>
<td>.154</td>
<td></td>
</tr>
<tr>
<td>power of peer influence</td>
<td>8.938</td>
<td>1.469</td>
<td>.346</td>
<td>6.084</td>
<td>.000</td>
<td>.700</td>
</tr>
<tr>
<td>access to health education</td>
<td>-5.987</td>
<td>1.875</td>
<td>-.230</td>
<td>-3.193</td>
<td>.002</td>
<td>.736</td>
</tr>
<tr>
<td>access to youth spare</td>
<td>-8.139</td>
<td>1.824</td>
<td>-.314</td>
<td>-4.463</td>
<td>.000</td>
<td>.744</td>
</tr>
<tr>
<td>counseling and guidance</td>
<td>-2.068</td>
<td>1.876</td>
<td>-.079</td>
<td>-1.103</td>
<td>.272</td>
<td>.703</td>
</tr>
<tr>
<td>university control</td>
<td>1.865</td>
<td>1.214</td>
<td>.072</td>
<td>1.536</td>
<td>.127</td>
<td>.367</td>
</tr>
</tbody>
</table>

Note: Total N = 150

Codes: peer influence: yes=1, No=2; & university control: Yes=1, No=2

When all of the predictors were analyses by stepwise method only three of them added unique variance. Those were power of peer, access to health education, and access to youth spare respectively. However, access to counseling and guidance, and university controlling system were found to have non-significant contribution for the variance in students’ risk sexual behavior ($\beta$=-.079, t=-1.103, p>.05), and ($\beta$=-.072, t=-1.536, p>.05) respectively.

Besides, in order to determine which of the treated variables (those which have significant beta weights) were more influential in predicting the variance in students’ risk behavior, multiple-regression was conducted by entering university controlling system, the power of peer influence, access to health education, access to counseling and guidance, and access to youth spare as predictors. Three predictors of the self-system variables had statistically significant contribution for the variability in risk behavior, relatively power of peer influence ($\beta$=.346, t= 6.084,*p<.05) had strongest and significant effect on sexual risk behavior, which was followed by access to health education, ($\beta$=-.314, t=4.463, *p<.05) and access to youth spare($\beta$=-.230, t=3.193, *p<.05) with their such strong and significant effect for the variation in students’ risk behavior. The absolute value of the Beta weights presented in the above Table multiplied by 100 indicates the magnitude of variance explained by each predictor independently. Accordingly, the variation in risk behavior accounted for by peer influence was 34.6% (42.96% out of the 72.7%: their combined contribution), by access to health education was 31.4 % & by access to youth spare was 23.0 % respectively in descending order. The result in general shows that students who were easily influenced by their peers were victims of risk sexual behaviors.

In order to see the correlation of the predictors and criterion variable, zero order and partial correlations were computed between the predictors and the outcome variable. The partial correlation was mainly to see their relationship when predictor variables were entered turn by turn while the cofounding effect of the other variables was controlled. Therefore, accordingly three of the extra familial predisposing variables were significantly related to students risk sexual behavior at. However, the zero order correlation matrix in the above table shows that all the five predictors were found strongly correlated with students’ risk sexual behavior. Besides, according to the result of the correlation matrixes, access to health education and access to youth spare were indirectly related...
with risky sexual practice. The other way expression of this is when access to health education and youth spare increases, students risk sexual behavior decreases.

CHAPTER FIVE

DISCUSSION

This exploratory study investigated the main predisposing constructs that contribute to the university students risk sexual behavior. In this study both qualitative and quantitative approaches were used in order to triangulate their findings with each other. In addition to the manual thematic analysis for the qualitative data, rigorous quantitative data analyses techniques were computed to cross check whether the dominantly pinpointed predisposing factors in the qualitative data could be supported by the quantitative approach. Therefore, mean comparisons, analysis of variance, and stepwise multiple regression analyses were performed to answer all the above research questions. The findings of this study were both consistent and inconsistent with the results of past studies. Accordingly, the discussion of the results is presented in accordance the above leading question in this chapter.

Note: readers should notice that the discussion of the study is arranged according to the three dimensions of the predisposing factors i.e. self-system, family system and extra-familial system. For convenience sake the quantitative and qualitative findings were discussed in harmonic fashion.

Discussion on the self-system risk sexual predisposing factors

According to the result of this study, risky sexual behavior had positive and strongly significant correlations (Eta) with three of the self-system predictor variables and had also negative and significant associations with the rest three. In other words, risky sexual behavior was correlated positively and significantly with time stay in university, academic performance, and religiosity. Besides, it was negatively correlated with age of initial sex, substance use, and watching pornography movies. However, to avoid the effect of multicolinearity, which severely affects measures of association, partial correlation technique was conducted and then, unlike their boosted zero correlation, three of the predictor variables (academic performance, initial sex & substance use) were found with significant relationship. This means being poor at school, starting sex before the entering university and substance and alcohol use were the significantly associated risky sexual behaviors. The result was in agreement with the qualitative analysis of this study and previous studies (e.g. Harvey & Spigner, 1995; Levy, Lampman, Handler, Flay, & Weeks, 1993). For instance, according study conducted at Bahir dar university, Khat chewing, drinking alcohol, attending night clubs and watching porno videos were independently associated with sexually risky behaviors (Wondemagegn Mulu, Mulat Yimer and Bayeh Abera, 2013). In both correlation analyses sex of respondents had not meaningful association with the criterion variable. This result was contradictory with some previous studies. Some previous studies stated that sex was strong predictor and males are highly exposed to risk behaviors (e.g. Harvey & Spigner, 1995; Levy, Lampman, Handler, Flay, & Weeks, 1993). This contradiction might be raised because of two major reasons. First, the setting of the previous study and this study was entirely different, abroad and Ethiopia respectively and the participants of this study were university students who are believed to in similar age category i.e. emerging adulthood. Second, because of the freedom that Ethiopian females are enjoying currently may narrowed the gap between female and male students exposure to outdoor activities. In line to the idea of the qualitative approach, the quantitative analysis proved that age of initiating sex was found with very
strong correlation with the outcome variable. Likewise, previous studies were also in support of this finding (Wondemagegn Mulu, Mulat Yimer and Bayeh Abera, 2013).

The qualitative and quantitative analyses strongly claimed that students’ performance and motivation was a strong and significant correlation. Even past researches reviewed at this study like (Metzler etal. 1994) mentioned that what students feel about their academic condition (i.e. their self-efficacy) is one of the few and most significantly associated factors with risk behavior.

To see whether or not the selected predictor variables significantly predict students’ risk behavior, ANOVA and multiple regressions were performed. The self-system predictor variables were sex, age of initial sex; years stay university, religiosity, watch pornography, substance use, and risky sexual behavior as criterion variable.

The result of the ANOVA and the multi-regression analyses showed that the combined effect of the seven self-system predictors was found strong and statistically significant predictors. This is like what the qualitative part of this study dictates. Previous research works on the topic stated that not only these but also many other self-related predisposing factors were indeed with significant predictive value (Bronfenbrenner, 1979).

To see the significance of the independent predictive power of each self-system risk associative variables, stepwise multiple regression was computed and then only three of them, age at initial sex, academic performance& substance use, were found with noticeable beta value and statistically significant t-statistic at .05 alpha level. This result was supported by the qualitative part of this study and previous researches. For instance, in a longitudinal study employing latent growth curve modeling, Duncan etal.(1999) found strong support for Problem Behavior Theory, as the development of three types of substance use (alcohol, cigarettes, and other drugs) strongly covaried with the development of risky sexual behaviors.

In contrast to previous studies, the quantitative finding of this study shows that four predictor variables were found to be non-significant in explaining student’s risky sexual behavior. Those predictor variables were sex, religiosity, years stay in university, and watching pornography respectively (Bingham & Crockett, 1996; Crockett, Bingham, Chopak,& Vicary,1996). These self-system predictor variables were found non-significant because it did not yield enough evidence to contribute to the variation in student’s risk sexual behavior. For some of the variables like religiosity, previous researches were with inconsistent findings. One study stated that adolescents who report higher levels of religiosity are less likely to engage in sexual intercourse (Bingham & Crockett, 1996; Crockett, Bingham, Chopak,& Vicary,1996). However, in line with study, religiosity has not been found to reliably predict sexual risk behavior. Jemmott and Jemmott (1992) said that religiosity was inversely related to sexual risk behavior in a large survey sample of adolescents in Minnesota; however, the standardized regression coefficient was very small and accounted for very little of the variance in the dependent variable (Neumark-Sztainer ,Story, French,& Resnick, 1997). In a more recent study, Miller etal.(2000) found no relation between religiosity and adolescent sexual behavior among minority youth.

Another controversial result of this quantitative analysis was the about watching pornography. Unlike to the qualitative analysis and past researches, this self-predisposing variable was found with lesser and non-significant contribution for the variation accounted for adolescents risk behavior. This self-contradicting finding might result from the attempt made to dichotomize this interval scale variable in this study. Furthermore, the other justification for this conflict may be students’ self-sex activity like masturbation which is highly related with
watching explicit pornography films. In one study done in Europe found strong and positive correlation between watching sex videos and masturbation.

Discussion on the family system risk sexual predisposing factors

According to the result of this study, risky sexual behavior had negative and strongly significant correlations with three of the institutional predictor variables. In other words, risky sexual behavior was correlated positively and significantly with family income, family follow up, and parents’ education. However, to avoid the effect of multicolinearity, which severely affects measures of association, partial correlation analysis was conducted and then, unlike their boosted zero correlation, three of the predictor variables (family income, family follow up, and parents’ education) were found with significant relationship. This means students who were from poor, uneducated and uninvolved parents were found to be in risky sexual life. The result was in agreement with the qualitative analysis of this study and previous studies. For instance, as noted by Metzler etal. (1994), who included perceived parental support in their model of the social context of sexual risk-taking, alongside other family variables, peer influences; academic factors and academic competence in early adolescence are inversely related to risk sexual practices. They consequently concluded that parental support and involvement are indirectly related to decrease sexual risk behaviors. In both correlation analyses sex of respondents had not meaningful association with the criterion variable.

In line to the idea of the qualitative approach of this study, the quantitative analysis proved that family economic background was found with very strong correlation coefficient and noticeable coefficient of determination with the outcome variable. Likewise, previous studies were also in support of this finding. To mention some, Gordon (1996) stated that family structure variables, such as SES (socio-economic status), may precipitated adolescents sexual risk behavior. It is not surprising to find such strong correlation between parent SES and children’s risky sexual behavior because as significant others throughout the socialization process, parents transmit their own standards of conduct, both directly through their parenting practices and indirectly through their own observable behavior. In support of the above findings, Hibret Alemu(2004)m in his MA thesis work concerning the association of poverty and risk sexual practice found that poverty and HIV transmission are linked in a variety of ways. Poverty often leads to prostitution and sexual servitude or to trading sex for material goods.

To see whether or not the selected predictor variables significantly predict students’ risk behavior, ANOVA and multiple regressions were performed.

The result of the ANOVA and the multiple regression analyses showed that the combined effect of the three predictors was found strong and statistically significant predictors. This is like what the qualitative part of this study dictates. Previous research works on the topic stated that family structure variables and family process variables influences on adolescent sexual activity (e.g.,Jemmott& Jemmott,1992; Metzler, Noell, Biglan, Ary,& Smolkowski, 1994).

Stepwise multiple regression was computed to explore the significance of the independent predictive power of the family related variables and then three of them, family income, family involvement & parents education were found with big beta value and statistically significant t-statistic at .05 alpha level. This result was supported by the qualitative part of this study and previous researches. For instance, in one study of urban adolescents, living in poverty, especially when combined with low academic skills, was related to early pregnancy. Besides, Roosa et.al (1997) found significant contribution of SES on accounted for the variance in teenage pregnancy.
Discussion on the extra familial system risk sexual predisposing factors

The result of their zero order correlation indicated that risky sexual behavior was correlated positively and significantly with peer influence, and university control. Besides, it was negatively correlated with access to youth health education, availability of youth spare, and access to guidance and counseling services. Partial correlation method was conducted to check the independent association of the predictors while the side effect of the other on both correlated variables removed. Thus, not only the magnitude of all the zero order relationships were reduced but also only three of the predictor variables (peer influence, access to youth health education and availability of youth spare) were found with strong relationship. This means being influenced by peer, lack of access to youth health education and information as well as scarcity of places where students could spent their spare time were found with strong association with risky sexual behaviors. This result was in agreement with both the qualitative analysis of this study and previous studies. Example, one study by Pendergrast et al. (1992) has noted that increased exposure to sexual education in the schools, particularly on the avoidance of sexually transmitted diseases, is related to increased condom use.

Furthermore, on both the qualitative and quantitative findings the power of peer influence was found as the significantly associated variable. Likewise many previous studies in this regard found that peers’ behaviors and attitudes have been found correlated to adolescent sexual risk behavior, especially in light of the findings that adolescents whose peers are sexually active are more likely to be sexually active themselves (e.g., Miller et al., 2000; Romer et al., 1994). Besides, in another study, adolescents’ perceptions of their peers' behaviors have also been found to relate to sexual risk-taking, as several researchers have found that consistent condom use is associated with the perception of condom use among friends (Brown et al., 1992; Romer et al., 1994; Stanton et al., 1994).

Partial correlation analysis counseling and guidance service as well as university control were found with weak association with the criterion variable. However, Some previous studies found out the opposite (e.g. Harvey & Spigner, 1995; Levy, Lampman, Handler, Flay, & Weeks, 1993). This contradiction regarding to guidance and counseling service was supposed to be the result of the ineffectiveness of the so called such centers in term of expert and material inputs. Justifications regarding the university controlling mechanisms could be the way they are implemented without a common understanding students and implementers. A rule to be effective there should be common understanding and consensus about it in the public.

The qualitative and quantitative findings were complimentary to each other on the effect of health education and availability of recreational centers in universities. Even past researches reviewed at this study like (Metzler et al. 1994) mentioned that absence of such centers have a power to worsen and increase students risk behavior?

The result of the ANOVA and the multi-regression analyses showed that the combined effect of the five extra familial system predictors was found strong and statistically significant. This is like what the qualitative part of this study dictates and previous research works on the topic concluded.

The significance of the independent predictive power of each risk associative variables is shown on the stepwise multiple regression result table. According to the result of the stepwise regression peer influence, access to health education and availability of youth spare were found with noticeable beta value and statistically significant t-statistic. This result was supported by the qualitative part of this study and previous researches. For instance, One study by Pendergrast et al. (1992) has noted that increased exposure to sexual education in the schools,
particularly on the avoidance of sexually transmitted diseases, is related to increased condom use. Further, research is needed to investigate the potential effects of the school environment on adolescent sexual behavior.

In contrast to previous studies and the qualitative result, the stepwise regression result, like partial correlation, shows that the two predictor variables, counseling and guidance service and university control, were found to be non-significant in explaining student’s risky sexual behavior. These predictor variables were found non-significant because it did not yield enough evidence to contribute to the variation in student’s risk sexual behavior.

CHAPTER SIX
CONCLUSIONS AND RECOMMENDATIONS

6.1. CONCLUSIONS

This research was aimed to draw attention to some of the socio-environmental factors that contribute to students’ sexual risk behavior on campuses. In recognition of many other factors addressed by numerous previous researches discussed in the literature review, the findings of this research suggest that students’ sexual risk behavior on campuses is typically influenced by multi-systemic factors such as their poor academic performance, early sexual debut, substance use, low family socio-economic status, low parent education level and lack of parental involvement and communication as well as the school environment, negative peer influence, lack of health education and counseling services. Those factors were selected mainly based on their dominance in the qualitative data of this study along with past studies recommendations. These findings are not exhaustive in exploring factors that shape students’ sexual risk behavior. Nevertheless, it is critical to note that the Problem Behavior Theory provides a good theoretical framework for understanding the key factors that encourage students’ sexual risk-taking behavior.

Certainly, research in the area of adolescent sexual risk behavior has come a long way from the exploratory and mostly descriptive studies of several decades ago (e.g. Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953).

Questions such as these present dilemmas and challenges to researchers in this field. The rapid advances in statistical methodology and measurement strategies offer tools with which to address the limitations noted in this review and to move our knowledge and understanding of adolescent sexuality to new heights. With these challenges and advances in mind, we offer the following recommendations for future research:

1. More attention must be given to comprehensive models that take into account factors from multiple systems of influence and their combined effects on adolescent sexual risk-taking behavior. Examples of such models would include mediational pathways in which familial (e.g., parent ± child relationship) and extra-familial (e.g., peer norms) factors influence sexual behavior through their effect on self-system variables, and models that consider nonlinear relationships among predictor and outcome variables (e.g., too much or too little parental strictness being related to more adolescent sexual risk behavior).
2. Many variables found to be related to the sexual activity of adolescents have not been studied with regard to sexual risk-taking behaviors. More research is needed to understand the role of these variables in promoting sexual risk or sexual safety.
3. Strategies to enhance the validity and accuracy of self-report of sexual behavior need to be further explored and developed. The use of computer-assisted interviewing offers particular promise; however, the practicality of its use with low literacy teens and those unfamiliar with computers still needs to be established.

4. By far, the most extensively studied sets of variables are those from the self-system. Future research should focus more attention on familial and extra-familial factors that may contribute to adolescent sexual risk behavior. Extra-familial contexts, such as school and neighborhood conditions, offer particular promise for inclusion as both targets and resources in prevention programs designed to reduce STD infection, pregnancy, and the transmission of HIV among youth. However, the specific factors within these contexts that are predictive of sexual risk behavior must be better specified or identified before they may be useful additions to prevention efforts. Furthermore, many of the self-system variables found to be related to sexual risk behavior are not amenable to change (e.g., age, gender, race) and may merely serve as proxies for the familial or extra-familial conditions or factors associated that truly influence behavior.

For practitioners working to reduce sexual risk behaviors and their resultant health hazards, the literature reviewed here and the multi-systemic perspective used to integrate the findings offer several guidelines. First, prevention and education efforts must be broad in scope and target factors from multiple systems of influence. While skills and knowledge are important, adolescents who possess adequate knowledge about the risks involved with sexual activity and the competence to engage in risk reduction strategies are still having unprotected sex, becoming pregnant, and contracting STDs, including HIV. Prevention programs need to consider the broader context in which the adolescent lives. Familial and extra-familial sources of behavioral influence should not be ignored when designing prevention programs, and, to the extent possible, both family members and peers should be included in prevention efforts.

The findings of the present researcher proposed that parents are a very powerful socializing force in the lives of children and adolescents. Parents are in a unique and powerful position to shape young people's attitudes and behaviors and to socialize them to become sexually healthy adults. They can do this, in part, by providing accurate information about sex and its risks, consequences, and responsibilities, and by imparting skills to make responsible decisions about health. However, the strength of their impact, relative to other information sources, may arise from their unique ability to engage their children in dialogues about sexual development and decision-making that occur early and are continuous (i.e., not one-time events), sequential (i.e., building upon each other as the child's cognitive, emotional, physical, and social development and experiences change), and time-sensitive (i.e., information is immediately responsive to the child's questions and anticipated needs rather than programmed to a curriculum). Thus, we would encourage that prevention efforts include the family as an active treatment component.

Finally, the literature suggests that targets for intervention include both competencies specific to sexual behavior and more general areas of psychosocial or family functioning. For adolescents, individual knowledge regarding sexuality and risk reduction, attitudes about condoms and sexual self-efficacy represent specific competencies known to be related to reduce sexual risk-taking. For parents, specific targets for intervention include knowledge of adolescent sexual behavior, monitoring of dating behavior, and skills to communicate with their adolescent children about sex. However, broader indices of functioning, such as depression and anxiety, general parenting skills, and parent-child relationship quality, are all appropriate targets for interventions seeking to promote well-being and reduce sexual risk behavior among adolescents.

In this sense, we would encourage prevention and intervention efforts that have as their ultimate goal the development of healthy and well-adjusted youth. Risk reduction would be part, but only a part, of such programs,
and the result would be teens and families that value and foster sexual health and safety as part of overall well-being.

As this literature review noted, numerous variables from the self, family, and extra familial systems have been found to be related to adolescent sexual behavior. Only recently have multisystem analyses that capture the complexity of the adolescent sexual experience been undertaken, yielding evidence for the influence of variables from all systems and suggesting that variables from across systems interact to increase the probability of adolescent sexual risk-taking behavior. Numerous issues face researchers and clinicians working with youth who are sexually active or who may soon become sexually active. Armed with recent advances in statistical and measurement technology, researchers in this field stand poised to make substantial contributions to our understanding of sexual risk behavior among adolescents. It is our hope that the suggestions offered in this review prompt researchers and clinicians alike to adopt a broad perspective toward adolescent sexual risk and health in general, and, in doing so, take those important next steps toward advancing our knowledge and improving the lives and safety of today's and tomorrow's youth.
Reference


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