ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

ATTITUDINAL SURVEY ON HIGH RISK SEXUAL BEHAVIOR (INTERVENTION STRATEGY) RELEVANT TO HIV/AIDS WITH RESPECT TO GENDER, AGE AND EDUCATIONAL LEVEL;

THE CASE OF BAHIR DAR UNIVERSITY STUDENTS

ASNAKE HAILU

MAY, 2001

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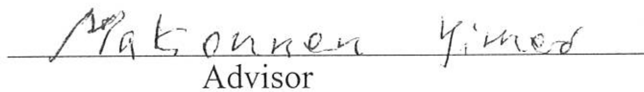

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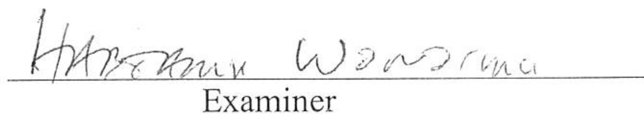

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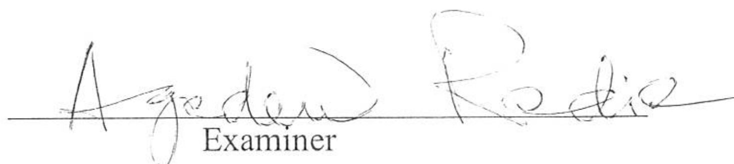
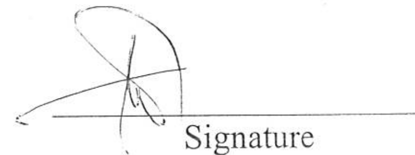

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ABSTRACT

The purpose of this study was to examine the attitude of Bahir Dar University students towards HIV/AIDS intervention strategy, in abstinence, condom use and faithfulness. 450 students constituted the sample from randomly chosen departments. A questionnaire was used to gather data and a univariate analysis of variance was employed.

Gender differences are found to be significant in attitude towards abstinence (females score higher than males). But there is no age and educational level differences observed. With regard to condom use first, second, third and fourth year students were found to be different regardless of their age and gender. In this study where faithfulness was treated as a dependant variable, age and educational level differences were found to be statistically significant. Which means faithfulness, as HIV/AIDS intervention strategy seems to be a likely method for young adults and senior students. In addition to these, all-possible first order interactions between age, gender and educational level were found to be significant.

Eventually, policy makers and different organizations working on HIV/AIDS need to teach abstinence as a realistic and feasible intervention strategy. In addition, social marketing agencies and concerned line ministries need to clear out all the suspicions individuals have and give the reality of condom use (both the drawback and advantages).

CHAPTER ONE

1 INTRODUCTION

1.1 Background of the Problem

No disease in modern times has received more attention or produced such hysteria as Acquired Immunodifficiency Syndrome (AIDS). The Joint United Nations Program on AIDS (UNAIDS) estimated the number of HIV infections worldwide at about 49.9 million by the end of 1999, of which 37 million were found in sub-Saharan Africa (ADF, 2000). Currently HIV has already infected many Ethiopians and the prevalence rate has been estimated to be high. This puts the country among the group with the highest level of infection in Africa (PFDRE, 1998).

AIDS has spread throughout Ethiopia and cases have been reported from every region. These reported (AIDS) cases represent the visible part of the epidemic. However, there is much more to the epidemic than the number of reported cases (MOH, 1998).

Although Ethiopia has been hit by HIV/AIDS epidemic later than many East African countries, the 1997 report showed 2.5 million people infected by HIV. About 90 percent of reported cases occur between the age of 20 and 49. The peak age for AIDS cases is 20-29 for females and 20-39 for males. These have roughly an equal number of male and female cases (MOH, 1998). Ministry of Health further says that

most infections are acquired through sexual contact. According to the report of the Ministry of Health 87 percent of new infections are due to heterosexual contact. It is also reported that the prevalence of adult HIV infections were 7.2 percent in the year 1997(MOH, 1998). This prevalence rate has shown a 2.2 percent increase to that of 1996. This dramatic rate of infection solicited a rigorous elucidation.

In response to this pressing need the Ethiopian Government has established a National HIV/AIDS Control Program. Since 1987 under the Ministry of Health several intervention activities have been under taken (PFDRE, 1998).

1.2 Statement of the Problem

Today, for the first time in the history of humankind, a generation of young people is becoming sexually active when the threat of an incurable, fatal disease hangs over every sexual contact. How does the threat of AIDS affect the sex lives of young people today? What kinds of effort are being made to curb the spread of AIDS, given that there is no early prospect of vaccine or cure for it? Prevention is our best hope at present to control the epidemic.

AIDS unlike the usual waterborne or airborne infectious disease is spread through mainly voluntary contact. Self-protection is therefore a more feasible preventive method than in the case of other infectious diseases (Posner, 1992).

The discussion on the prevention of HIV will focus on sexual contact. Efforts to prevent transmission of HIV has been less successful in reducing the risk of infection through unsafe sexual contact (Spencer, 1993).

Different authors suggested abstinence, consistent use of condom, and faithfulness to sexual partner as intervention strategies (MOH, 1998; Eshleman, 1991; Posner, 1992; Collins, 1988).

Nevertheless, the above mentioned research findings, in the background of the study and literature review, indicate that gender, age and educational level which could play significant role in practicing the intervention strategies.

In line with the above purpose, the following specific questions were formulated for investigation.

- Are there differences in attitude towards sexual abstinence, use of condom and faithfulness as feasible intervention strategies due to gender?
- Are there differences in attitude towards sexual abstinence, use of condom and faithfulness as feasible intervention strategies due to age?
- Are there differences in attitude towards sexual abstinence, use of condom and faithfulness as feasible intervention strategies due to educational level?
- Are there significant two way and three way interactions among gender, age and educational level regarding the attitude towards the intervention strategies?

1.3 *Objective of the Study*

The study will be carried out with the assumption that the following objectives will be attained.

- To examine if there is a significant difference between male and female respondents with regard to their attitude towards intervention strategies.
- To investigate if there is a significant difference among different age levels with regard to their attitude towards intervention strategies.
- To identify if there is a significant difference among different educational levels with regard to their attitude towards intervention strategies.
- To examine if there is two way and three way interactions among gender, age and educational level.
- To draw the attention of researchers to investigate in depth in the area of related topics.

1.4 **Significance of the study**

According to the report of Ministry of Health by 2000 more than (57%) of all hospital beds would be occupied by AIDS patients. By year 2014 expenditures for AIDS care could amount to one - third of the entire budget of the Ministry of Health. The number of AIDS orphans could increase to 620,000 by 2000 and 1.8 million by 2009. The number of work days lost to illness for a person with HIV/AIDS can range from as little as 30 to as many as 240 days (MOH, 1998).

Therefore the study was expected to have some practical and theoretical contributions in the sense that it sheds some light on the nature and direction of intervention on the spread of HIV/AIDS to bring a behavioral change. In this regard, the study assists the effort of government organization and NGOs. These, in turn, are expected to help the skilled, productive and sexually active citizens to protect themselves from HIV/AIDS infection while dealing with sexual matters.

1.5 Delimitation of the study

The study is delimited to Bahir Dar University students. As Spencer (1993) pointed out most students recognize that human sexuality involves a complex interaction of biological and psychological factors. In addition, Jorgan and Simon (1973) as quoted by Archer (1995) further conceived sexuality as being extremely susceptible to cultural patterning. However, the present study focuses on gender, age and educational level as variables to explain the attitude towards the intervention strategies.

1.6 Operational Definition of key terms

Sex - It refers to physical activities involving our sex organs for purpose of reproduction or pleasure (Spencer, 1993).

Sex Organs - Bodily structures that can be eroticized, even though they may play no direct role in reproduction or both eroticized and play a reproduction role (Spencer, 1993).

Sexual behavior - refers to a wide range of physical activities that involve the body in the expression of erotic or affectionate feelings (Spencer, 1993).

Gender - A phenomena that has resulted from factors such as culturally constructed attributes and behavior given to the female or male human being (Maccoby & Jaklin, 1991).

Behavioral Change - refers to change of sexual behavior and practice such as abstinence, use of condom and being faithful to sexual partner.

Abstinence - means refraining from sexual activity usually voluntarily (Ellis, 1984).

Faithfulness - Commitment to lifetime sexual partner.

Intervention strategy - refers to practicing abstinence, persistent use of condom and being faithful to a single lifetime partner.

Attitude – is a disposition to respond favorably or unfavorably towards some person, thing, event, place, idea or situation (Wortman, 1992).

Young adulthood- refers to the twenties (Rathus, 1986).

Prevalence rate - The percentage of the population with the disease or the total number of cases at a particular point in time divided by the total population times 100 (Wood and et al.,1978).

Incidence rate – Number of new cases of disease occurring during one year and divided by the total population times 100 (McCusker, 1981).

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 What is human sexuality?

We can define human sexuality as the way we experience and express ourselves as being sexual beings. Our awareness of ourselves as females or males is part of our sexuality, as is the capacity we have for erotic experiences and responses. Our sexuality is an essential part of our personalities and lives, whether or not we ever engage in intercourse or in sexual fantasy, or even if we lose sensation in our genitals because of injure (Spencer, 1993).

There are different reasons to study human sexuality, among many Spencer, (1993) indicated personal and social problem, such as sexually transmitted diseases, unwanted pregnancy, sexual harassment, and rape.

Is sexuality really a powerful universal biological desire that can be shaped by socio cultural forces and individual learning or is it more akin to a learned "Script" expressed in physical performance, fundamentally created not just shaped by the socio cultural movement? (Plummer, 1982 as cited by Sharven and Hendrick, 1987).

Many cultures spend an inordinate amount of energy trying to suppress sexual behavior in that narrow time period between puberty and marriage. After marriage sex is required, but it is defined and controlled by convention and even by law (Haste, 1993).

Further more, Sharver and Handrick, (1987) pointed out that sexuality is constantly produced, changed and modified and the nature of sexual discourse and experience changes accordingly. Sexuality is universal in that everywhere it is viewed as important and in need of societal regulation of some sort (Eshleman, 1991).

Society uses reproduction cycle to regulate sex. Taboos may be placed against sexual intercourse during pregnancy, during the menstrual period, immediately following childbirth or through the period of lactation. Eshleman, (1991) continue arguing that special events also serve to regulate sex. Intercourse may be required or forbidden during times of certain festivities, religious ceremonies, weddings, harvest time or the like. Quite clearly, there are no societies, which do not use various means to regulate and control the sexual behavior of their members. In addition to this Posner, (1992) pointed out that sex drive of either sex can be blunted by social circumstances.

The way people define sexual relations reflects the way they manage and control, express or suppress, their sexuality (Haste, 1993). Five models of sexual relations have been identified by Haste, (1993). Here are the two models.

Sex as love - In its ideal form, the mutual sharing of sexuality springs from close personal relations. Snyder (1986) also shares the idea of such type of sexual relation.

Sex as appetite - sex is a pleasurable activity to be enjoyed. It is natural to enjoy sex but it can be made bland and light-hearted by being treated at the same level as a good meal or a good cigar (Haste, 1993). Posner, (1992) further elaborated that to Swedes sex is much like eating or driving, activities that, subject to occasional

deflection by interest group pressures, a society regulates only to the extent that they endanger third parties.

2.2 What is HIV/AIDS

HIV stands for Human Immunodeficiency Virus. HIV is a sexually transmitted disease. Like some other sexually transmitted diseases, it can also be transmitted through blood and during pregnancy (Berer,1993). More specifically Stroebe and Stroebe, (1996) indicated that the virus is transmitted by the exchange of cell-containing the virus, notably blood, semen and vaginal secretions.

HIV is a new complex virus. No one knows how it evolved into its present form. Before anyone knew it existed, it was being passed from one person and country to another and had spread worldwide (Berer, 1993).

Historically as Berer, (1993) identified, the incidence of HIV goes back as far as 1959. "The earliest cases of people who died of HIV-related illness were identified in the 1980s from stored samples of tissue and fluids. They include a seafarer from England, who died in 1959; a teenager boy from the U.S.A, who died in 1969; a sailor, his wife and their youngest daughter from Norway, who began to develop HIV disease in the mid-1960s and had all died by 1976; and a blood donor from 1959 in Zaire. No one understood at the time why these people were ill and died"(P.6).

HIV is mainly transmitted through: Unprotected sexual intercourse, both vaginal or anal; infected blood or blood products given by transfusion or injection; sharing or re-

using injection drug equipment containing infected blood without cleaning in between uses, pregnancy and possibly child birth (MOH, 1998;CAHB, 1999; Fumento, 1993;Berer, 1993). As Berer, (1993) indicated in the coming years, 90 percent of new HIV infections will occur through unprotected sexual intercourse.

AIDS is a tragic illness which destroys the body's natural defense against disease and infection (Humffman, 1991). AIDS stands for Acquired Immune Deficiency Syndrome. Immune deficiency means that the immune system is being prevented from functioning. A syndrome is a group of symptoms or illness originating from one cause, in this case HIV (Spencer, 1993; Berer, 1993).

A virus called HIV causes AIDS. Once HIV enters into the blood stream, it travels to other parts of the body. The immune system reacts with the formation of antibodies. These antibodies do not play a protective role as they do in more familiar virus infections. They can be used as indicators of the presence of the virus. These antibodies can be detected in the blood serum by simple tests, 2 weeks to 3 weeks after infection Individuals who have developed the antibodies are said to be seropostive (Stroebe and Stroebe, 1996).

The period between contracting the virus and developing the symptoms of AIDS is highly variable. Some individuals develop the symptoms quite quickly, whereas others remain free of symptoms for as long as 8-9 years. The average incubation interval is now thought to be 7-10years (Spencer, 1993; Berer, 1993; Stroebe and Stroebe, 1996)

2.3 Opinion of people on HIV/AIDS

Since its discovery in 1981,AIDS has been the source of great fear and controversy (Royse, 1987). Rational and irrational fears have surfaced (Denney and Quadgno, 1992). Many people today are doubtful about the mode of transmission. For instance Tsehaynesh and Solomon, (1998) identified some wrong conceptions and speculations about HIV/AIDS transmission such as saliva, body contact and air droplets.

Some people think saliva and tear, toilet seats can transmit the virus, others think that mosquitoes can carry disease in their blood, so they can transmit HIV (Huffman, 1991; Fumento, 1993). In 1985 more people in U.S.A believed that there was a risk of contracting AIDS by eating food prepared by a person with AIDS (Simkins and Kushner, 1986). In 1988 thirty percent of Americans believed that insect bites could transmit the disease; 29 percent thought you could get AIDS from a drinking glass, 25 percent saw a risk in contracting AIDS by coughs if sneezed on (Huffman, 1991). Fortunately, there is no evidence that HIV can be transmitted through casual contact. It does not seem to enter the body across skin by touching, hand shaking, sharing eating utensils, sneezing or living in the same household (Curran; et al. ,1988 as cited by Stroebe and Stroebe, 1996).

2.4 Global and regional picture of HIV/AIDS

Sexually transmitted infections (STIs) are a major public health problem in all countries, but are specially so in developing countries where access to adequate diagnostic and treatment facilities are very limited or non existent (Fikru, 2000).

The global incidence of STIs has recently been estimated at 333 million, on average an estimated 685,000 people are infected every day with STIs. STIs are responsible for up to 15% of the disease burden in urban populations in developing countries. In tropical communities with a high prevalence of STIs, these diseases rank only second to malaria in their socio economic impact (Berer, 1993).

The prevalence of HIV in some African countries is now 20-30 percent among sexually active adults (Kidane and Bereket, 1995). Globally 33.6 million people were living with HIV/AIDS and out of these 23.3 million people were living with HIV/AIDS in Sub-Saharn Africa at the end of 1999 (ADF, 2000).

Currently statistics indicate that two decades since the epidemic surfaced, sufficient actions have not been taken to mitigate the spread of the disease. The result is millions of new infections and unnecessary suffering and death. In 1999 alone, it was estimated that out of 5.6 million newly infected adults and children 3.8 million were found to be in Sub-Saharan Africa (ADF, 2000).

2.5 AIDS in Ethiopia

With 54.9 million people, Ethiopia is the third most populous nation in Africa next to Nigeria and Egypt (Eyob; et al., 1996). The Ethiopian population accounts for only one percent of the worlds population, but nine percent of the global HIV cases are found in this country (Sehin, 2000).

HIV probably started to spread in Ethiopia in the early 1980s. The first evidence of HIV infection was found in 1984. The first AIDS cases was reported in 1986 (MOH, 1998). According to a joint UNAIDS/WHO estimate, there were 3 million HIV-positive Ethiopians at the end of 1999. Since, a large segment of the population has no access to health care, most AIDS cases actually go unreported (Sehin,2000). More than half of the population relies on traditional medicine as complementary or substitute to the modern health care system (Abdulhamid, 1998). In addition to this, Sehin (2000) pointed out that even where health care is accessible, patients often do not seek hospital care because of the stigma attached to AIDS and patients may die of other disease before being diagnosed with HIV. Therefore the magnitude of the problem cannot be discerned fully.

Abdulahamid, (1998) found out the impact of AIDS on health care service to be scaring. The out come of the study from sample hospitals will be depicted as follows:

1. *Haile Mariaim Mamo Hospital in Nazareth*- This hospital has 143- beds, 54 of the patients are HIV positive;
2. *Wonji sugar Estate Hospital*- It is a 190-bed hospital. In this hospital 120 in-patients were identified to be HIV positive;

3. *Zewditu Hospital in Addis Ababa* -This Hospital is a 173-bed hospital. It was possible to identify 120 in-patients as HIV positive test.

This would leave an insufficient number of beds for patients for all other cases. Hospital bed occupancy is an indicator of the burden that the health system carries (MOH, 1998). Besides, the above stated information may give some idea how the disease HIV spread in the country.

AIDS will affect the economic development of the country in a number of ways. The loss of young educated adults in their productive years of life will certainly affect overall economic out put (MOH, 1998), because the replacement requires additional expenses for recruiting and training workers.

Agriculture accounts for nearly half of all production and 85 percent of employment in Ethiopia (MOH, 1998). Healthy and growing rural economy is vital to Ethiopia's future development. According to MOH, (1998) report HIV infection was low in the rural areas, but it is likely to grow substantially in the future due to the much higher rate in urban areas and the fact that nearly one-quarter of farmers have sexual relationships outside of marriage. In general, AIDS in Ethiopia will have a large social, psychological, demographic and economic impact on both the individuals and societies (PFDRE, 1998).

2.6 INTERVENTION STRATEGIES

The major mode of HIV transmission in Africa is through heterosexual contact which accounts 90 percent of the infection (Fumento, 1993) and 87 percent in Ethiopia (MOH, 1998) .As a result, it is this area that interventions have to concentrate.

Thus, promoting abstinence before marriage, to be faithful to one partner and promoting the use and availability of condoms were indicated as important intervention strategies to stop the spread of HIV (MOH, 1998; Sehin 2000; Mwambu, 1997; Spencer, 1993; Crooks and Baur, 1990)

2.6.1 Abstinence Standard

Abstinence is a type of decision an individual takes voluntarily not to have sexual intercourse (Ellis, 1984). Nevertheless, different opinion was endorsed on this standard. Posner, (1992) states "...Some might urge that people be encouraged to abstain from sex until marriage and then refrain from all extra marital sex; but few would think it feasible, or even desirable in principle to eliminate non marital sex" (p165) This idea is supported to a certain extent by Recss, (1980) as quested by Collins, (1988) that the proportion of people in the United States who agree with abstinence standard is about 20 to 80 percent depending on the age and other characteristics of the sample being studied.

Researchers find that many young people who abstain from premarital coitus do so for religious or moral reasons that encourage abstinence-Until marriage. Other

reasons including fear of being caught of disease (Crooks and Baur, 1990; Posner, 1992; Spencer, 1993).

Crooks and Baur (1990) added another possible reason for abstinence among young people that is the individual interest on the emotional aspect of a relationship. Denney and Quadagns, (1992) identified that abstinence is considered as a premarital sexual relation standard among adolescents in U.S.A; regardless of the circumstances for both male and female.

2.6.2 Consistent Use of Condoms

Different researchers suggest condom as a means to prevent HIV/AIDS transmission including the Ethiopian Ministry of Health. Above all, the Federal Democratic Republic of Ethiopia's policy on HIV/AIDS clearly portrays the role of condom as intervention strategy. So far, an effort to slow down the spread of HIV is by changing sexual behavior. One of the behavioral changes to stop further spread of HIV infection is condom use even if it does not completely eliminate the risk of transmission (Kidane and Breket, 1995). The risk of becoming infected is considerably reduced by the use of condoms (Denney and Quadagns, 1992). However, studies of AIDS infection in HIV suggest that condoms are not completely safe (Stroebe and Stroebe, 1996).

By Contrast, condoms are still of limited use in combating the AIDS epidemic. Fumento (1993) pointed out that instead of putting up condom posters on subway walls we need to use teams of ex-addicts to attack drug addiction in the streets.

Fumento (1993) continues saying, educational posters on condoms are an easy, cheap way of pretending to be doing something important. It makes expensive solutions, like putting more addicts into treatment programs, seem less necessary. In line with this, Mukkuni (1997) studied the impact of condom promotion on sexual behavior in Zambia and it was found an indisputable correlation between condom promotion and condom use.

The social context of a request for condom use not only can convey a message of suspicious past sexual behaviors but also represent a possible change in the power and decision making balance in the relationship (Cochran and Mays, 1989). Perceived decrease in sexual satisfaction, inability to negotiate condom use with partner, social barriers (religion), partner refusal, belief that AIDS is not a problem and belief that condoms are needed only for contact with prostitute are some reasons for not using condoms (Adewale, 1997; Daniel, 1996; Tsehaynesh and Solomon, 1998). The most common drawback to condoms is probably that a high percentage of men and a small percentage of women feel that condom reduces sensitivity of the reproductive structure (Denney and Quadagno, 1992).

2.6.3 Faithfulness

Ethiopian HIV/AIDS policy encourage fidelity that emanate from the societal cultural norm based on the one-to-one sexual relationship in marriage bond (PFDRE, 1998). However Ministry of Health recognizes faithfulness apart from marriage as intervention strategy to reduce the risk of transmission of HIV through heterosexual contact (MOH, 1998).

Mosambu (1997) and Fontanet and Tilahun (1999) found out their subjects clearly indicated that faithfulness is one way to avoid sexual transmission of HIV/AIDS. To Synder (1996) being faithful to a partner imply ones commitment to the sexual partner.

2.7 HIV/AIDS Policy in Ethiopia

Governmental policy and law play critical roles in programs aimed at controlling the spread of HIV/AIDS. Government actions can either promote or hinder efforts to reach the goal of controlling HIV/AIDS communications (UNAIDS and Pennstate, 1999).

Ethiopia HIV/AIDS policy issued in 1998, is aimed at coordinating intervention activities of governmental, non governmental organizations and other partners. Accordingly, the issuance of HIV/AIDS policy which is part and parcel of priority in order to direct the various efforts in mitigating the impact of AIDS in Ethiopia (PFDRE, 1998).

The Ethiopian HIV/AIDS policy give due emphasis for prevention and provision of care and support to people living with HIV/AIDS (PFDRE, 1998).

General intervention strategies, in Ethiopia HIV/AIDS policy, are provision of information, education and communication. Under specific intervention strategies, the policy is reflecting fidelity as a safer sex practice to be promoted. However, for individuals failing to comply with this norm for various reasons an alternative option of

providing education on the proper use of condoms will be delivered (PFDRE, 1998). Unfortunately, nothing was said about abstinence.

2.8 Prevention Effort in Ethiopia

Prevention means taking appropriate measure to stop the transmission of HIV to uninfected individuals (PFDRE, 1998). Preventing HIV transmission is the key to the solution of the AIDS epidemic (Berer,1993). The impact of AIDS will be very serious in Ethiopia if HIV infection continues to spread rapidly. However, there are several things that can be done to slow the spread of HIV (MOH, 1998). With no known cure for AIDS and medical consensus that vaccine is several years away, human service professionals will continue to have important role in educating the ill informed (Royes; et al., 1987).

For psychologists, AIDS present a unique and complex challenge. Although AIDS is a physical disease, in most instances its transmission and spread is dependent on the volitional behaviors of people. The majority of individuals participating in behaviors that involve intimate contact with HIV infected bodily fluid, such as blood, semen, and possibly vaginal secretions can be prevented (Cochran and Mays, 1989).

Fontanet and Tilahun (1999) found out that there is no infection between the ages of 6 and 13 years. They suggested that modes of transmission other than heterosexual and mother-to-child did not play any important epidemiological role in HIV transmission.

According to the Ministry of Health report the major mode of transmission is through heterosexual contact and it is in this area that interventions have to be concentrated. The intervention includes promoting abstinence before marriage, faithfulness to one partner, and promoting the use and the availability of condoms (Brooks Gunn, 1989; Sehin, 2000; MOH, 1998).

Nevertheless, the practice of these intervention strategies as prevention of HIV is not as such adequate among sexually active young people. The information about the intervention strategies exists in abundance but the desired behavioral change is not attained yet. (Beyene ; et al., 1997; Ashebir, 1995).

2.9 RESEARCH ON HIV/AIDS AWARENESS

At present time, the best hope for curtailing the epidemic spread of AIDS is through education and behavioral changes. This is because the AIDS virus is transmitted almost exclusively by the behavior that individuals can modify (Crooks and Baur, 1990). It is fairly certain that the majority of AIDS cases in Africa arise from sexual transmission (Fumento, 1993). Hence, health education officials are hopeful that educational programs aimed at encouraging people to engage in safer sexual practices will be effective in curtailing the spread of AIDS.

World wide, there are several studies on knowledge, attitude and practice of college students towards the Acquired Immune Deficiency Syndrome (AIDS). College

students are often viewed as being at high risk for HIV infection due to their propensity to engage in exploratory behavior and their needs for peer social approval and their sense of non vulnerability (Beyene; et al., 1997; Denney and Quadgno, 1992). In addition to this Eyob (1996) indicated that adolescents will continue to be sexually active with all associated anxieties and risk including sexually transmitted diseases more specifically AIDS.

A study on high school and college age population have indicated that respondents are relatively knowledgeable about AIDS and that few modified their sexual practices out of fear of getting AIDS (Crooks and Baur, 1990)

Colleges have now begun introducing AIDS into their orientations. However, it is not welcomed by collegians (Fumento, 1993). Many colleges went beyond merely providing information. A Dartmouth college, specially organized a group calling itself RAID, for "Responsible AIDS information at Dartmouth," swamped the campus with AIDS reminders (Fumento, 1993).

A study conducted by Tilahun (1997) indicated that AIDS related knowledge was generally adequate, but it is reported that sexual behavior among Gonder Medical College students was not consistent with that knowledge. On the other hand Beyene; et al., (1997) pointed out that even though a high risk sexual behavior with an insufficient knowledge of AIDS was found among college students, most studies show that college students are responsibly well informed about AIDS but are reluctant to change their sexual behavior unless the threat of infection is

personalized. Beyene; et al., (1997) continue saying the largest proportion of sampled students (93.7 percent) responded by indicating sexual contact to be the major mode of AIDS transmission. On top of this, Beyene; et al., (1997) concluded that students' attitude towards the disease and their protective behavior didn't match with the relative high level of knowledge they have. Ashebir, (1995) also indicates that changes in behavior due to advent of AIDS is very minimal revealing that the message-based AIDS education used so far has been necessary but not sufficient to stop sexual transmission of HIV among TTI students in Ethiopia.

In Simkin and Kushner (1986) survey at the University of Missouri came up with high level of knowledge about HIV/AIDS but there has been little change in expressed attitude. By and large, these studies can tell that the information about HIV/AIDS exists and information is not scant among collegians.

2.10 RESEARCH ON INTERVENTION STRATEGIES

The extent of unprotected sex on college campuses remains unknown. However, evidence suggests that the threat of AIDS has not greatly affected sexual practices among collegians (Hemandez and Smith, 1990 as cited by Spencer 1993). In addition Do Buono; et al, (1980) as quoted by Collins (1988) made a survey of college women in the Northeast of U.S.A who attended a student health service clinic and found little drop of incidence of coitus with multiple partner. On the other hand, Caroll (1981) as quoted by Collins (1988) indicate fewer than half of a sample of new England college students has changed their sexual behavior because of the advent

of AIDS. Another survey of University of Massachusetts students revealed that some 70 percent had not changed their sexual practices in any way; despite the threat of AIDS (Johnson,1990 as cited by Spencer, 1993).

A survey of some 5500 Canadian freshmen at 51 colleges found them to be quite aware of the existence of AIDS and the ways in which HIV is transmitted. Nevertheless only one man in four (24.8 percent) and one women in six (15.6 percent) used condoms regularly (Mac Donald; et al, 1990 as cited by Spencer, 1993).

There have been several intervention efforts to induce people to modify their AIDS-risk behavior. However, Stroebe and Stroebe (1996) noted few of these interventions have stringently derived from social and psychological theories of attitude and behavior change. Although providing people with information about AIDS risk and motivating them to avoid unsafe sexual behavior is a necessary condition for behavior change, it may not be sufficient for a reduction in the risk of AIDS (Fisher and Fisher 1992 as cited by Stroebe and Stroebe, 1993)

Although young people have been increasingly exposed to AIDS prevention message, the impact of the threat of AIDS on their sexual behavior appears mixed (Spencer, 1993). As survey of undergraduate student at an Oregon University discovered that most students, while reasonably well informed about AIDS did not feel at risk for the disease, where not inclined to communicate with one another about risk of AIDS prior to sexual activity with new partner, and frequently engage in sex

without using a condom (Crooks and Baur, 1990). Still another survey of undergraduates at a university in Southern California revealed that having accurate knowledge about how AIDS is transmitted generally did not induce these individuals to engage in fewer or safer acts (Baldwin and Baldwin, 1988 as cited by Crooks and Baur, 1990).

The traditional sacred norm, according to Eshleman (1991) in regard to sexually transmitted diseases (STDs) was one of avoidance through sexual abstinence apart from marriage. The traditional social norm toward STDs, and more specifically towards AIDS suggests the use of condoms and the exclusive confinement of sexual relation to a lover or marriage oriented partner (Brook-Gunn; et al, 1989; Crooks and Baur, 1990; Eshleman, 1991; Berer, 1993; Spencer, 1993; MOH, 1998). Similarly, Beyene; et al., (1997) suggested prevention of sexual transmission of HIV requires either abstinence from unprotected sexual intercourse or modification of relevant behaviors.

According to Mwambu, (1997) with regard to the application of preventive measures, among the youth in Dar es Salam, 67.67 percent of them neither used condoms or discussed with their partners about preventive measures, 30 percent of all respondents mentioned abstinence as a resorted preventive way in order to avoid getting HIV infection.

Among the sexually active students of Gonder medical school, almost all know that using condoms is one strategy for minimizing the risk of contracting HIV, but only a

third of the students reported using them (Tilahun, 1997). On the same population Kidane and Bereket (1995) conducted a survey of condom use and found out that 40 percent of the students to have practiced sexual intercourse and half of the sexual contact to have been with commercial sex workers or with casual individuals. Among these 75 percent did not use condoms.

Tsehaynesh and Solomon (1998) pointed out that a considerable number of sexually active out-of school youth are not practicing safe sex; and even if they have information about HIV/AIDS it was not strong enough to bring about any significant behavioral change.

Eventually, Korukiiko (1997) suggested reasons for persistent risk behavior, such as poverty, drunkenness, lack of decision making by women on their sex life, lack of reaction, peer pressure, unemployment, separation of spouses in search of employment and lack of emphasis of some good traditional values.

2.10.1 GENDER AND INTERVENTION STRATEGIES

Numerous authors have demonstrated gender difference towards sexual behavior and attitude. According to Kenrick (1984) as quoted by Sharver and Hendrick (1987) men in the United States seem to be more sexually driven, as judged by various criteria, such as sexual deviation, interest in promiscuous affair, and so on. Moreover Daly and Wilson (1979) as cited by Sharver and Hendrick (1987) indicate that males are twice as likely to engage in extramarital liaisons.

Posner (1992) state that "There is much evidence that women in fact have (on average, of course, not in every case) a weaker sex drive than men" (P.91). Some Feminists believe as indicated by Posner (1992), the greater sex drive of men than of women is a cultural phenomenon, but their argument is weak. Denney and Quadagno (1992) added, "...males are more interested in sex in general than are females." (p.300). A study by Wikking in Oman quoted by Archer and Lloyd (1995) pointed out that "... men are perceived to have strong sexual drive that is difficult to control and requires frequent release," (P.119). Obviously, this research implies that men perceived themselves, as they are not capable of controlling their sexual desires, this attitude might have a strong influence upon the intervention strategies.

Denney and Quadagno (1992) suggested that men and women engage in sexual intercourse for different reasons. It has been said that men use love to get sex, but women use sex to get love. De Lamater (1987) as quoted by Denney and Quadagno (1992) suggests that the goal of women tends to be to express affection in a committed relationship, whereas men tend to have a more recreational orientation, with the goal being physical gratification. On the contrary, Eshleman (1991) pointed out that considerable data exists to show that men and women appear to be very similar in the sexual needs, drives and responses

One common risk reduction behavior advocated for the control of sexually transmitted disease and HIV infection is consistent condom use among sexually active people. The decision whether or not to use condom is noted to be influenced by several factors of which one is gender (Addewale, 1997; Kalambayi, 1997;

Mesganaw and Fekadu, 1996). Moreover, females were more likely to name abstinence and faithfulness as sexually transmitted diseases prevention methods (Temin, 1999). For girls the development of sexuality involves the integration of sexual activity into an existing capacity for intimacy and emotional involvement (Steinberg, 1993)

2.10.2 AGE AND INTERVENTION STRATEGIES

Young men are more at risk than older ones: about one in four people with HIV are a young man under the age of 25 (UNAIDS, 2000).

Different research in Ethiopia indicate that the age range in which young people become sexually active is between 15 to 19 years (Mesganaw and Fekadu, 1996; Tsehaynesh and Solomon, 1998; Eyob; et al., 1996).

It has been long known that younger and older adults have quite different attitude about abstinence (Reiss, 1967 as cited by Eshleman, 1991; Collins, 1988). When respondents' age is analyzed in the study referred above premarital sex was considered " always wrong" or " almost always wrong" three out of five respondents who were older than age 50, two out of five respondents age 30 and 49 and only one in five age 18 to 19.

Another study in Utah schools found a modest effect towards greater acceptance of abstinence for older students, but the junior high school non- virgins showed more permissive attitude (Kimmel and Weiner, 1995).

2.10.3 EDUCATIONAL LEVEL AND INTERVENTION STRATEGIES

Knowledge of transmission and prevention of sexually transmitted disease increased with increased educational level (Daniel, 1996). Studies from other African countries have also shown that more educated groups have good knowledge of HIV/AIDS. On the contrary, some studies showed that the sexual transmission of HIV/AIDS to be low but still positively associated with educational level (Forster, 1989 as cited by Daniel, 1996). They added that neither condom use nor monogamy increased significantly with increased educational level. Mukkuni (1997) also shares this idea.

Crooks and Baur (1990) emphasize that there is higher premarital coital rate among men than among women. Approximately three out of four males from the total sample stated that they had participated in sex before marriage. The frequency of this behavior was significantly related to education, with 67 percent of college educated, 84 percent of high school educated, and 98 percent of elementary school educated men reported premarital cautious.

CHAPTER THREE

3. DESIGN OF THE STUDY

3.1 Subjects

A pilot study, the objective of which was to test and improve instrument, was carried out on 60 students from 4th, 3rd, 2nd and 1st year students of Addis Ababa University Sidist Kilo campus. The subjects were 12 (Male=9 and Female=3) from 4th year, 17 (Male=11and Female = 6) from 3rd year, 14 (Male = 11 and Female = 3) from 2nd year and 17 (Male = 10 and Female = 7) from 1st year students. They were randomly selected after stratification on their gender and year of stay in the campus.

The main study was conducted on a random sample of 450 students selected from one faculty and nine out of eleven departments in Bahir Dar University (BDU). The total number of questionnaires distributed was 450, nevertheless 8 were discarded, 6 thirty years old and above were excluded and 5 were missed.

The Faculty of Engineering was excluded purposely, because the number of female students was very small. As a result, Faculty of Education was considered as the population for this study. To obtain the sample departments, the name of the 11 departments were put into alphabetical order and were assigned consecutive numbers 1 to 11, and by using random numbers nine departments were selected (See Appendix B). Subjects were also selected in the same way except that males

and females were listed and random selection was made on the basis of the proportions of males and females in the respective batches.

3.2 Instruments

The attitude scale

To examine attitudes of students towards intervention strategies relevant to HIV/AIDS infection, a Likert – type, five point scale ranging from strongly agree to strongly disagree was used.

The scale was composed of 46 items (or statements) which were selected from four different sources: 15 items from Adewale (1997) and WHO (1994) on condom and abstinence, 31 items also taken from Syder's; et al., (1986) attitude towards sex with and without commitment and items from Elisabeth's; et al., (1999) attitude about sexual behavior.

The main criterion for selection was based on unambiguousness of the statements with respect to the local conditions, on item analysis and on the appropriateness of the items as judged by graduate students of psychology.

After the statements were checked for unambiguousness 14 judges were then asked to determine the appropriateness of each item. The judges were first and second year graduate students of psychology. They classified the items under the three

dependent variables (Abstinence, Faithfulness and Condom). Items that were agreed upon by at least 95% of the judges were selected.

The scale was administered to the pilot sample and was found to be moderately reliable (using coefficient alpha $r \geq .85$). For the three dependent variables the reliabilities were .85, .81 and .85 for abstinence, faithfulness and condom respectively. Reliabilities of attitude scale measures are generally slightly lower, but values of .85 - .90 are common (Brown, 1983). Item analysis was also carried out and mean score of the upper 27% and the lower 27% groups on each item were computed using t – test (Nachmias and Nachmias, 1987; Anastasi, 1976; Edward, 1957). All attitude statements which discriminated the two groups statistically at ($p \leq .05$) were selected. Consequently, 13 items were discarded and 33 statements were used in the final scale. The reliabilities for the variables, that is, abstinence, faithfulness, and condom were found to be .86, .84, and .87 respectively. The final scale was moderately reliable (using Cronbach alpha, $r \geq .86$). (See Appendix F)

3.3 Data Collection Procedure

In the pilot study, the attitude scale was administered in one session for each group. The respective instructors conducted the session during regular class time. On the basis of the pilot data, the instrument was improved. Ambiguity, instruction, conceptual and some grammatical inconsistencies were the ones on which improvement was made.

Given the sensitive nature of the domain of inquiry and the paramount importance of subjects' honest response, complete effort to ensure anonymity was made. Once the questionnaire was completed each participant sealed his/her questionnaire in unmarked envelope and dropped it in a bag prepared for this purpose.

The data for the main study was collected by using the refined or improved questionnaire. After the samples were identified the following steps were taken to collect the data. Short briefing was given to the instructors about the purpose of the study, the content of the questionnaire, the way the questionnaire is filled and returned as well as the complete anonymity of the respondent. By so doing the concerned instructors in the University explained and encouraged the informants to cooperate in filling the questionnaire and give sincere and honest responses. For data collected during regular class time forty minutes was given to complete the questionnaire.

3.4 Data Analysis

Three – three way analysis of variance were carried out for the three dependent variables, separately. These were

1. Abstinence standard

   2 (Gender) × 2 (Age) × 4 (Educational level)

2. Faithfulness

   2 (Gender) × 2 (Age) × 4 (Educational level)

3. Condom

   2 (Gender) × 2 (Age) × 4 (Educational level)

Since the aim is to look into differences among the various groups, analysis of variance is preferred over the others. As Kerlinger (1986) indicated, for the designs with more than two independent variables, employing analysis of variance may enhance the ability to understand complex psychological and educational realities. Moreover, analysis of variance is said to be robust in that the results are little affected by violation of one or more assumptions (Hays, 1981; Best and Kahn, 1993; Kothari, 1995). Preliminary statistics (Mean and standard deviations) were computed for the total sample, for each dependent variable. In psychological and educational circles 5% alpha level of significance is often used as a standard for rejection (Best and Kahn, 1993; Sarantakos, 1998).

Thus, α = .05 was used for almost all significance tests in this study. In addition, items on the rating scale were coded such that higher scores were more favorable and vice versa (Nachmias and Nachmias, 1987).

CHAPTER FOUR

4. RESULTS OF THE STUDY

4.1 Sexual Abstinence

The research question entertained in this section was; are there differences in attitude towards sexual abstinence as feasible intervention strategy due to gender, age and educational level? The dependent variable of the study was sexual abstinence and ANOVA was employed using gender, age, and educational level as independent variables. Table I shows the number of observations, means and standard deviations of sexual abstinence for each of the various treatment combination.

Table I: Number of Observations, Means and Standard Deviations for Sexual Abstinence by Age, Gender and Educational level

		1st Year			2nd Year			3rd Year			4th Year		
		N	$\overline{X}$	SD	N	$\overline{X}$	SD	N	$\overline{X}$	SD	N	$\overline{X}$	SD
Teenager	M	46	36.98	7.27	20	36.80	6.30	6	33.67	5.16	-	-	-
	F	39	39.28	6.38	11	40.82	4.92	4	47.25	1.71	-	-	-
Young Adult	M	35	38.40	11.36	87	36.08	5.91	82	35.43	6.30	64	36.91	6.25
	F	5	36.00	5.79	7	42.43	4.20	8	40.13	5.84	17	40.53	6.33

The highest possible score in Abstinence is 50.

Table I shows that both teenager and young adult females score high on the attitude scale than males did, along educational level. The only exception were first year young adult males who seem to have slightly higher mean ($\bar{x}$ = 38.40) than females ($\bar{x}$ = 36.00).

Table II presents the results of the analysis of variance. This analysis shows a non-significant age and educational level main effect. In other words, teenagers and young adults; and educational level of the respondents do not appear to differ significantly in their attitude towards abstinence as HIV/AIDS intervention strategy. However, teenagers tend to have a slightly higher mean score ($\bar{x}$= 38.17) than young adults ($\bar{x}$ = 36.84). See appendix C

Table II: Three way ANOVA Summary table for Abstinence

Source	SS	df	MS	F	P
Age(A)	35.663	1	35.663	.772	*NS*
Gender(G)	949.746	1	949.746	20.566	<.0001
Educational level(E)	73.793	3	24.598	.533	*NS*
A x G	112.673	1	112.673	2.440	>.05
A x E	70.194	3	23.398	.507	*NS*
E x G	446.528	3	148.843	3.223	<.05
A x G x E	253.635	3	84.545	1.831	>.05
Error	19164.700	415	46.180		
Total	21106.932	430			

The gender main effect was statistically significant. Closer examination indicates that female respondents substantially score favorably ($\overline{x}$ = 40.19) than males did ($\overline{x}$ = 36.44) on the attitude scale for abstinence. The strength of association between gender and abstinence were determined, but it was found that the influence of gender on abstinence were marginal (ω^2 = .045 meaning 4.5% of the variability in abstinence is accounted for by gender). The analysis further indicates non-significant first and second order interaction effects except on first order, which is Gender – by – Educational level (GxE). This interaction produce a meaning that the trend of attitude towards abstinence across educational level seems to differ significantly for males and females and Figure I depicts this. Likewise, the combined influence of gender and educational level on abstinence were examined, however it was found to be very small (ω^2 = .015).

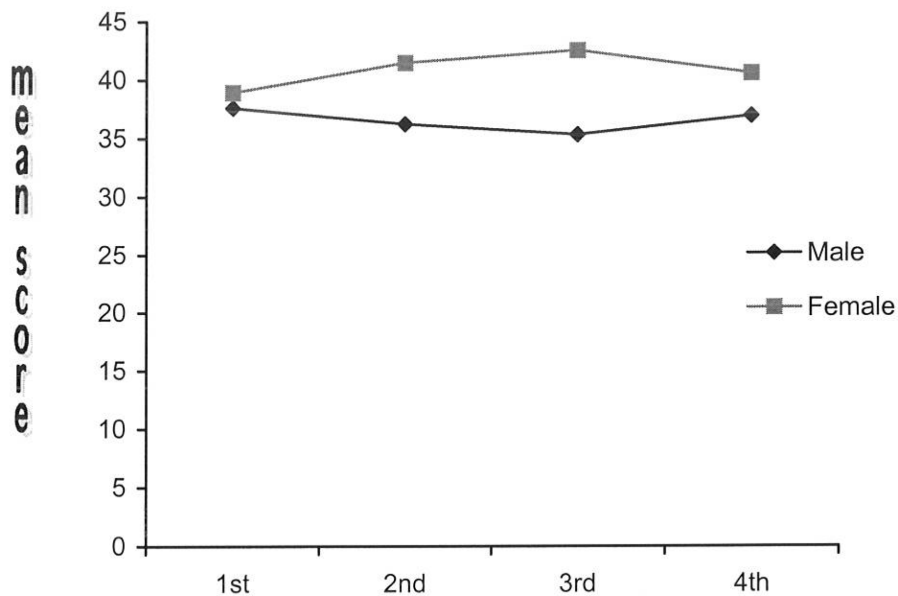

Figure I. Gender – by – Educational Level Interaction

Figure I. shows Gender – by – Educational level interaction and the interaction was ordinal. At each educational level (1st year through 4th year) females had substantially high mean attitude score than their male counterparts. However, the magnitude of the difference varied from one educational level to another. Female respondents tend to score higher and higher as it goes from first year through third year and tend to decrease at fourth year. Completely, the opposite was true for males.

4.2 Use of condoms

The second research question initially designed was; are there differences in attitude towards use of condom as feasible intervention strategy due to age, gender and educational level. In this case, the dependant variable was condom and ANOVA was used taking into account gender, age and educational level as independent variables. Table III. shows observations, means and standard deviations of attitude towards condom use for each of the various treatment combinations.

Table III: Number of Observations, Means and Standard Deviations for

Condom by Age, Gender and Educational level

		1st Year			2nd Year			3rd Year			4th Year		
		N	$\overline{x}$	SD	N	$\overline{x}$	SD	N	$\overline{x}$	SD	N	$\overline{x}$	SD
Teenager	M	46	38.83	7.05	20	33.95	8.73	6	33.83	8.59	-	-	-
	F	39	39.69	7.58	11	34.82	5.33	4	38.00	9.63	-	-	-
young Adult	M	35	37.89	6.49	87	36.80	7.11	82	38.22	7.56	64	40.36	7.70
	F	5	36.80	3.77	7	34.86	7.06	8	36.38	9.24	17	38.18	6.53

* The highest possible score in Condom is 60

As shown in Table III teenager females seem to score high on attitude scale of condom use compared to that of male counterparts. On the other hand, young adult males seem to score high than females did. The result of analysis of variance of the attitude towards condom use is shown in Table IV below.

Table IV: Three way ANOVA Summary table for Condom Use

Source	SS	df	MS	F	P
Age (A)	2.951	1	2.951	.054	NS
Gender (G)	1.824	1	1.824	.000	NS
Educational level(E)	514.154	3	171.385	3.164	<.05
A x G	103.266	1	103.266	1.907	>.05
A x E	142.896	3	47.632	.879	NS
E x G	16.588	3	5.529	.102	NS
A x G x E	30.525	3	10.175	.188	NS
Error	22475.985	415	54.159		
Total	23288.189	430			

The result of the analysis indicates that the educational level main effect is statistically significant. That is, first, second, third and fourth year students as groups seem to differ significantly in their attitude towards use of condom. Employing Tukey's multiple – comparisons test (Hays, 1994) first year students were found to

score significantly higher on the attitude scale than did second year students (mean score were 38.75 and 36.06 respectively). Likewise, fourth year students were found to score significantly higher ($\overline{x}$ = 39.90) than did second year students ($\overline{x}$ = 36.06), See appendix D. In addition to this, the strength of association between educational level and condom use showed low, that is only 2.1% of the variability of attitude towards condom use accounted for by the educational level ($\omega^2 = .021$). Teenagers and young adults; females and males were not statistically different in their attitude towards condom use. Very small or marginal mean difference were observed between teenagers ($\overline{x}$ = 37.71) and young adults ($\overline{x}$ = 38.08); females ($\overline{x}$ = 37.92) and males ($\overline{x}$ = 37.98), See appendix D

Table IV. shows that there were no interaction effect at all. That is, the combination of any two and the three independent variables together do not have a significant influence on the attitude towards condom use.

4.3 Faithfulness to sexual partner

The last research question was interested to investigate differences in attitude towards faithfulness as feasible intervention strategy for HIV/AIDS. The dependent variable in this case was faithfulness and ANOVA was employed using gender, age and educational level as independent variables. Table V shows the number of observations, means and standard deviations of faithfulness for each treatment combination.

Table V: Number of Observations, Means and Standard Deviations for

Faithfulness by Age, Gender and Educational level

		1st Year			2nd Year			3rd Year			4th Year		
		N	$\overline{x}$	SD	N	$\overline{x}$	SD	N	$\overline{x}$	SD	N	$\overline{x}$	SD
Teenager	M	46	43.72	5.62	20	47.05	3.52	6	43.00	4.82	0	0	0
	F	39	44.08	7.16	11	48.36	4.57	4	49.00	7.79	0	0	0
Young Adult	M	35	42.80	6.24	87	44.52	5.89	82	45.95	5.08	64	48.11	5.30
	F	5	37.60	5.03	7	40.86	7.15	8	50.00	8.43	17	50.47	5.34

* The highest possible score in faithfulness is 55

The result indicated that teenager females score higher than teenager males. In the case of young adults, both females and males score higher across the educational level. This holds true for teenager females only. In the ANOVA used (Table VI) the dependent variable was faithfulness.

In this analysis, the age and educational level main effects were significant. Teenagers and young adults seem to differ significantly in their attitude towards faithfulness as HIV/AIDS intervention strategy. The strength of association between age and faithfulness were (ω^2 = .008). Meaning the contribution of age to faithfulness is less than one percent.

There were also statistically significant differences among various educational levels in their attitude towards faithfulness. To this effect, the Tukey's multiple comparisons test (Hays, 1994) reveal that fourth year students score higher over first, second and

third year students as a group. Likewise, third year students score higher than first year students as a group. The strength of association between educational level and faithfulness is low which is ω^2 = .08. There were no significant difference between female and male respondents in their attitude towards faithfulness (the mean score was 45.92 and 45.38 respectively, See appendix E).

Table VI: Three way ANOVA Summary table for Faithfulness

Source	SS	df	MS	F	P
Age (A)	161.566	1	161.566	4.935	<.05
Gender (G)	52.699	1	52.699	1.610	>.05
Educational level(E)	1378.440	3	459.480	14.034	<.0001
A x G	138.535	1	138.535	4.231	<.05
A x E	361.545	3	120.515	3.681	<.05
E x G	373.139	3	124.380	3.799	<.01
A x G x E	24.714	3	8.238	.252	NS
Error	13587.930	415	32.742		
Total	16078.568	430			

Remarkably, all first order interaction effects were significant. More precisely, the effect of each independent variable (age, gender and educational level) on the dependent variable (faithfulness) is contingent on another independent variable (See figure II, III and IV). In addition, the strength of association between all first order interaction effects and the dependent variable were marginal (ω^2 = .007, ω^2 =. 016 and ω^2 =. 017 for AxG, AxE and GxE respectively).

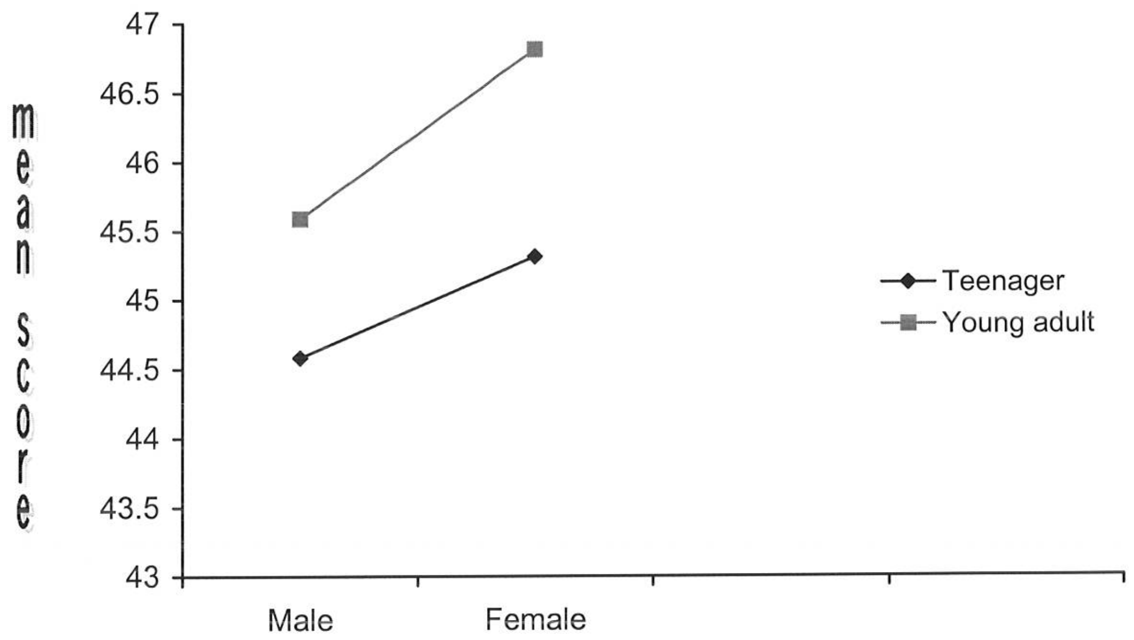

Figure II Age – by – Gender Interaction

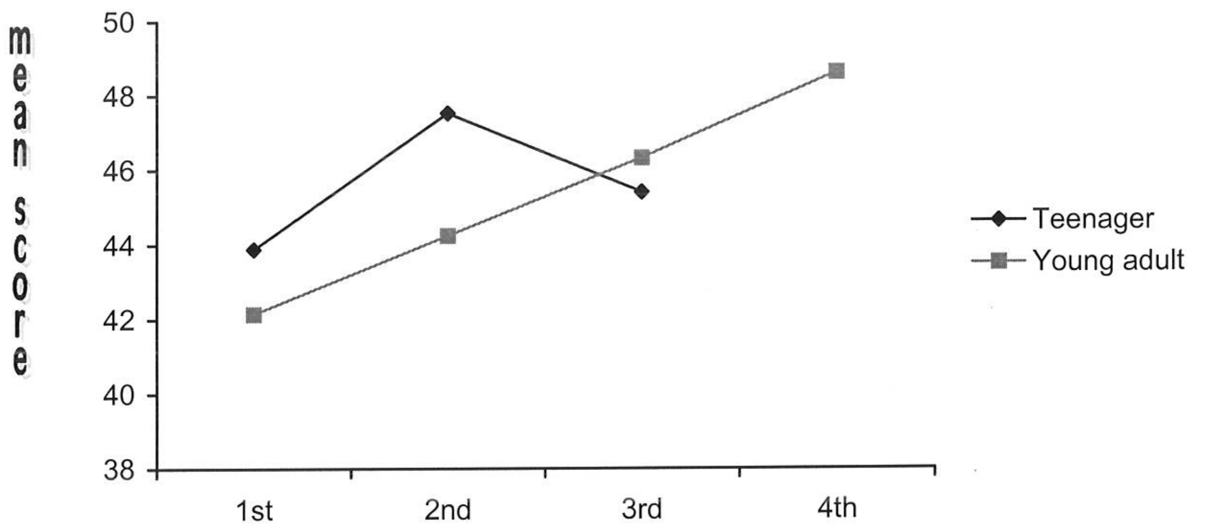

Figure III Age – by – Educational level Interaction

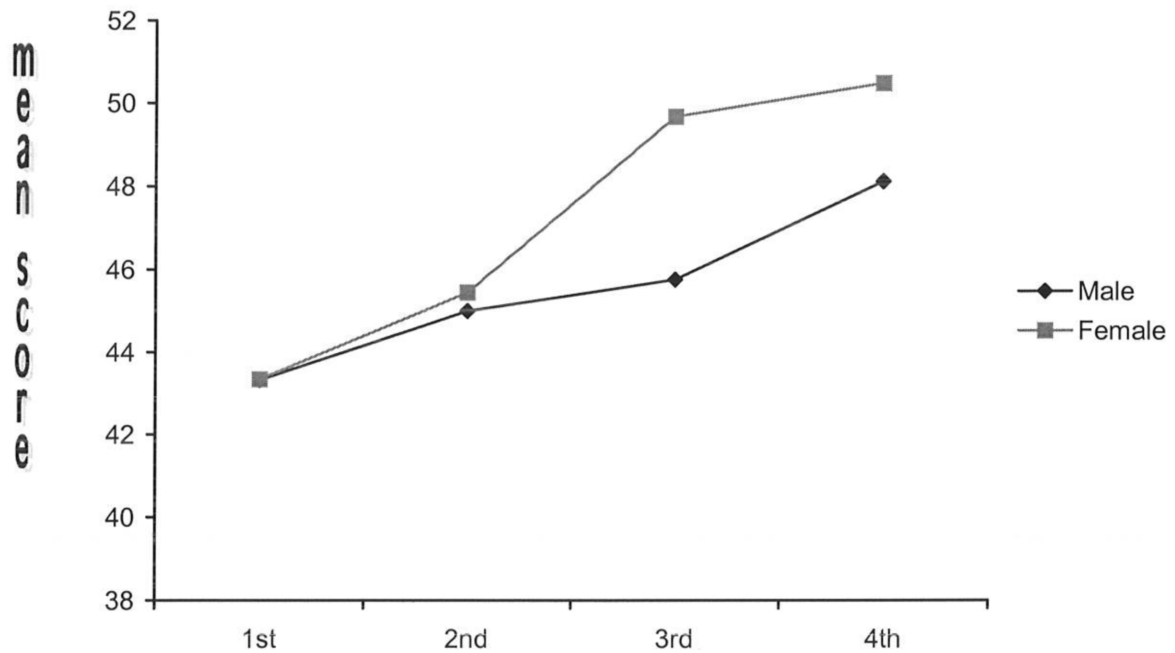

Figure IV Gender – by – Educational level Interaction

In short, the three – three way ANOVAs indicate the following results

1. Significant gender differences in attitude towards sexual abstinence was revealed across different educational level.
2. Significant educational level differences in attitude towards use of condom was observed.
3. Significant age and educational level differences in attitude towards faithfulness was observed.
4. All first order interaction effects were significant for the dependent variable, faithfulness.
5. Significant gender differences in attitude towards sexual abstinence was revealed across different educational level.

CHAPTER FIVE

DISCUSSION

As mentioned in the previous section, results of the study of the first ANOVA (Table II) indicate that teenagers and young adults as a group do not seem to differ significantly in attitude towards abstinence [F (1,415)=0.772 *Ns*]. On the other hand significant gender differences are revealed in this study. Where, female respondents seem to score higher on the attitude towards abstinence than male respondents did [F (1,415)=20.566, p<. 0001]. But, the trend of attitude score on abstinence across educational level appeared to differ significantly for males and females [F (3,415)=3.223, p<. 05]. On the other hand, the first and second order interaction effects were not statistically significant.

The absence of significant age difference is inconsistent with most of the research literature. Kimmel and Weiner (1995), for example, found out a modest effect towards greater acceptance of abstinence for older students, in Utah schools. Reiss (1967) as cited by Eshleman (1991) and Collins (1988) indicated a substantial difference in attitude towards abstinence among different age categories.

Subjects' response to the forced choice of the questionnaire in the background study seems to suggest a possible explanation for the present study (see Appendix A). Somewhat equivalent proportion of teenagers (57.4%) and young adults (52.3%) claim that they are sexually inexperienced. From this, it seems reasonable to think

that the absence of age difference could partly be explained by their proportional size of respondents' sexual encounter. Sexual experience may be taken as a variable to explain attitude towards abstinence. Some investigators (Snyder, 1986; Kimmel and Weiner, 1995) also accept this line of thinking.

While searching for alternative explanation for the absence of age differences, in attitude towards abstinence is the conception of celibacy as infeasible intervention strategy for HIV prevention. The only foolproof method of avoiding AIDS is abstinence – a step that many people consider as an unrealistic alternative (Feldman, 1996; Posner, 1992; Beyene, et al., 1997). In addition the way people define sexual matter reflects the way they manage and control, express or suppress, their sexuality (Haset, 1993). The Ethiopian HIV/AIDS policy proposed some intervention strategy which totally abandoned abstinence (PFDRE, 1998). The policy indicates that faithfulness as the major intervention strategy; for those who cannot comply with this choice are encouraged to use condom. The policy was designed on the assumption of the impossibility of abstinence. Therefore such conception may have an influence on both age groups to have similar position towards abstinence. On the other hand adolescents in U.S.A identified abstinence as premarital sexual standard (Denney and Quadagno, 1992).

Another possible explanation for the absence of age difference could be attributed to the restricted age range among teenagers. It is assumed that the present study suffers from the limitation of very narrow age range among teenagers (18-19 years old only). This causes restricted variability among that age categories.

The educational level main effect was not significant. That means, there were no statistically significant difference among first, second, third and fourth year students as a group. This result is inconsistent with some similar research findings. Shabbir; et al., (1997) revealed that being sexually active was statistically associated with the educational level of students in the Kolla Diba high school. Daniel (1996) obtained the same research result.

A significant gender difference in attitude towards abstinence is the outcome of this study, which is in harmony with various research literatures. Females were more likely to name abstinence and faithfulness as sexually transmitted disease prevention methods (Temin, 1999; Negussie, 1998). In this study it is revealed that females score higher ($\overline{x}$ = 40.19) than males did ($\overline{x}$ = 36.44).

Some researchers claim that sexual behavior in general and male – female differences more specifically can be credited to the biological factors. For instance Masters and Johnson (1966) as cited by Sharver and Hendrick (1987) reported that females are less easily sexually aroused. Perhaps, they continue arguing gender differences in testosterone levels are relevant here. For Bancroftr (1978) as quoted by Sharver and Hendrick (1987) this hormone appears to be the crucial one in initiating sexual desire in both males and females. Nevertheless, other researchers refuted their argument. Biological components, while necessary, were not sufficient to explain or predict sexual value and behaviors (Eshleman, 1991; Haste, 1993). It is

further argued that men and women appear to be very similar in the sexual needs, derives and responses.

Another alternative possible explanation for the significance of gender difference in attitude towards abstinence is cultural and social pressure. Cultures around the world have varying attitudes towards sexual activity among unmarried people. In North Africa, the Middle East and most Asian countries young women are expected to abstain from intercourse until they marry, and available evidence suggests that most conform to that norm (The Alan Guttmacher institute, 1998). By their claim in the present study 79.1% females and 61.7% males agree for the question that says "I am responsible to respect family expectation (no sex until marriage). Ford and Beach, (1951) as quoted by Sharver and Hendrick, (1987) noted that in some societies death could result for females unable to produce evidence of virginity on their wedding night. In the county like Ethiopia girls will be despised, if not killed, if they fail to prove their virginity on their wedding night.

The Alan Guttmacher Institute, (1998) identified many societies in which a women's first sexual intercourse is likely to be with her husband, and these expectation can have a profound impact on the youth. The Institute also revealed that at least half of young women in many Sub – Saharan Africa countries enter their first union – either as a formal marriage that is religiously or legally sanctioned, or cohabiting union that may or may not lead to formal marriage, even though no more than one in seven do so in the region. Another social pressure that could explain male – female difference in attitude towards sexual abstinence is the double standard weighted on females.

Different researchers identified various standards of premarital sexual permissiveness of which one is the double standard. Meaning that premarital intercourse is more acceptable for men than women (Spencer, 1993; Denney and Quadagno, 1992; Recss, 1980 as quoted by Collins, 1988). Society still is much more discouraging of sexual activity outside the context of marriage, particularly for females (Steinberg, 1993). This societal discouragement may spurt out from fear of unwanted pregnancy, high chance for illegal abortion, being school dropout and the concomitant complication of premarital sex. In many situations females are more vulnerable to such problems. Wortman (1992); Elizabeth (1999) and The Alan Guttmancher Institute (1998) support this line of argument.

Emotional aspect of relationship could be another possible explanation for significant gender difference in attitude towards abstinence. Crooke and Baur (1990) indicated one possible reason for abstinence among young people is that the individual's interest on the emotional aspect of a relationship. In this regard, some researchers come up with significant gender difference. For instance, Steinburg (1993) and Denney and Quadagno (1992) found out, for women, the development of sexuality involves the integration of sexual activity into an existing capacity for intimacy and expression of affection in a committed relationship. Therefore, it may be thought that females seem to refrain from sex until they validate the kind and strength of relationship they have with their partner.

The gender – by – educational level interaction effect is significant. This seems that females tend to show more favorable attitude towards abstinence as HIV/AIDS

intervention strategy as they go from one educational level to the next. While males tend to decrease in their attitude towards abstinence along the educational level; with the only exception at senior year for both males and females.

On the other hand, in the second ANOVA (Table IV; in which condom is treated as dependent variable) all main and interaction effects are not significant, except one main effect, which is the educational main effect. More specifically, no significant age difference in attitude towards condom use seems to be revealed [F (1,415) = .054, *Ns*]. Also no significant gender difference in attitude towards condom use [F (1,415) = .000, *Ns*] is found. The only statistically significant result in this analysis is observed among different educational levels [F (3,415) = 3.164, p<. 05].

Lack of trust or being uncertain about the role of condom to protect oneself from being infected by HIV may play a role on the attitude of the respondents towards condom use. As revealed by their claims 93% know where condoms are available, 84% know how to use and only 38% used condom, but how regularly it is being used is unknown at this point. In spite of these, 69.8% of the total respondents agree (even though the degree of their agreement varies) and 8.4% take a neutral position for a question in the rating scale, which says "Even if condoms are used, I am not sure whether condom protects me from AIDS". Close examination of the items in the rating scale indicate that out of male respondents 29.1% and 29.7% out of female respondents agree while 40.6% males and 40.7% females take a neutral position for the above mentioned question. With regard to age, 70.3% teenagers and 72.2% young adult students agree that even if they use condom they are not sure whether

condom protects them from AIDS while 25.4% teenagers and 20.4% young adults take a neutral position. Regardless of the knowledge the respondents have, they seem doubtful to take condom as dependable intervention strategy to prevent HIV infection. Thus this result may imply a non-significant gender and age difference on the attitude of the respondents towards condom. Even though condom is not completely safe by itself different research literature indicate that the role of condom in combating AIDS is limited (Stroebe and Stroebe, 1996; Fumento, 1993). Beyen; et al, (1997) indicated that the use of condom among college students is very low.

In search of other possible explanation for non-significant gender difference may be attributed to the decision power to use condom. Condom is a sexual tool that is designed for males. The decision whether or not to use condom mostly rests on willingness of the male partner (Addewale, 1997; Mesganaw and Fekadu, 1996). However, high proportion of males feel that condom reduces sexual sensitivity (Denney and Quadagno, 1992). In the present study, as revealed by their claims, a high percentage of males agree to these notions that condom use is a pleasure killer, makes sex less exiting and spoils spontaneity of sex. On the other hand, when we examine the proportion of female students' attitude towards negotiating condom use is not favorable. Only 20.2% reported they would negotiate condom use with their partner. In societies where women have little power to make decisions about their lives, a woman who fears being infected by her partner may be unable to refuse his demands for sex or insist the use of condom (The Alan Guttmacher institute, 1998). To sum up, it may be logical to think both male and female to have almost closer attitude towards condom, though their reasons are somewhat different. Investigators

like Daniel (1996) and Tsehaynesh and Solomon (1998) indicated inability to negotiate condom use, partner refusal and decrease in sexual satisfaction are some reasons for not using condom.

Failure to perceive sex as planned activity among college students is common (Wortman, 1992). Using condoms requires planning – some one has to buy them and have them. But both teenagers and young adults are embarrassed to buy condoms and even to use them after buying. Of the total population 53.6% do not feel free to buy condom. In this study it is found that a significant proportion of teenagers and young adults are embarrassed to negotiate condom use. In connection with these 37.1% teenagers and 39% young adults feel embarrassed to negotiate condom use and 29% teenagers and 22.8% young adult take a neutral position. This could be one possible explanation for absence of significant age differences.

For some people the requirement of condom use can convey a message about suspiciousness of past sexual behavior (Cochran and Mays, 1989). Subjects' response to some other items of the questionnaire appears to give indications in support of the absence of significant age and gender differences in the present study. On the rating scale there was an item asking, " the requirement of condom use implies the partner is not dependable"; 73.3% females and 76.2% males and 74.4% teenagers and 76.1% young adults agree to this item. One may observe from these proportions that females and males; teenagers and young adults somewhat equally responded to the question concerning the requirement of condom use implying a

negative implication to past sexual experience of the partner. One may take as alternative explanation for the absence of age and gender differences since three hundred five subjects (out of the total 431) can be taken to have a homogeneous attitude. That is, homogeneity of response of the respondents can explain, at least in part, the absence of male – female and teenager and young adult difference in attitude towards condom use.

As indicated in the ANOVA (See Table IV), contrary to the age and gender factor, the educational main effect is statistically significant. This means that difference in attitude towards condom use among first, second, third and fourth year students exists. The result of the post hoc test indicates that fourth year student's score is higher than any other group. The result of the present study is inconsistent to some similar researches made. It was indicated that neither condom use nor monogamy increased significantly with increased educational level (Mukkuni, 1997; Ademchak, 1990; Forster, 1989 as quoted by Daniel, 1996). But it must be noted that these researches were conducted in a very wider educational level (ranging from elementary through college level).

The third univariate analysis of variance (Table VI; in which faithfulness is a dependent variable) revealed significant main effects and interaction effects, with two exceptions, that is, gender main effect and second order interaction effect. More precisely, gender difference on the attitude towards faithfulness is not significant [$F (1,415) = 1.610, p > .05$]. Attitudinal difference is significant between teenagers and young adults [$F (1,415) = 4.935, p < .05$]; and first, second, third and fourth year

students are statistically different in their attitude towards faithfulness [F (3,415) = 14.034, p<. 0001].

A study conducted using six colleges in Addis Ababa revealed that students knowledge about some of the preventive measures against AIDS, on the basis of identifying the most important measure, showed the highest proportion of students to be aware of the advisability of monogamy as a means of avoiding AIDS (Beyene; et al, 1997; Shabbir; et al; 1997).

The absence of gender difference is found to be inconsistent with some research literatures. For instance Temin, (1999) and Cochran and Mays (1989) identified gender difference in attitude towards faithfulness as HIV/AIDS intervention strategy. In Temin's research finding females favorably indicate faithfulness as a major strategy to prevent HIV infection. Cochran and Mays (1989) indicated women who approach sexual activity with a commitment to their partner might not be as likely to view having had several serially monogamous encounters as having multiple partners. This schema is influenced by women's perspective on relationship development. Cochran and Mays (1989) continue saying women tend to be more cautious, practical and realistic than men in their selection process that may influence their interpretation of the term "multiple partner."

In the present study there is a significant age difference in attitude towards faithfulness as HIV/AIDS intervention. Young adults seem to have high score ($\bar{x}$ = 45.74) than teenagers ($\bar{x}$ = 44.90). This result is in agreement with few available

similar research literatures. Baldwin and Baldwin (1988) as quoted by Denney and Quadagno (1992) unmarried students in Southern California were surveyed and the result that indicated that casual sex was less common among older than other students. This may be partially explained by the characteristics of the stage. Most researchers agree that teenage is a period of experimentation and exploration (Berer, 1993; Beyene; et al., 1997; Shabber; et al., 1997). And that is why, said the researchers, 15 to 19 year olds have a high prevalence of sexually transmitted disease than any other age group (Denney and Quadagno, 1992; UNAIDS, 2000). By their claims 73.6% of teenagers and 63.3% of young adults indicate their agreement (even if their degree of agreement varies) to the question "I feel comfortable and enjoy casual sex with different partners". In addition, very high percentage of teenagers (91.7%) and a considerable number of young adults (88.1%) agree that having sex with someone does not necessarily imply commitment to that individual.

Most parents are uncomfortable discussing sexual topics with their postpubertal children (Brooks-Gunn; et al., 1989). Teenagers who rate perceived communication with their parents as being poor are more likely to initiate sex easily, and do not live in a committed relation (Jessor and Jessor, 1977 as cited by Brooks-Gunn, 1989). These teenagers' first experience of independent life will start in the college campus with out adequate knowledge of how to initiate and maintain male – female relationship. Many teenagers today learn about sexuality from erroneous dormitory jokes. Teenagers' lower score in attitude towards faithfulness may be attributed to naivete to this issue. It may be reasonable to consider parental educational level to

explain parent – child relationship. In this study respondents were asked to indicate parental educational level. In this connection, 27.3% of subjects' fathers are illiterate and 34.7% have only elementary education. With regard to mothers' educational level is concerned 46.5% are illiterate and 28.4% have elementary education. A significant relationship was found between sexual encounter and onset of sex with mother educational level (χ^2 = 9.183) See appendix-G. The higher the educational level of the mother the lower the probability to engage in sex at an early stage. On the other hand, There is no significant relation between condom use and either mothers or fathers educational level.

In this study educational level main effect turned out to be significant. Nevertheless, it is somewhat confusing to explain the educational main effect on the attitude of the students towards faithfulness. It is for the simple reason that there is no evidence to explain this significant difference whether to be accounted for by years of stay in the campus or as a result of formal education. Some researchers give credit for physical proximity as a basis for initiating and maintaining committed relationship in such setting. A study on students in college dormitories by Dwonetzky, (1988) indicated that attraction to other person especially to the opposite sex depend a great deal on closeness or physical proximity through longer period. Therefore, campus stay seems to have some influence on the type of relation students' initiate.

In general, most students as reported by Beyene; et al., (1997) considered being faithful to a single lover as the best preventive measure against HIV/AIDS in college

campuses. The same result was achieved in a high school by Shabbir; et al., (1997). It has been observed that this is an inaccurate self-perception of monogamy and may lead the students to assume falsely that they are safe from HIV, as they would never be absolutely sure about the compliance of their partner (Beyen, 1997). This strategy (faithfulness) works as long as both partners are faithful to one another all the time (Berer, 1993).

Finally mentioning possible shortcomings and strength of the study seem to be of value before drawing conclusion in the succeeding section. An inherent problem with the present study is that the data is based on self-report questionnaire. That is, it is actually difficult to be sure whether the respondents really write what they actually feel and do. Moreover, the examination of the various effects of the variables under the study could be considered somewhat good.

On the other hand, the attitude scale seems to be sound as may be judged from the reliability ($r \geq .86$ for the full scale, abstinence, faithfulness, and condom use were found to be .85, .83, and .87 respectively, using Cronbach alpha). Furthermore, some internal evidence of validity of the attitude scale seem to suggest that all items of the scale highly differentiate those with the upper and lower (27%) scores on the attitude scale (the discriminating qualities of the scale items as measured by t – values are all significant at .05 level). This seems to provide some evidence that the scale is actually measuring attitude towards HIV/AIDS intervention strategy.

CHAPTER SIX

SUMMARY AND CONCLUSION

The objective of this study was to examine the attitude of Bahir Dar University students towards HIV intervention strategies. Accordingly the following specific questions were raised:

1. Do males and females differ statistically in their attitude towards sexual abstinence, use of condom and faithfulness as feasible intervention strategies.
2. Are there significant differences in attitude towards sexual abstinence, use of condom and faithfulness as feasible intervention strategies due to age.
3. Do first, second, third and fourth year students significantly differ in attitude towards sexual abstinence, use of condom and faithfulness as feasible intervention strategy.
4. Are there statistically significant first and second order interaction effects among gender, age and educational level regarding the attitude towards the intervention strategy.

Out of the total 1719 Bahir Dar University students (Education Faculty) 450 students were selected at random. These students came from nine departments out of eleven. The selection of the departments was also at random. Among the valid subjects: 91 females and 340 males; 126 teenagers and 305 young adults; 125 first and second,

100 third and 81 fourth year students participated in the main study. Self-administered questionnaire was used to collect the necessary data.

After examining the data using a three-way analysis of variance for the three dependent variables separately the following results were obtained. On the abstinence ANOVA, significant gender difference in attitude towards abstinence appears to be revealed. In addition to this, gender-by-educational level interaction was also significant. There was no significant age and educational level difference in attitude towards abstinence. While on the condom use ANOVA, the only significant effect on condom use was observed among different educational levels. The rest of the main and interaction effects were not significant. The ANOVA on faithfulness revealed that age and educational level main effects were statistically significant implying faithfulness as feasible intervention strategy to prevent HIV/AIDS infection. On top of this, all first-order interactions were significant.

Form these findings one may arrive at the following conclusions and these conclusions are likely, at least, for Bahir Dar University students.

1. From the presence of gender difference in attitude towards abstinence as HIV/AIDS intervention strategy suggests females refrain from sex and this seems to be likely.
2. The absence of substantial age and educational level differences in attitude towards abstinence may indicate the perception of abstinence as

feasible HIV/AIDS intervention strategy does not seem to be realistic despite it potential effect.

3. The absence of significant gender and age main effects and all possible interaction effects seemingly indicate the presence of some doubt on condom use as a dependable HIV/AIDS intervention strategy does seem to be likely.
4. From the findings, it may be noticed that a favorable attitude towards condom is a necessary condition for better use.
5. Generally, the finding seems to imply the fact that it is not one's gender and age that matter in condom use compared to one's attitude towards condom.
6. From the presence of age difference in attitude towards faithfulness, young adults to advocate faithfulness does seem to be likely.
7. A statistically significant educational level main effect suggests that the higher the educational level the greater the degree of faithfulness adapted for HIV prevention.
8. By and large, from the presence of significant age and educational main effects as well as interaction effects it may be fair to conclude that faithfulness as HIV/AIDS intervention does seem to be likely.

Finally, the findings of the present study seem to have the following implications for HIV/AIDS intervention endeavors and future research.

1. The attribution of the absence of age and educational differences in attitude towards abstinence seem to imply that policy makers and different organizations working on HIV/AIDS need to teach abstinence as being a realistic and foolproof strategy in the avoidance of AIDS.
2. That the presence of doubt on condom use may imply that social marketing agencies of condom and all other concerned parties need to clear out all suspicions and give the reality of condom use. In this study and others it was identified that condom was perceived as something that decreases sexual sensitivity and spontaneity. Indeed, such issues must be surveyed on wider representative sample of the population for valid conclusions and this is an indication for further research.
3. The significant age and educational main effects and the significance of all first order interaction effects imply that faithfulness is prevalent among Bahir Dar University students. However, their conceptions of faithfulness need further investigation.

At last the investigator recommends the following

1. This study is the first of its kind therefore great caution is necessary prior to application these conclusions before additional and rigorous study is conducted.
2. The causes of attitude towards HIV/AIDS intervention strategy through the questionnaire are not certainly identified. Since the whole purpose of the study was not to investigate the cause. Hence in using the questionnaire care must be take in this regard.

3. In this study items are not direct questions rather they are indirect. This is due to the sensitive nature of the study. As a result it is really difficult to make generalization that holds true. Although, such bestowal of the questions may be expedient in keeping the real purpose of the questionnaire concealed, even if it had its own drawbacks as indicated above.
4. A further limitation of the study is that the age range among teenagers was limited (only 18 and 19 years old). This tends to limit the generalizability of results to all teenagers.

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Appendix - A

Addis Ababa University

Graduate Studies

Department of Educational Psychology

The aim of this questionnaire is to gather information on attitude of Bahir Dar University Students towards intervention strategies, which is relevant to HIV/AIDS transmission.

In deed, I should make it clear that the questionnaire explores some very personal areas but at the same time it is planned to obtain the information from you through this questionnaire is very essential to complete this study successfully. I have selected you to fill this questionnaire for I believe that you could give me all the necessary information frankly and honestly. To indicate your responses please encircle or put "✓" mark or write your answer on the space provided for the question that require to give written response. Please note that there is no right or wrong answer in this questionnaire

Finally, I can grantee you; your responses will be kept in absolute confidentiality and will not affect you and people around you.

Thank you for your sincere cooperation.

PART I: Background Information

Please fill or encircle the number of your choice.

1. Age__________
2. Sex: 1. Male 2. Female
3. Religion 1. Orthodox 2. Catholic 3. Protestant 4. Islam 5. Other, Specify __________
4. Marital status
   1. Unmarried 2. Married
   3. Divorced 4. Widowed
5. College educational level
   1. 1st year 2. 2nd year 3. 3rd year 4. 4th year
6. Educational level of your parents
   - 6.1 Father's educational level
     1. illiterate 2. elementary
     3. high school 4. college and above
   - 6.2 Mothers educational level

1. illiterate 2. elementary
3. high school 4. college and above

7. Have you ever had sex in your life?
   1. Yes 2. No
8. If yes, at what age did you start having sex?
   ______ Years, ________ Months
9. Do you know that any unprotected sex possibly can cause AIDS?
   1. Yes 2. No
10. Have you experience sex in the past 5 years?
   1. Yes 2. No
11. If yes for question No.10, have you ever suspected yourself that you could be HIV positive?
   1. Yes 2. No
12. If yes for No. 11 have you ever, at least once, worried about your being HIV positive?
   1. Yes 2. No
13. If no for No. 11, do you think you are immune of HIV ?
   1. Yes 2. No
14. If you have had unprotected in the past five years and if you suspect yourself that you could be HIV positive, do you think you need a blood test to confirm your HIV status?
   1. Yes 2. No

15 If yes for No. 14, will it be comfortable to you to have blood test?
   1. Yes 2. No

16 Have you ever given blood for HIV test ?
   1.Yes 2. No

17 Have you ever used condoms?
   1. Yes 2. No

18 Do you know how to use condoms?
   1. Yes 2. No

19 Do you know where to get condoms?
   1. Yes 2. No

20 Can you feel free to buy condoms?
   1. Yes 2. No

21 Do you have a steady boyfriend or girlfriend?
   1. Yes 2. No

22 If yes for No. 21, for how long were you together?
   _________ Years, __________ Months

23 If you have a steady boyfriend or girlfriend, do you have plan to stay together in the future?

1. Yes 2. No

24 If you do not have a steady boyfriend or girlfriend are you willing to have sexual intercourse with casual partner without condom?

1. Yes 2. No

25 If yes for No. 24, what is your reason to have sex?

____

26 Is your value system about sex in favor of traditional standards?

1. Not at all 3. Definitely

2. Somewhat 4. Very definitely

27 Is your value system about sex influenced by religion?

1. Not at all 3. Definitely

2. Somewhat 4. Very definitely

28 Is your value system about sex in conflict with your parents' value?

1. Not at all 3. Definitely

2. Somewhat 4. Very definitely

29 How do you rate own experience in sex in comparison with your peer group?

1. Far less 2. less 3. same as

4. more experienced 5. Far more experienced

30 How do you rate your knowledge about sex in comparison with your peer group?

1. Far less 2. less 3. same as

4. more knowledgeable 5. Far more knowledgeable

PART II: Rating Scale on Attitude towards HIV/AIDS Intervention Strategies.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1. AIDS is only avoidable in an exclusive sexual relationship					
2. I believe that people should only have sex with a single partner due to AIDS.					
3. I believe that it is fine to have sex with anyone as long as I am free from AIDS					
4. The higher the number of sex partners the bigger the risk of AIDS					
5. For me, having sex with someone does not necessarily imply that I am committed to that individual.					
6. I would not have sex with someone unless I was totally committed to that person.					
7. I feel comfortable and enjoy casual sex with different partners					
8. Even if I do not know my partner, I would feel comfortable and at ease having sex.					
9. Even if I found myself physically attracted to a person, I would feel uncomfortable having sex with that person without knowing him or her					
10. I would have to be closely attached to someone before I would feel comfortable and fully enjoy having sex with him/her					
11. It is alright for me, to have sexual intercourse with a person who is not my steady boy/girlfriend					
12. I am afraid to have sex with anyone due to AIDS.					
13. If I love my boy/girl friend, I am obliged to have sex with him/her					
14. I will have sex even though, I know AIDS exists.					
15. I am responsible to respect family expectation (no-sex until marriage), so I refrain from sex					

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
16. Allowing time for friendship to develop before sex is a necessary condition.					
17. If I fear that the relationship will break up, I say yes for sex					
18. There are other forms of expressing affection than sex					
19 I will say no for sex because of the religious value I have.					
20. I am not ready for any kind of sexual intercourse					
21. If I spend a lot of money on my boy friend/girl friend then I expect to have sexual intercourse with him/her.					
22. Even if condoms are used , I am not sure whether or not condoms protect me from AIDS					
23. If my partner declines to use a condom I usually don't insist upon it					
24. I feel that using condom is a pleasure killer.					
25. I can convince a partner who thinks that condoms are "pleasure killers" to have sex by using condoms					
26. I feel embarrassed to negotiate condom use with my partner.					
27. Condom use make sex less exciting					
28. Even if I am extremely aroused sexually I can still insist on to use a condom					
29. Condom use spoil the spontaneity of sex					
30. I use a condom with every new partner					
31. I can't use condom due to my religious value.					
32. Condoms are good for those who have sex with more than one partner					
33. The requirement of condom use implies the partner is not dependable					

Appendix – B

List of departments

1. *Accounting department*
2. Amharic department
3. Biology department
4. Chemistry department
5. English department
6. Geography department
7. History department
8. Mathematics department
9. Pedagogics department
10. Physics department
11. *Secretarial Science department*

Note - The departments written in "italic" are not included in the study

Appendix – C

Grand and Grand grand means on Abstinence

Age by Gender

	Males	Females	Total
Teenagers	36.65	40.19	**38.17**
Young adult	36.38	40.19	**36.84**
Total	**36.44**	**40.19**	***37.23***

Gender by Educational level

	Males	Females	Total
First year	37.59	38.91	**38.06**
Second year	36.21	41.44	**36.97**
Third year	35.31	42.50	**36.17**
Fourth year	36.91	40.53	**37.67**
Total	**36.44**	**40.19**	***37.23***

Age by Educational level

	Teenagers	Young adults	Total
First year	38.04	38.10	**38.06**
Second year	38.23	36.55	**36.97**
Third year	39.10	35.84	**36.17**
Fourth year	-	37.67	**37.67**
Total	**38.17**	**36.84**	***37.23***

Note – the means written in bold letters are grand means

- the mean written both in italic and bold letters is Grand grand mean.

Appendix – D

Grand and Grand grand means on Condom use

Age by Gender

	Males	Females	Total
Teenagers	37.06	38.57	**37.71**
Young adult	38.23	36.97	**38.08**
Total	**37.98**	**37.92**	***37.97***

Gender by Educational level

	Males	Females	Total
First year	38.42	39.36	**38.75**
Second year	36.27	34.83	**36.06**
Third year	37.92	36.92	**37.80**
Fourth year	40.36	38.18	**39.90**
Total	**37.98**	**37.92**	***37.97***

Age by Educational level

	Teenagers	Young adults	Total
First year	39.22	37.75	**38.75**
Second year	34.26	36.66	**36.06**
Third year	35.50	38.06	**37.80**
Fourth year	-	39.90	**39.90**
Total	**37.17**	**38.08**	***37.97***

Note – the means written in bold letters are grand means

- the mean written both in italic and bold letters is Grand grand mean.

Appendix – E

Grand and Grand grand means on Faithfulness

Age by Gender

	Males	Females	Total
Teenagers	44.58	45.31	**44.90**
Young adult	45.59	46.81	**45.74**
Total	**45.38**	**45.92**	***45.59***

Gender by Educational level

	Males	Females	Total
First year	43.32	43.34	**43.33**
Second year	44.99	45.44	**45.06**
Third year	45.75	49.67	**46.22**
Fourth year	48.11	50.47	**48.60**
Total	**45.38**	**45.92**	***45.49***

Age by Educational level

	Teenagers	Young adults	Total
First year	43.88	42.15	**43.33**
Second year	47.52	44.24	**45.06**
Third year	45.40	46.31	**46.22**
Fourth year	-	48.60	**48.60**
Total	**44.90**	**45.74**	***45.49***

Note – the means written in bold letters are grand means

- the mean written both in italic and bold letters is Grand grand mean.

Appendix – F

Father's educational level by have you ever had sex in your life

		Have you ever had sex in your life		
		Yes	No	***Total***
Father's educational level	illiterate	56	58	114
	Elementary	68	77	145
	High school	28	42	70
	college and above	31	61	92
Total		183	238	421

Chi – Square Test

Father educational level and on set of sexual experience

	Value	df	Sig. (1 – tailed)
Person Chi-square	6.095*	3	.107

* 0 cells have expected countless less than 5. The minimum expected count is 30.43

Appendix – G

Mother educational level by have you ever had sex in your life

		Have you ever had sex in your life		
		Yes	No	***Total***
Mother's educational level	illiterate	100	99	199
	Elementary	47	69	116
	High school	22	46	68
	college and above	13	26	39
Total		182	240	422

Chi – Square Test

Mother educational level and on set of sexual experience

	Value	df	Sig. (1 – tailed)
Person Chi-square	9.182*	3	.027

* 0 cells have expected countless less than 5. The minimum expected count is 16.82

I, the under sign, hereby declare that this thesis is my original work, has not been presented for a degree in any other university and all sources of material used for this thesis have been dully acknowledged.

Name: Asnake Hailu

Department: Educational Psychology

Date of submission: May 25, 2001

Signature: