COLLEGE OF HEALTH SCIENCES, SCHOOL OF MEDICINE, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

POSTGRADUATE PROGRAM

Unprotected sexual practice and associated factors among AAU CHS undergraduate students Addis Ababa Ethiopia: Across sectional study.

Thesis to be submitted to the department of obstetrics and Gynecology, Addis Ababa University in partial Fulfillment for the requirements of specialization certificate in obstetrics and Gynecology.

October, 2024 Addis Ababa, Ethiopia.

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October, 2024 Addis Ababa, Ethiopia

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Research report attesting page

Student declaration

To the best of my knowledge and ability, I have cited all of the various sources of information used in this thesis. I also declare that I have not submitted this thesis to any other institution for the award of a degree, certificate, master's degree, or diploma. This thesis, entitled "Unprotected sexual practice and associated factors among AAU CHS undergraduate students Addis Ababa Ethiopia," was entirely completed by me under the guidance of my advisor.

Name of student Dr.Tadele Sewmehon Signature……Date …….

Supervisors' Declaration

This certifies that I have read and assessed the research thesis on "Unprotected sexual practice and associated factors among AAU CHS undergraduate students in Addis Ababa, Ethiopia" under my supervision from the beginning to the present and that it is eligible to be submitted for final approval as a partial fulfillment of the requirements for the degree of specialty in obstetrics and gynecology.

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List of Acronyms/Abbreviations

AA…… Addis Ababa

AAU…….. Addis Ababa University

AIDS…… Acquired Immunodeficiency Syndrome

CDC……... . Centers for Disease Control

CHS…….…… Collage of Health Science

DPRC……. . Departement Research and Publication Commette

ETB……. Ethiopien Birr

HDI……. Human Development Index

HIV……. Human Immunodeficiendy Virus

HPV…… Human Papilloma Virus

HSV…… Herpes Simplex Virus

EDHS……. Demographique and Health Survey

GC……. Gregorian calendre

OBGY……. Obstetrics and Gynecology

PI……. Principal Investigator

PLHIV……. People Living with HIV/AIDS

SDGs…… Sustainable Development Goals

SSA …… Sub-Saharan Africa

SSPSS…….. Statistical Package of Social Sciences

STD……. Sexually Transmitted Disease

TASH……. Tikur Anbessa Specialized Hospital

UNESCO…… United Nations Educational Scientific and Cultural Organization

UNFPA…… United Nations Population Fund

UNAIDS…….. United Nations Programme on HIV/AIDS

WHO…… World Health Organisation

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Abstract

Background: One of the primary preventative measures against HIV/STIs in Ethiopia is the usage of condoms. On the other hand, according to current reports, HIV/AIDS and other STI rates are still rising, particularly in Ethiopia's universities. This implies that risky sexual conduct is still being engaged in by people. Research from around the world shows that behavioral, socioeconomic/demographic, and environmental factors interact to cause unsafe sex.

Objective:To determine the prevalence of unprotected sexual practice and related characteristics among undergraduate students at AAU CHS who identify as sexually active.

Methods: This cross-sectional study was carried out in an institution. A total of 422 study samples were used, with a 100% response rate, during the course of the three-month study period. Each department and academic year received a proportionate share of the sample. After data collection, each questionnaire was checked for completion using the Google Sheet code, and it was subsequently cleaned and coded in Excel. The data was cleaned up and then sent to SPSS version 25 for analysis. Tables, graphs, and charts were used to illustrate the descriptive statistics.

Results: Within this study, 28% of individuals reported having had sex in the past; of those who had, 78% reported having had sex in the previous three months. A total of 77.2% of individuals who engaged in sexual activity within the last three months reported using condoms. 69% of the condom users reported using them for all sexual activities. Age of first sex >20 years showed a 4.4 fold increase (AOR=4.4, 95%CI=1.05, 18.56); one sexual partner had a 4.6 fold increase (AOR=4.6, 95%CI=1.37, 15.32); and alcohol usage was found to be a 1.6 fold (AOR=1.6, 95%CI=1.12, 5.48) determining factor for unprotected sex.

Keywords; unprotected sex, undergraduate students, Addis Ababa ,Ethiopia, cross-sectional study.

1 . Introduction

1.1 Background of the study

The use of condoms properly and consistently is a key component of family planning and the prevention of STDs.(1) STDs can have immediate symptoms, long-term infection, and serious delayed effects, including infertility, ectopic pregnancy, abortion, being a single mother, cervical cancer, and the early death of adults and children exposed through maternal transmission.(2)

Condom protection may provide varying degrees of protection for different types of infections, depending on how the various STDs are transmitted. Condoms might not be effective in all contaminated or potentially contaminated areas. Because of this, they are probably going to provide more protection against infections (such genital herpes, syphilis, chancroid, and human papillomavirus [HPV] infection) that are mostly transmitted by skin-to-skin contact and may or may not infect areas covered by a condom. HIV infection, trichomoniasis, chlamydia, and gonorrhea are among these infections.(1)

The late adolescent and early twenties are an age of great experimentation, which leads to an increase in dangerous sexual behavior, according to the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The freedom that university students typically experience in a campus environment increases the potential that they may engage in hazardous sexual activities, which can lead to STIs and pregnancies. It seems that young individuals use their independence as an excuse to engage in risky sexual behaviors that can lead to STI infection and transmission.(4)

According to UNAIDS 2022 figures, there were 38.4 million HIV-positive individuals living in the globe, 1.5 million new cases of the virus, and 650 000 deaths from AIDS-related illnesses in 2021. Of them, sub-Saharan Africa accounted for 45%. Weekly HIV infections among young women aged 15 to 24 accounted for 4900 in 2021; 4000 of these infections occurred in sub-Saharan Africa. (5)

Eastern and Southern Africa has the highest global rates of HIV prevalence among youth (15–24 years old), with 1.6% of young men and 3.4% of young women living with HIV in 2016. (5)

Ethiopia has 87,000 young individuals living with HIV and 8700 new cases among young people in 2016, despite the country's 0.4% HIV prevalence rate for women and 0.5% for men. (6)

The EDHS from 2016 reports that the incidence in urban areas was 2.9%, seven times higher than the prevalence in rural regions (0.4%). As to the National HIV Related Estimates and Projections (2020), a mere 79% of people living with HIV are cognizant of their status. Geographically, the prevalence of HIV varies; it ranges from less than 0.15% in Ethiopia and Somalia to 4.13% in Gambella. (7)

The death rate from AIDS-related teenage pregnancy has increased globally and in Africa. The following are some of the things that increase the risk of infection in young people: poverty, aggression, lack of control in close relationships, conventional norms such as early marriage and risky sexual behavior, and gender inequality. The impact is influenced by the transactional character of sexual interactions, in which girls and women exchange sexual favors for money, education, food, or housing.(8)

Information on STIs is rare and erratic between and within areas and countries, especially when it comes to data broken down by age and sex. This makes it difficult to identify the people who are most affected and where they are in order to create a worldwide response that works. Adults aged 15 to 49 report an estimated 357 million new cases of four curable sexually transmitted infections (STIs) annually. These are Chlamydia trachomatis (131 million), Neisseria gonorrhoeae (78 million), Syphilis (6 million), and Trichomonas vaginalis (142 million). (5) It is estimated that 417 million people have herpes simplex type 2 (HSV-2), and 291 million women are thought to be afflicted by the human papillomavirus (HPV). These two incurable viral STIs are common and occasionally lethal. The prevalence of STIs varies greatly by region around the world. For instance, in 2012, the highest genital HSV-2 prevalence was seen in Africa (31%) among women aged 15 to 49, while South-East Asia had an estimated 8% prevalence. After a person first engages in sexual activity, which often occurs in adolescence, the risk of contracting either an HPV or HSV-2 infection is highest for both men and women.(8)

Adolescents are often the targets of unwanted pregnancies, which can have a range of detrimental physical, social, and economic repercussions. Females between the ages of 15 and 19 account for 11% of all births worldwide. Maternal diseases accounted for the majority of mortality in this group in 2015, with 10 fatalities per 100,000. Maternal mortality among females

aged 15 to 19 was highest in African LMICs (36 per 100,000), then in Eastern Mediterranean, Southeast Asian, and American LMICs, in that order. When compared to adult women, adolescents also bear a disproportionately large part of the burden of unsafe abortion-related fatalities and disabilities. Between 2.2 million and 4 million teenage abortions are thought to occur annually in poor nations. Due to social and legal barriers that prevent teenagers from accessing safe abortion services in many areas of the world, adolescents frequently turn to risky operations carried out by unqualified medical professionals or in hazardous settings. Adolescent girls are thought to be involved in 14% of unsafe abortions worldwide, whereas only 11% of births worldwide occur in this age group. Africa accounted for 26% of these unsafe adolescent abortions in poor nations, with Latin America and the Caribbean accounting for the remaining 15%.(8)

In Africa, a significant proportion of unsafe abortions (60%) involve women under the age of 25. (9) Unwanted pregnancy among young people and adolescents in Ethiopia is a significant issue for sexual and reproductive health. 54% of girls under the age of 15 and 37% of young people between the ages of 20 and 24 become pregnant against their will. Moreover, unprotected sexual contact is the main way that HIV is spread among Ethiopian youth, who are more prone to engage in high-risk sexual behavior.(10) The World Health Organization (WHO), United Nations Aid for International Development (UNAIDS), and United Nations Population Fund (UNFPA) have all focused on promoting condom negotiation strategies, such as increasing self-efficacy regarding condom use as a means to improve safe sexual behavior and lower the risk of HIV, STIs, and unwanted pregnancies. (3,8) Even though regular condom usage is crucial to the prevention of HIV transmission, young people must exercise moderation in their condom-using habits.(3)

Over the past 20 years, there has been an increase in the use of condoms among young people. More than 80% of Latin American and European nations and less than 30% of African nations use condoms during their last sex, respectively. Although there have been advances in Africa, where in certain countries close to 80% of condoms are used with non-regular partners, the continent still has the lowest condom usage. This degree of variance demonstrates that there are significant chances to increase condom supply and demand.(3)

The HIV/AIDS/STIs Behavioral Surveillance Survey conducted by the Ethiopian Ministry of Health found that both personal and societal factors affect the usage of condoms by young people. The individual component of perceived self-efficacy is one that can influence condom use. It is an idea drawn from social cognition theory that is believed to be a factor that could lead to changes in behavior that are ultimately related to health.(10)

Making condoms more widely available, bringing down their price, spreading knowledge around the globe, and helping to remove personal and social barriers that prevent people from using condoms are some of the most often recommended strategies for reducing the number of deaths caused by HIV/AIDS. (3)

1.2 Statement of the problem

In Ethiopia, young people are more prone to engage in high-risk sexual behavior, and unprotected sexual intercourse is the main way that HIV is transmitted among them.(10) Consistent with the sustainable development goals of multiple initiatives, such as the World Health Organization (WHO), United Nations Aid for International Development (UNAIDS), and United Nations Population Fund (UNFPA), a position statement endorsing the promotion of condoms to young people, among other populations, as a critical intervention for preventing the spread of HIV, sexually transmitted infections (STIs), and unwanted pregnancies was released. (11)

Students at universities and colleges are thought to be aware of HIV risks and prevention strategies, but research has shown that they frequently participate in riskier sexual conduct. Promoting healthy sexual behavior would help lower the morbidity and mortality from sex-related illnesses brought on by unsafe abortion and HIV. One of the main factors contributing to avoidable mortality in low- and middle-income nations is unprotected sexual behavior and the related infection exposure. It is the primary method of HIV and human papillomavirus transmission, which accounts for the deaths of over a million individuals worldwide.(12)

Numerous comprehensive studies have been conducted on the understanding, attitudes, and behaviors of university undergraduate students about AIDS/STIs. Due to their predisposition for experimental conduct, need for peer social approbation, and sense of invulnerability, undergraduate university students are frequently perceived as being at high risk for HIV/STIs.

There is little doubt that prevention programs based on behavioral modification are beneficial and continue to be the best and most economical strategy, even though it is acknowledged that no intervention targeted at altering habits to promote health can be 100% effective. (14)

An estimated 300 million new cases of treatable STIs are reported annually globally, with a regional distribution resembling that of HIV. A person is more likely to contract HIV if they have STIs. Although governments and civilizations may see encouraging condom usage as a way to combat the spread of HIV, attempts to prevent the disease that do not involve condoms are insufficient and ultimately ineffectual. (1)

A meta-analysis and systematic review on poor condom use at the most recent sexual encounter (LSI) were conducted among university students in sub-Saharan Africa (SSA). 52.9% of the LSI's population reported using condoms. Among university students at the LSI, West Africans (58.6%) used condoms more often than students in Southern Africa (50.5%), Central Africa (43.9%), or East Africa (40.5%). In research including students from countries with low and medium HDI, the percentage of condom users at the LSI was essentially equal at 52.6% and 55.6%, respectively. However, research conducted among students in countries with high HDI showed that 46.8% of them used condoms at the LSI. (15)

Several studies have assessed personal characteristics associated with the use of condoms by Ethiopian youth. Condom use has been demonstrated to be supported by a number of characteristics, including strong relationships with teachers and fellow students, discussions about sexuality with friends and peers, a better perceived economic status, and a higher level of education (12). Risk factors associated with condom non-use and other unsafe sexual practices include frequent alcohol consumption, low religious activity, and poor HIV/AIDS education. (16, 17)

1.3 Significance of the study

The SDGs, which seek to achieve global economic, social, and environmental sustainability by 2030, cannot be accomplished without funding for the health and wellbeing of adolescents and young adults. Investments in health will help teens develop into healthy adults who can positively impact society, building on and maintaining earlier gains in the health of young

children. Three benefits result from such an investment: benefits for today's youth, benefits for their adult lives, and benefits for their progeny. (8)

One of the primary methods for preventing HIV and STIs in Ethiopia is the use of condoms. Recent data indicate that the increased prevalence of HIV/AIDS and other STIs is especially affecting Ethiopia's higher education institutions.(18) Although the federal government has established in place numerous programs to enlighten people about HIV/AIDS, STIs, and unwanted pregnancies (as well as the potential ramifications of unsafe sex) and different preventive actions. (18)

This study will be used to ascertain the prevalence of condom use and comprehend the reasons for inconsistent condom use, as there hasn't been a recent study on the topic at AAU CHS. It will also act as a starting point for additional studies. The results can be applied to enhance STD prevention programs that are currently in existence, especially those that target HIV prevention programs that seek to achieve 100% condom use among students. Decision-makers, managers at different levels, stakeholders, the education sector, the community, and families may find the material helpful.

2 . Literature review

2.1 Prevalence of condom use and unprotected sex

Most of the research conducted in China on college and university students' condom use is comparable. 19,123 Chinese college students participated in the study, and 24.7% of them said they always use condoms, 23.9% said they do so regularly, 33.5% said they do so occasionally, and 17.9% said they never do. An online study on disparities in the consistent use of condoms among undergraduates with sexual experience was voluntarily completed by 12,750 students in mainland China. The poll was anonymous and self-administered. Also, 61.3% of the 2054 undergraduates who had sex admitted to using condoms at least once throughout each encounter. 19)(20

An investigation, using a cross-sectional design, examines the frequency of condom use and associated factors among Chinese female undergraduate students in Wuhan, China. A mere 19.8% of students who admitted to having had sex in the past year stated they had used a condom on their first encounter, and 70% indicated they had done so often or each time they had sex in the preceding year. In Sichuan Province, China, similar studies were conducted. 60.1% of men and 58.1% of women reported using condoms during their most recent sexual experience. Nonetheless, research done on college students at five different colleges and universities in Nanjing, China, revealed that 10.7% of participants had engaged in premarital sex, and 30.7% regularly used condoms. (21) (22–23)

Four state universities in the Western Province of Sri Lanka carried out an institution-based descriptive cross-sectional survey. According to the survey, 21.2% of respondents have ever had sex. Out of the respondents, just 18% claimed to have used condoms during their first sexual experience, while 85.8% of those who reported having intercourse in the past year denied using them. However, there is a higher prevalence of condom use in Iran, where male students reported being significantly more likely than female students to have had prior sexual contact (44.5% vs. 23.3%), 82.1% of pupils stated that they used condoms inconsistently the previous year, and 67.1% of students reported not using condoms during their most recent sexual activity. (24–25)

In a cross-sectional study of 600 men in the Erbil Governorate between the ages of 15 and 49, the condom use rate was 12%, while 88% of the respondents had never used a condom. (26)

A cross-sectional study of all Portuguese university students revealed that 78.8% of participants used a condom on their first date. Nevertheless, at the University of Pristina in Kosovska Mitrovica, northern Kosovo, fewer students reported using condoms during sexual encounters with a casual partner. Of the students, 56.8% reported doing so consistently, 25.9% occasionally, 9.6% with a new (first-time) casual partner, and 7.6% never. During their most recent sexual encounter, 54.8% of students used a condom, compared to 45.2% who did not. (27) (28)

A multistage probability sample of 1093 Croatians aged 18 to 24 was included; of these, 85% had previously had intercourse. Compared to just 52% of previous users, 60% of first-time users reported using a condom. Out of all the respondents, just 25% claimed to regularly use condoms during sexual activity in the past year, and 74% of those who reported having oral sex reported never doing so. (29)

According to the National College Health Assessment (ACHA-NCHA) by the American College Health Association, 49.6% of college students had vaginal intercourse in the previous 30 days. Only 50.3% of college students who admitted to having vaginal contact said they consistently used a condom. According to studies conducted at urban public universities in the United States on the impact of relationship factors on condom use among college students, 64.2% of participants in non-monogamous relationships reported being currently involved in a sexually intimate relationship, 36.5% said they never or very infrequently use condoms, and 63.5% said they use them frequently or always. 41.0% of participants in monogamous relationships said they never or only occasionally used condoms, while 59.0% said they used condoms frequently or always with their spouse.(30)

According to the 2015/2016 CCHS, around 59.6% of 15–24-year-olds in Canada reported ever having sex, and 54.1% reported having had sexual contact in the previous year. Sexual practices, condom use, and other contraception techniques were also examined. 60.1% of the people who reported being sexually active said they last used a condom. In a similar vein, 60% of Brazilian

youth aged 15 to 24 who participated in a cross-sectional study on factors related to condom use reported using them during their most recent sex. (31)(32)

A prospective study of university students in sub-Saharan Africa found that 51.1% were from other sub-Saharan African nations, including Zimbabwe (32.9%) and Lesotho (18.2%), while 48.9% were South African citizens. Only 51.3% of individuals reported using condoms consistently, whereas 61.3% of participants reported having had sexual contact in the previous 3 months. (33)

According to cross-sectional research done among university students in KwaZulu Nata, South Africa, 81.2% of students had sexual encounters in their lifetime, and 65.1% had engaged in sexual activity in the previous three months. Less than half of students (45.2%) reported using a condom during their first sexual encounter, and only 28.5% reported using a condom throughout each sexual encounter in the previous three months. (34)

At the Mbarara University of Science and Technology in Uganda, a cross-sectional survey was done, and a total of 60.3% of the students said they had their first sexual experience. 49.2% of women and 37.4% of men who participated in the survey said they never used condoms with a new sex partner. However, at Martyrs University in Uganda, where rates of sexual activity and condom use are considerably higher, 74% of students are engaged in sexual activity. Comparable studies of female undergraduate students from two universities in the Dar es Salaam region of Tanzania revealed that 70.4% of respondents had engaged in sexual activity, with condoms making up 56.0% of those who used contraception. (35)(36)(37)

Among Goma University students in the Democratic Republic of the Congo, a descriptive cross-sectional study on knowledge, attitudes, and practices of condom use for reducing HIV infection found that 66% were sexually active, of whom 59% had worn a condom, but only 24% had done so consistently. At Botswana University, however, 63.9% had engaged in sexual activity, and 89% used condoms as a form of contraception. (38)(39)

Jomo Kenyatta University of Agriculture and Technology undergraduate students in Kenya participated in a cross-sectional survey in which it was discovered that 66.2% of them had had sex. Moreover, 72.8% of them reported using a condom for their most recent sexual activity.

However, just 38.6% of students at two universities in Nigeria reported using condoms on a regular basis. (40,41)

According to facility-based cross-sectional studies in Ethiopia conducted at Haramaya and Wolaita Sodo, 28% and 35% of students reported having had sexual contact, while 64.1% and 46% of them reported using a condom; only 20.4% and 54% of those who had used a condom consistently (10,13). although among Debre Birhan and Arba Minch University, it is substantially greater. Of the 36.5% and 32% of students who engaged in sexual activity, 55% and 88.5% used condoms, of which 53.4% and 26.7%, respectively, used condoms on a regular basis (8,3). These could be compared to the Jimma and Debre Markos University report. 26.9% and 44.7% of the population engaged in sexual activity, with 57.6% and 69.1% using condoms, respectively, and 77% and 88.5% using them regularly. (42)(43)

A cross-sectional study was conducted on students at Gondar and Madawalabu universities. Of those, 51.8% and 42.3% reported having had previous sex, and more than half of those (53.6 and 56.2%, respectively) never used a condom. (12) (44)

Regular undergrads at Mekelle University and private colleges in Mekelle City participated in a facility-based cross-sectional study design. Overall, 41.2% and 25.6% of students reported having had sex, while only 29.3% and 33.7% of those who had sex reported frequently using condoms, respectively. Among Jigjiga University's sexually active students, a descriptive cross-sectional study was undertaken, and only 47.6% of the participants used condoms. (45)(46)

At Aksum University's Shire Campus, a cross-sectional institutional study was undertaken. Of the 60 percent of students who said they had ever engaged in sexual activity, 83.5% said they used condoms inconsistently. Additionally, only 66.1% of students at Mizan-Aman Polytechnic College (MAPtC) who were sexually active in the past month used condoms. (47)(48)

In March and April of 2016, 524 young people in Addis Ababa took part in a comparative cross-sectional study. Of them, 48% had started having sex, and 47% had not used a condom in the previous 12 months. (49)

39% of research participants, undergraduate students at Addis Ababa University, reported having had sex at the time of the survey in November and December 2013. Of those, 29% reported using a condom for the first time, and 56.2% reported using one in the previous 12 months. Of

those who had used a condom at least once in the last year, more than half—55.5%—did so on a regular basis. (50)

2.2 Factors associated with increasing unprotected sex

Research conducted on sexually active female undergraduates at sixteen Chinese university campuses in Wuhan revealed that women completing their middle schooling in rural areas and those who were younger than twenty years old were less likely to use condoms during their first sexual experience. (22)

A cross-sectional study in Iran, the most common reason for not using condoms regularly was that they were not readily available in 38.8% of cases. Other common reasons included disliking it in 29% of cases, not thinking it was necessary in 29% of cases, having a partner object in 21.9% of cases, and condoms being too expensive in 16.9% of cases. 9.8%, condom itchiness 8.2%, desire for a child 3.8%, and other 2.7%. (25)

The sexual practices, condom use, and other forms of contraception among Canadian youth aged 15 to 24 were examined using data from the Community Health Survey. The following factors contributed to people's decision to skip the condom the last time they had sex: being in a monogamous relationship (47.6%), using another method of birth control (47.2%), believing they were not in danger of a STI (24%) or pregnancy (18.2%), disliking them (21.8%), and thinking they were not at risk of becoming pregnant (24.0%). (32)

The age at first sex (between 9 and 16 years old), alcohol use, bereavement linked to violence, being a woman, having less than four years of education, never having worked, and having a poor understanding of the treatability of AIDS were all independently linked to not using condoms at the last sexual encounter, according to a cross-sectional study among Brazilian youth aged 15 to 24. (31)

Condoms were not widely available, which resulted in less sexual enjoyment during unprotected intercourse, according to a descriptive cross-sectional study conducted at Goma University in the Democratic Republic of the Congo. The fact that many cultures and faiths forbid the use of condoms was another thing they discovered to be unfavorable. However, a descriptive cross-sectional investigation examined the variables linked to regular condom use across two institutions in Nigeria. The causes of irregular condom use were lack of trust (27.1%),

perceptions that condoms lessen sexual pleasure (25.8%), condom scarcity (24.1%), distaste for condoms (22%), and inability to buy (1%). (39)(40)

In a university-based quantitative cross-sectional study, undergraduate students at Arab Minch University who had sex without a condom in the previous year most frequently reported reasons for not using a condom were: condom not easily accessible (34%), trusting partner (18.1%), not comfortable (17%), partner projection (13.8%), reduce sexual pleasure (10.6%), and embrace to buy (6.4%). However, compared to their male counterparts, female students were more likely to use condoms inconsistently, according to a cross-sectional study conducted among private college students in Mekelle City, North Ethiopia. For example, students who were sexually active stated that they never used condoms because they were uncomfortable (41.3%), unavailable (19%), believed in their partner (17%), had religious objections (10%), or were embarrassed to buy condoms (8%). (51,46)

At Debre Birhan University, a cross-sectional investigation found male students reported using condoms more frequently than female students did. Non-khat users were 60% more likely to regularly use condoms than khat chewers. Compared to students who did not report having several sexual partners, those who did reported using condoms less frequently. Students from rural villages and small towns were less likely to regularly use condoms than students from large towns and cities. (52)

Among regular undergraduate students at Debremarkos, the most frequent reason for not using or missing a condom among non-users is relationship trust (56.1%), followed by difficulties in obtaining a condom (20%), partner rejection (12.3%), decreased sexual enjoyment (4.6%), hatred of condoms (3%), and a lack of awareness of condom usage (3%). (43)

According to a cross-sectional study conducted at Jimma University, trusting one's partner was the main justification for having sex without a condom (30.3%). Other reasons included not feeling comfortable (21.1%), not liking it (15.5%), not being accessible (14.1%), reducing sexual pleasure (12%), feeling embarrassed to purchase (12%), partner objecting (11.3%), not thinking it was necessary (8.5%), being in a hurry (10.6%), and not believing in condoms (3.5%). Comparatively, the most common causes of inconsistent condom use were shame over asking for sex, decreases in sexual pleasure (18.8%), and fear of buying condoms from stores or pharmacies

(13.7%), according to a cross-sectional institution-based study on sexual initiation and factors related to it among undergraduate students at Addis Abeba University. (42, 50)

2.3 factors facilitating condom use

Research conducted at sixteen university campuses in Wuhan, China, revealed that those who were using condoms for the first time were 3.88 times more likely to have used them regularly in the previous year. (22)

A total of 2054 undergraduates from mainland China who had had sexual experience were included in the study. Those who consistently used condoms included well-educated medical students, parents who were still happily married, heterosexual women, people with correct condom knowledge, lower living expenses, high levels of self-efficacy, people who were more knowledgeable about local volunteer organizations and national AIDS policies, people who started using condoms late, people who had regular sex, and people who believed they were at a lower risk of contracting HIV. Nevertheless, there were no statistically significant differences between consistent and inconsistent condom users in terms of grade, residential location, father's education, or mother's education . (19)

A cross-sectional study conducted among 1017 first- and fourth-year students at the University of Pristina in Kosovska Mitrovica, northern Kosovo, revealed that not knowing what to do with contact after finding out someone is HIV positive, not renting an apartment or owning a home, going to nightclubs on the weekends, not using drugs or opioids, and being single were the most common causes of stress.(27)

Using a multistage probability sample of 1,093 Croatians between the ages of 18 and 24, the use of condoms by young adults in Croatia was investigated. Contrary to views about condoms and past condom usage, knowledge of HIV/AIDS and an individual's assessed risk of catching the virus had little effect on heterosexual condom use. (29)

The Community Health Survey was used to investigate youth in Canada between the ages of 15 and 24. The chance of wearing a condom decreased with age (79.9% of 15–17-year-olds and 55.1% of 20–24-year-olds), with males being more likely than women to have done so. Furthermore, 66.3% of those who had multiple partners during the previous year reported using condoms, as opposed to 55.9% of those who had just one partner. (32)

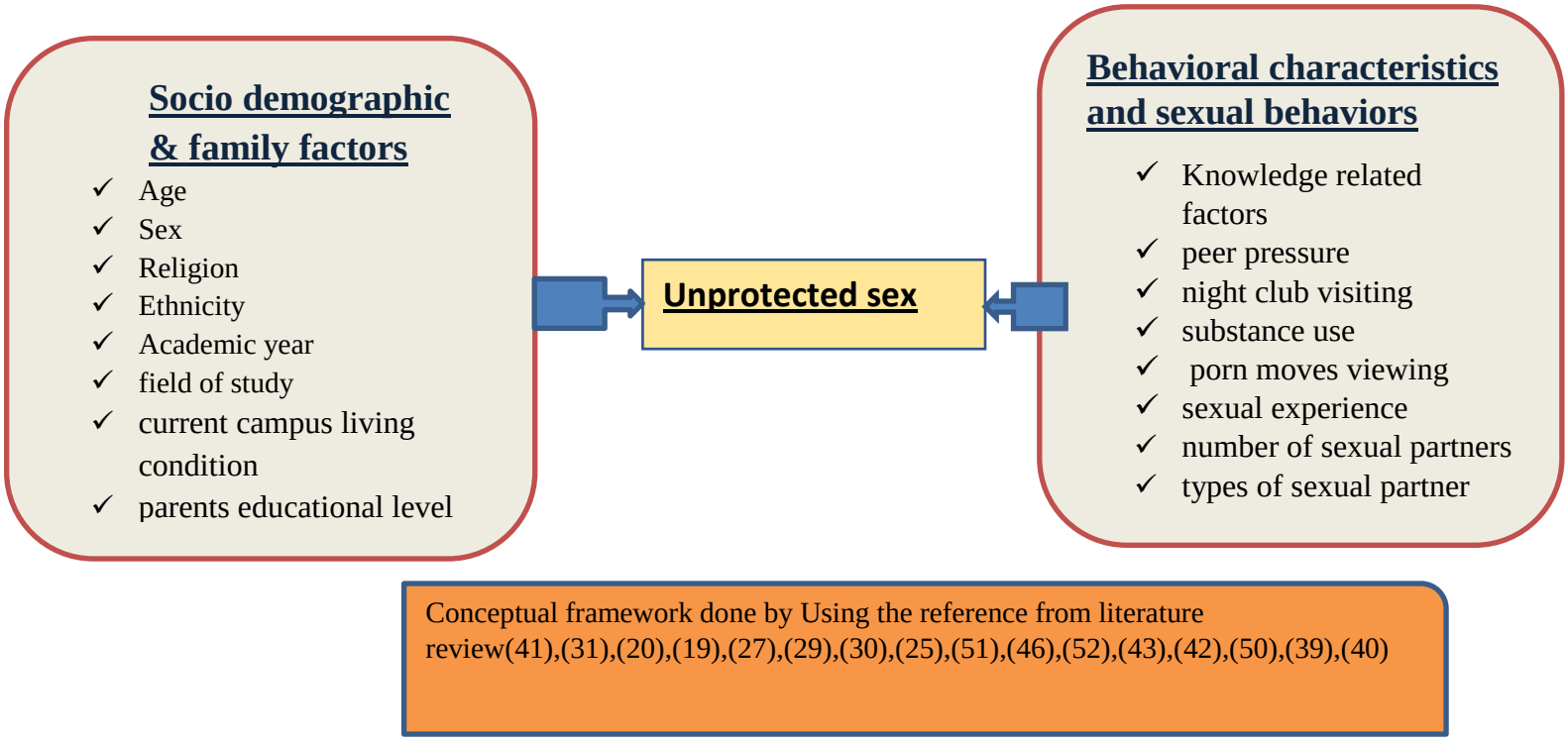
According to research conducted at US urban public universities, men were twice as likely as women to use condoms during sexual activity, and students with one vaginal partner were four times more likely to have used condoms in the previous year than those with five or more partners. When comparing people with 2-4 vaginal partners to those with 5 or more, the likelihood of using condoms in the last year was three times higher. (30).

In a descriptive cross-sectional survey, most students at Goma University in the Democratic Republic of the Congo used condoms because they thought it was a good approach to avoid getting pregnant, contracting STIs, and getting HIV/AIDS. (39)

Consistent condom usage was significantly connected with condom self-efficacy, attending school in an area with a high HIV incidence, having male sex, and having only one sexual partner in the preceding year, according to a descriptive cross-sectional study conducted on two universities in Nigeria. (40)

In a cross-sectional survey of Debremarkos University students, 68.2% of participants reported using condoms to prevent HIV/STIs, with 27.65% citing contraception as their primary reason and 4.2% citing partner insistence. A cross-sectional study conducted among Jimma University students found that men were more likely than women to routinely use condoms, at 73.5% and 46.4%, respectively.(43,42)

2.4 Conceptual frameworks



Conceptual framework done by Using the reference from literature review(41),(31),(20),(19),(27),(29),(30),(25),(51),(46),(52),(43),(42),(50),(39),(40)

3. Objectives

3.1 General Objectives:

- ✓ To determine prevalence of sexual activity and associated factors of unprotected sexual practice among AAU CHS undergraduate students.

3.2 Specific Objectives:

- ✓ To determine prevalence of sexual activity of AAU CHS undergraduate students.
- ✓ To determine prevalence of unprotected sexual practice of AAU CHS undergraduate students.
- ✓ To identify factors that affect the use of condoms of AAU CHS undergraduate students.

4. Methods:

4.1 Study design and period:

This institutionally based descriptive cross-sectional study design was carried out between January and March of 2024 GC.

4.2 Study area:

The Addis Ababa University College of Health Science in Addis Ababa, Ethiopia, was the site of this investigation. The CHS consists of one teaching hospital, Tikur Anbessa Specialized Hospital, and four schools: the School of Medicine, Pharmacy, Public Health, and Allied Health Sciences. Over 5,000 students are enrolled at the CHS right now, and over 600 staff members are employed full-time. The college now offers eight undergraduate programs in addition to more than seventy postgraduate degrees.

4.3 Source of population:

All Addis Ababa university collage of health science undergraduate students.

4.4 Study population:

All Addis Ababa university collage of health science regular undergraduate students learning during study period.

4.5 Inclusion and Exclusion criteria:

4.5.1 Inclusion criteria:

- ✓ Undergraduate students learning in AAU CHS during study period
- ✓ Students who agree for participation

4.5.2 Exclusion criteria:

- ✓ All AAU CHS students physically not available during data collection.
- ✓ All students who are disabled to fill the questioners or cannot read and write.
- ✓ All AAU CHS students who are married.
- ✓ Students who are not agree for participation.
- ✓ Students who are first year because they didn't chose there department

4.6 Sample size and sampling procedure:

4.6.1 Sample size determination:

Since there hasn't been a comparable study conducted at the national level on this topic, the sample size was calculated using the single population proportion formula with a P value of 50%, a 95% confidence interval with a 5% margin of error, and a 10% non-response rate due to the sensitive nature of this topic.

$$N = \frac{(Z\ a/2\ )^2\ pq}{d^2} \qquad p=50\% =0.5 \quad q=1-p,\ Z\alpha=1.96 \text{ and } d=0.05$$

Where: n = sample size, P = proportion of unprotected penetrative vaginal sexual intercourse , q= 1- p, d = desired degree of precision (5%), Z= is the standard normal value at 95% confidence level.

Then $$\mathbf{n} = \frac{(1.96)^2 \text{ x } 0.5 \text{ x } (1-0.5)}{(0.05)^2} = 384$$

Adding 10% of no respondent participants; 384 + 0. 1x 384= 422

4.6.2 Sampling procedure:

From all AAU CHS undergraduate students, 422 students, either sexually active or sexually inactive, were selected from each of the eight departments and from academic year two to academic year six. They received a fraction of the sample size of 422 in proportion to the number of students in that department and year of study. Simple random sampling method (until the sample size is achieved by taking the first students who fill out the questionnaire in proportion to their class size) was used by taking a list of students from the registrar.

4.7 Study variables:

4.7.1 The dependent variables:

- ✓ Prevalence of sexual practice and unprotected sex

4.7.2 The independent variables:

- ✓ **Socio-demographic characteristics:** age, sex, year of study, field of study, residence, religion, religious attendance, ethnicity, current campus living condition, parents educational level, parents occupation, income of the respondents and their parents,
- ✓ **Behavioral Characteristics:** peer pressure, night club visiting, substance use, porn moves viewing,
- ✓ Sexual behavior**:** sexual experience, number of sexual partners, types of sexual partner .
- ✓ **Knowledge related factors**: where to get condoms, knows that condoms can prevent pregnancy, HIV/AIDS or other STIs, condoms reduce sexual pleasure, uncomfortable, condom availability.

4.8 Operational definitions:

- ✓ **Substance use**: Use of substances such as alcohol, khat, cigarette or other drug at least once in the past 3 months.

- ✓ **Multiple sexual partners**: Having heterosexual vaginal sexual contact with two or more partners in the past 3 months.
- ✓ **Sexually activity**: Students who claimed to have engaged in heterosexual vaginal sexual act at least once prior to the study period.
- ✓ **Unprotected sexual practice:** An act of heterosexual penetrative vaginal sexual intercourse performed without the use of condom for the prevention of STDs including HIV and for prevention of unwonted pregnancy.
- ✓ **Consistent condom use:** Use of condom in every sexual encounter in the past 3 months.
- ✓ **Marriage**: is a legally recognized union between two individuals (male and female) that come with legal rights, responsibilities, and obligations.
- ✓ **Friend**: An individual is someone with whom one knows and shares a mutual affectionate bond; they are typically not related to family or sexual ties.
- ✓ **Boyfriend**: a consistent male partner with whom one engages in romantic or sexual activity.
- ✓ **Girlfriend**: a consistent female partner with whom one engages in romantic or sexual activity.

4.9 Data collection tools and procedures:

Structured questionnaires were modified from the standard Ethiopian Demographic and Health Survey (EDHS) (18), structured in accordance with the specific goal they might address for this study, and reviewed in light of pertinent literature (42–52). The supervisors and data collectors both received training on the data collection tool. The data collectors were AAU CHS students enrolled in eight departments, one from each department, and two supervisors were chosen. The information was gathered using a self-made, anonymous, semi-structured, and pre-tested questionnaire. Prior to real data collection, 5% of the sample size completed the questionnaires for pre-testing, and adjustments were made to the instruments as a consequence.

The questionnaire included sociodemographic data, behavioral and knowledge related factors, sexual behavior and condom use, and questionnaire not analyzed on knowledge and attitude of HIV transmission for whom not filling the 3rd part of questionnaire to make equal time for all participants. In order to maintain the natural flow of ideas questionnaires was from general to specific and from easy to tough topics. The principal investigators were following the data

gatherers. Data was collected in class after they finished their lecture based on internet based Google form after informed consent was taken. Data collection from each class was held by informing through there telegram group after required number of participant fill the Google form. All participants were aware that the answers they provide kept private.

4.10 Data processing and analysis:

Each questionnaire was reviewed for completion following data collection using the code provided in the Google Sheet. The collected data was transferred to an Excel sheet from the Google sheet and was cleaned and coded in the Excel. After cleaning the data, it was exported to SPSS version 25 for data analysis. Tables, graphs, and charts were used to further illustrate the descriptive statistics. Bivariate and multivariate logistic regression were used to calculate the odd ratio and 95% confidence interval (CI) for the relationship between the dependent and independent variables. The multivariable logistic regression model was then expanded to include all variables in the bivariate analysis with p values less than 0.25. If a factor's p-value is less than 0.05 in the multivariable analysis, it was regarded as a significant predictor.

4.11 Data quality control:

The primary investigator was responsible for overseeing the data collectors. The structured questionnaire was meticulously designed to guarantee both the procedure and quality of data gathering.A one-day training session on data collection methodologies, ethical considerations, and the study's objective is conducted by the principal investigator for data collectors. Every day, the principal investigator checked the gathered data to make sure it was accurate and consistent.

4.12 Ethical Approval:

This research was evaluated by the ethics committee of the Obstetrics and Gynecology Department of Addis Ababa University School of Medicine. Prior to data collection, ethical approval was requested from TASH development research and project center. Participants were given a thorough description of the study and its protocols prior to data collection, and their informed consent was obtained. It was possible to refuse or stop participating in the study at any time, and the option to ask any questions they had to ask was provided to study participants. The

participant's names were never utilized in conjunction with data collection for anonymity purposes, and all other employee data were kept completely confidential and anonymous.

4.13 Dissemination of results:

Important results and ideas were generated after data analysis. The department of gynecology and obstetrics will be given the research findings. Additionally, the findings will be presented at conferences and professional society gatherings. Furthermore, the results will be shared publicly and published in a pertinent scientific journal. The information will also serve as a baseline for upcoming research and initiatives.

5. Result

5.1 Sociodemographic characteristics of the study participants

422 people participated in this survey, yielding a 100% response rate. The majority of research participants (86.5%) were between the ages of 19 and 24, and 56.6% of them were female. Of them, 49.3% regularly visited a church or mosque, and fifty-five percent identified as orthodox Christians. 28.3% of the study participants were third-year students, and nearly 48 percent of the participants were medical students. Of the participants, the mother and father had higher education completion rates of 34.1% and 48.1%, respectively. The monthly income of 37% of the survey participants' families was between 5000 and 10,000 ETB, while 31.3% of the participants had monthly pocket money exceeding 2000 ETB. Sixty-six percent of the participants families were living in the city, and eighty-three percent were on campus.

Table 1. The sociodemographic characteristics of the study participants among AAU CHS undergraduate students Addis Ababa Ethiopia, 2024.

Variable	Category	frequency	Percent
Age in years	19-24	365	86.5
	≥25	57	13.5
Sex	Male	183	43.4
	Female	239	56.6
Religion	Muslim	92	21.8
	Orthodox	231	54.7

	Protestant	86	20.4
	Catholic	8	1.9
	Adventist	5	1.2
Visiting church/mosque	Regularly	208	49.3
	Sometimes	160	37.9
	only during holy days	32	7.6
	Not visiting at all	22	5.2
Department	Medicine	201	47.6
	Nursing	42	10.0
	Pharmacy	66	15.6
	Anesthetics	29	6.9
	Medical radiologic technology	22	5.2
	dental medicine	24	5.7
	Midwife	15	3.6
	laboratory science	23	5.5
Academic year	2nd years	105	24.9
	3rd years	78	18.5
	4th years	119	28.2
	5th years	61	14.5
	6th years	59	14.0
Maternal education level	Unable to read and write	32	7.6
	read and write	74	17.5
	Completed primary education	86	20.4
	complete secondary education	86	20.4
	Completed higher level education	144	34.1
Fathers' education level	Unable to read and write	12	2.8
	read and write	64	15.2
	Completed primary education	66	15.6
	complete secondary education	77	18.2
	Completed higher level education	203	48.1
Family monthly income	<5000	27	6.4
	5000-10000	154	36.5
	10000-20000	115	27.3
	>20000	126	29.9
Monthly pocket money	None	59	14.0
	100-500	84	19.9
	501-1000	90	21.3
	1001-2000	57	13.5
	>2000	132	31.3
Residence of the family	Rural	63	14.9
	Small town	125	29.6
	City	234	55.5
Current campus living condition	Live in university dormitory	339	80.3
	Live with family (parents)	83	19.7

5.2 Behavioral and knowledge related characteristics of the study participants

Nearly all of the participants are aware that using a condom can prevent HIV, and 69.7% are aware that condoms can prevent other STDs. Ninety percent of the participants are aware that wearing a condom can prevent pregnancy. In the past three months, 28.2% and 6.2% of the participants, respectively, had consumed alcohol and chewed khat. 3.1% of participants had visited a nightclub in the previous three months, and 6% smoked cigarettes.

Table 2. Behavioral and knowledge related characteristics of the study participants

Variable	Frequency	Percent
condom prevent HIV		
Yes	407	96.4
No	12	2.8
I don't know	3	0.7
Does condom prevent sexually transmitted disease other than HIV?		
Yes	294	69.7
No	108	25.6
I don't know	20	4.7
Does condom prevent pregnancy		
Yes	380	90.0
No	37	8.8
I don't know	5	1.2
Drunk alcohol the last three month		
Yes	119	28.2
No	303	71.8
Chewed khat for the past 3 months		
Yes	26	6.2
No	396	93.8
Smoked for the past 3 months		
Yes	25	5.9
No	397	94.1
Visited night club for the past 3month		
Yes	13	3.1
No	409	96.9
viewed porn movies for the past 3 months		
Yes	101	23.9
No	321	76.1

5.3 Sexual behavior related characteristics of the study participants

In this study, 28% of the study participants had a history of sexual intercourse, while 72% of them had no history of sexual intercourse. Of those who reported having had sex in the past, 91.5% had a boyfriend or girlfriend, and 70.3% had started having sex after the age of twenty. Sixty-one percent of the participants reported having only one sexual partner, and sixty-two percent said they were initiating sex because they had fallen in love. Among the participants, 72% had ever used a condom.

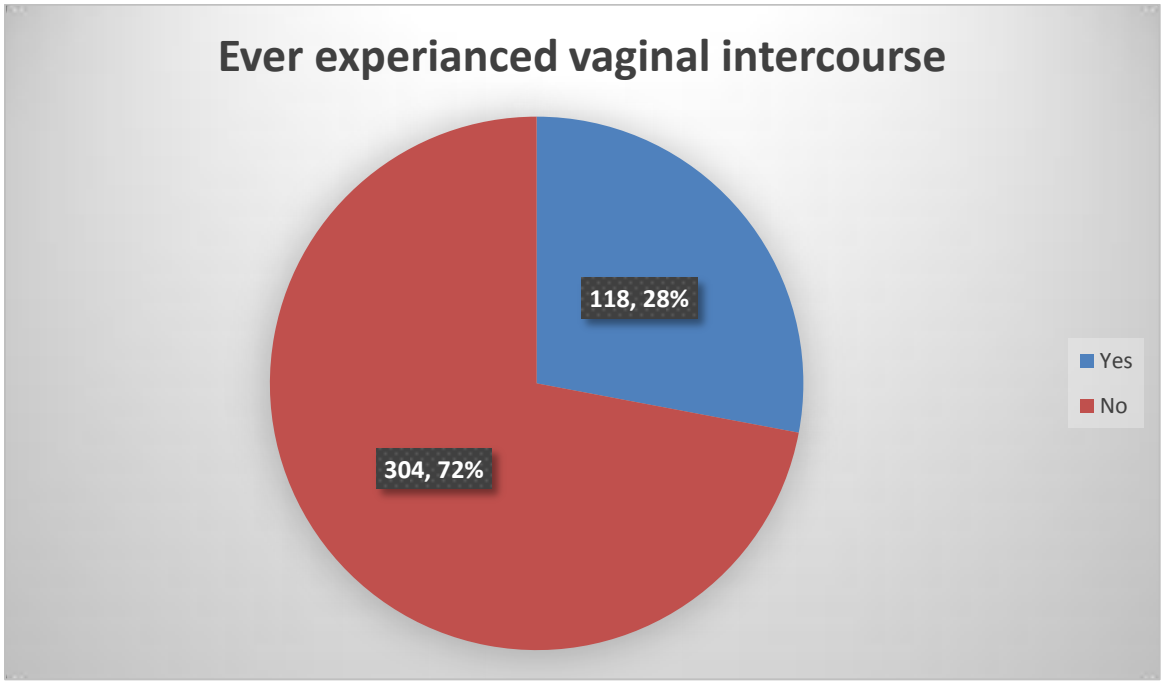


Figure 1. The magnitude of vaginal sexual intercourse among undergraduate health science student in Addis Ababa university.

Table 3. Sexual behavior related characteristics of the study participants

Variable	Frequency	Percent
Age at first intercourse		
17-20	35	29.7
>20	83	70.3
Personal type of sexual partner(n=118)		
acquaintance	2	1.7
boyfriend/ girlfriend	108	91.5
commercial sex worker	2	0.8

Just friend	6	5
Reason for starting sex(n=118)		
Peer pressure	28	23.7
Had desire	4	3.4
Fall in love	71	60.2
Had desire	15	12.7
Total number of sexual partners until now		
One	72	61
Two and above	46	39
Ever use condom		
Yes	87	73.7
No	31	26.3

5.4 Sexual behavior characteristics in the last three month

The finding of the study showed that 47% of the participants who had sexual intercourse in the past 3 months had unprotected sex, while 53% of them had protected sex.

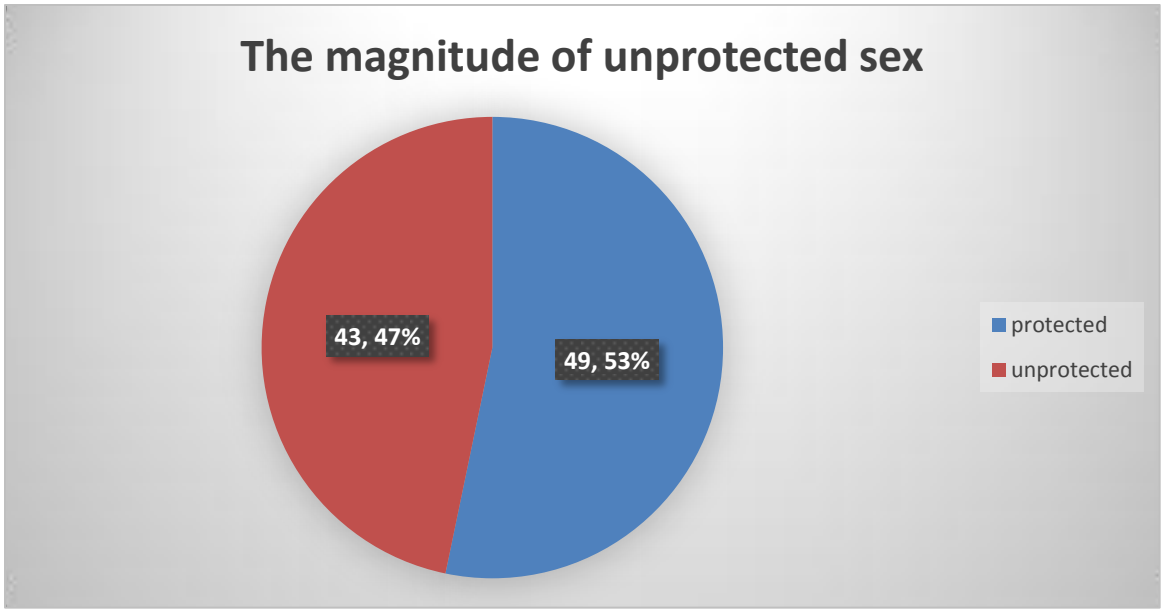


Figure 2. The magnitude of unprotected sex among undergraduate health science student in Addis Ababa, 2024.

Of those who reported having had sex in the past, 78% reported having done so in the last three months, and 97.8% reported having done so with their girl/boyfriends. Of individuals who had engaged in sexual activity within the previous three months, 77.2% had used a condom during

that time. Sixty-nine percent of those who used condoms did so during every sexual activity. Sixty-six percent of the participants got their condoms from the pharmacy, and nearly ninety-six percent of them utilized them to avoid getting pregnant.

Table 4. Sexual behavior related characteristics in the last three months

Variable	frequency	percent
Sexual intercourse for the past 3 months (n=118)		
Yes	92	78.0
No	26	22.0
Total number of sexual partners in the past three months (n=92)		
One	78	84.8
Two	13	14.1
Three	1	1.1
Situation of more than one sexual partner (n=14)		
After separated from the previous sexual partner	6	42.8
During in relation with your boyfriend/girl friend	8	57.2
With whom to do sexual intercourse (multiple answers)		
Boyfriend or girlfriend	90	97.8
Commercial sex worker	3	3.3
friend	3	3.3
Use condom the past three month		
Yes	71	77.2
No	21	22.8
Frequency of condom utilization (n=71)		
In every sexual activity	49	69
Sometimes	22	31
Reason for condom utilization (n=71)		
Prevent pregnancy	68	95.8
Prevent HIV	46	64.8
Prevent other STI	5	7
Place of getting condom (multiple answers) (n=71)		
Pharmacy	51	71.8
From shop	21	29.6
Sexual partner	5	7
Other health institution	1	1.4
Reason for not used condom (multiple answers) (n=43)		
Trust parent	35	81.4
Know HIV status there sexual partner	10	23.3
Use other Family planning method	11	25.6
Condom decrease pleasure	2	4.7

5.5 The determinant factor of unprotected sex among study participants

Bivariate logistic regression analysis showed that unprotected sex was associated with factors such as alcohol use, having a single sexual partner, age at first sex, afamily residency, and years of education.

According to the multivariate logistic regression, study participants who had consumed alcohol within the previous three months had 1.6 times higher rates of unprotected sex compared to those who had not use alcohol (AOR=1.6, 95%CI=1.12, 5.48). A study participant who had only one sexual partner experienced a 4.6 fold increase in unprotected sex compared to those who had multiple partners and a 4.4-fold increase in unprotected sex compared to those whose first sexual experience was between the ages of 17 and 20 (AOR=4.4, 95%CI=1.05, 18.56).

Table 5. The bivariate and multivariate logistic regression of association between unprotected sex and independent variable among undergraduate health science student in Addis Ababa university student.

variable	Unprotected sex		p-value	COR with 95%CI	P-Value	AOR with 95%CI
	Yes	No				
Age in years						
19-24	32	42	1		1	
>=25	11	7	0.178	2.1(0.72, 5.91)	0.471	1.8(0.35, 9.54)
Academic years						
2nd years	2	14	1		1	
3rd years	7	10	0.078	4.9(0.84, 28.73)	0.074	6.3(0.84, 47.66)
4th years	10	15	0.073	4.7(0.87, 25.14)	0.128	4.5(0.65, 310.21)
5th years	14	3	0.000	3.3(2.47, 26.52)	0.006	**11.2(2.37, 46.66)**
6th years	10	7	0.011	10.0(1.71, 58.63)	0.011	**5.6(2.63, 48.48)**
Residency of their family						
Rural	6	11	1		1	
Small town	13	18	0.653	1.3(0.39, 4.50)	0.957	1.1(0.22, 5.07)
City	24	20	0.012	2.2(1.69, 7.01)	0.552	1.6(0.36, 6.88)
Smoked cigarette for the past three months						
Yes	10	8	0.140	1.6(0.55, 4.38)	0.137	3.6(0.66, 19.98)
No	33	41	1		1	
Drunk alcohol for the past three month						
Yes	23	14	0.016	2.9(1.21, 6.81)	0.046	**1.6(1.12, 5.48)**
No	20	35	1			
Age at first sex						

17-20	5	22	1		1	
>20	38	27	0.001	6.2(2.08, 18.40)	0.042	**4.4(1.05, 18.56)**
Sexual partner						
One	32	22	0.005	3.6(1.47, 8.67)	0.014	**4.6(1.37, 15.32)**
Two or more	11	27	1		1	

6. Discussion

The finding of this study found that 28% of the participants had an experience of vaginal sexual intercourse. this finding was supported by the study done in haramaya, 28% (10), Arba-minch University, 32% (3) Wolaita Sodo,35%(13), Jima University 26.9%(42) and private colleges in Mekelle City,25.6%(46). This finding was higher than the study done in Western Province of Sri Lanka (21.2%) (24). the finding also lower than the study done in Croatia (85%) (29), American College Health Association, 64.2% (30), Canada, 59.6% (31), KwaZulu Nata, South Africa, 81.2% (34), Mbarara University of Science and Technology in Uganda, 60.3% (35), Kenya's Jomo Kenyatta University of Agriculture and Technology, 66.2% (38), Botswana University,63.9%(39), Debre Markos University,44.7%(43), Gondar 51.8%(12) Madawalabu, 42.3%(44)Universities, Mekelle University,41.2% (45) Aksum University's Shire Campus,60%(47). This difference was may be due to difference in sexual attitudes and behaviors difference, socio-economic status, and religious belief, study design, sample size, data collection methods. The other difference was may be due to difference in societal attitudes, effectiveness of sexual education programs, influence of peer groups and social networks. Difference in sexual health services, and counseling, policies regarding student behavior, including dormitory rules, campus security, and disciplinary actions, can influence sexual engagement among students.

In this study 47% of the participants had unprotected sex from those having sexual activity in the last three months. From those having unprotected sex 49% of them were didn't use condom at all and 51% of the participants were use condom intermittently but not consistently. The finding of this study was similar with the study done in Mbarara University of Science and Technology in Uganda (35), Wolita soda, 46% (41), Gondar university, 53.6% (12) and Medawolabo university, 56.2% (44). The finding of this study was lower than the study done in Western Province of Sri

Lanka, 85.8% (24), Iran (67.1%) (25), Erbil Governorate, 88% (26), KwaZulu Nata, South Africa, 71.5% (34), Haramaya, 79.6% (10). The finding of this study was higher than the study done in Kenya's Jomo Kenyatta University of Agriculture and Technology, 27.2% (40), Jimma university, 23% (42), Debre Markos university, 11.5% (43), Walita Sodo University, 35% (13) and Debirebrhan university, 36.5% (42). This difference was may be due to cultural attitudes toward sex and contraception can greatly influence condom use. Difference in the quality and comprehensiveness of sex education programs. Difference in awareness of sexually transmitted infections (STIs) and pregnancy risks. Difference in social circles and peer behaviors. Difference in gender roles and power dynamics within sexual relationships can influence condom use. Difference in personal attitudes towards condoms, such as perceived inconvenience or reduced pleasure, can affect utilization. Differences in age, socioeconomic status, and religious beliefs can also impact condom use.

In this study the cause of not use or irregular condom use were trusting parent (95.7%), know HIV status (42.6%), Use other FP (23.4%) and decrease sexual pleasure by condom (4.3%). This finding was supported by the study done in Nigeria, Jimma University students and Arab Minch University (40,42, 51).

Study participants who were drunk alcohol in the past three months were 1.6 folds increase its unprotected sex compared to those of its opposite compartment (AOR=1.6, 95%CI=1.12, 5.48). This finding was in line with the study done in Brazilian (31). This was may be due to alcohol affects cognitive functions and decision-making abilities. When students are intoxicated, their ability to make safe and rational choices is compromised, leading to a higher likelihood of engaging in risky behaviors like unprotected sex. When students are drinking, they might not plan ahead for sexual encounters. This lack of planning can lead to not having condoms for protection.

Study participant whose age of first sex >20 years had 4.4 folds increase its unprotected sex compared to those of age of first sex 17-20 years (AOR=4.4, 95%CI=1.05, 18.56). This finding was in line with the study done in Canada (32). This was may be due to older students might incorrectly assume they are less at risk for STIs due to their age or past experiences, leading to decreased use of protection.

Study participant having only one sexual partner had 4.6 folds increase its unprotected sex compared to those of having more than one sexual partner (AOR=4.6, 95%CI=1.37, 15.32). This finding was in line with the study done in Wuhan, China (22), Nigeria (40), public universities in the United States (30). This was may be due to high levels of trust in a monogamous relationship can lead partners to feel that they do not need to use condoms or other forms of protection. They might trust that their partner is free from STIs and/or is using another form of contraception effectively. Students might think that as long as they are faithful, the risk of contracting an STI is negligible, leading to reduced motivation to use condoms consistently.

7.Conclusion of the study

The finding of this study found that 28% (n=118) of the study participants had engaged in sexual activity until study period. From those having a sexual history 77.9% (n=92) and from the total participants 21.8% had sexual history in the last three months. From those having sexual history in the last three months, 47% (n=43) of the participants had unprotected sex. From those having unprotected sex 49% of them were didn't use condom at all and 51% of the participants were use condom intermittently but not consistently. The determinant factor of unprotected sex were academic year of 5th and 6th were 11.2 times (AOR=11.2, 95%CI=2.37, 46.66) and 5.6 times (AOR=5.6, 95%CI=2.63, 48.48), drunk alcohol in the past three months were 1.6 folds increase its unprotected sex (AOR=1.6, 95%CI=1.12, 5.48), age of first sex >20 years had 4.4 folds increase its unprotected sex (AOR=4.4, 95%CI=1.05, 18.56) and having only one sexual partner had 4.6 folds increase its unprotected sex (AOR=4.6, 95%CI=1.37, 15.32).

8. limitations of the study

- ✓ Because sexually active students are small in size for factor association this findings may not be generalized.
- ✓ There is a possibility of under reporting of sexual behavior, because the topic by itself assesses sensitive issues related to sexuality.

9. Recommendation

- ✓ Since the prevalence of unprotected sexual practice is high It is recommended the university to start programs on sexual and reproductive health education for students.
- ✓ Consistent condom use should be encouraged among the students irrespective of their sexual partner type.
- ✓ Further study needs to be conducted to explore unprotected sexual practice among different groups in Ethiopia.

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11.Annexes

Annex 1: Informed consent sheet

Addis Ababa University, College of Health Sciences, Department of Obstetrics and Gynecology, Questionnaire designed to determine prevalence of sexual activity and associated factors of unprotected sexual practice among AAU CHS undergraduate students.

Dear/sir

Hello, my name is _____. I am working as a data collector for the study being conducted in AAU CHS by Dr. Tadele Sewmehon who is studying for specialty of Obstetrics and Gynecology at Addis Ababa University, College of Health Sciences. I kindly request you to give me your attention to explain about the study and about you being selected as the study participant.

Title of the study: unprotected sexual practice and associated factors among AAU CHS undergraduate students

Purpose of the study :To assess the Prevalence and associated factors of unprotected sexual practice among AAU CHS undergraduate students

Procedure: By simple random sampling method by taking list of students of AAU CHS undergraduate students which belongs to every departments and every year of study from the office of the registrar.

I respectfully request that you take part in this research. Filling out the questionnaire may take up to 40 minutes of your time.

Benefits: There is no direct benefit to you for participating other than the satisfaction because you are contributing to increasing knowledge in this area.

Risks: This research carries no risk. The information you will supply has been protected with precaution.

Confidentiality: The information you give us will be kept private. Nothing will be available to identify you. The study's conclusions will apply to the entire study population and won't be specific to any one person. The survey will be coded to prevent revealing names. There won't be any mention of the research in any written or spoken reporting that would connect participants to it. The completed surveys will be sent in via a Google form. You are free to end the participation at any moment or to decline to participate.

Are you willing to participate in the study? ? 1- Yes ……. Proceed to fill the questionnaires

2 – No……Thank you

Name of Enumerator _____ Signature _____

Questionnaire Code_____

Name of the supervisor _____Signature _____

Address of principal investigator;

Dr. Tadele Sewmehon

Mobile phone; +251927616818

E-mail; sewmehontade123@gmail.com

Annex 2: Individual consent form

A study on "unprotected sexual practice and associated factors among AAU CHS undergraduate students" has come to my attention. I willingly agree to participate in this study since there is no danger involved and there is no benefit to doing so. I am guaranteed that I can withdraw my consent at any moment without incurring any fees or losing my benefits, and I am also advised

that it might take up to 40 minutes to complete the questionnaire. I've been assured that confidentiality will not be compromised and my identity will remain anonymous. I've received explanations in a language I can comprehend for all the information I require. I've read the material above, and I'm game to take part in the research.

By signing below, I confirm that I have read and understand this consent form and agree to participate in the study.

Signature of the participant …….

Date …….

Annex 3: Data Collection tool (Questionnaire)

Part – 1: Socio demographic Characteristics			
Code	Questions	Response	Remark
1.1	Age	Specify..	
1.2	Sex	1. Male 2. Female	
1.3	Ethnic Group	1. Tigrey 2. Amhara 3. Oromo 4. Others ….	
1.4	religion?	1. Orthodox 2. Protestant 3. Catholic 4. Muslim 5. Others….	

1.5	Visiting church/mosque	1. Regularly 2. Some times 3. Only during holidays 4. Not visiting at all	
1.6	Department	1. Medicine 2. Dental medicine 3. Medical Laboratory 4. Nursing 5. Midwifery 6. Anesthesia 7. Pharmacy 8. Radiology technology 9. Physiotherapy	
1.7	Year of study	1. Year one 2. Year two 3. Year three 4. Year four 5. Year five 6. Year six	
1.8	What is your mother's educational level?	1. She can't ead and write 2. She can Read and write 3. Completed Primary school 4. Completed Secondary school 5. Completed Higher level Education	
1.9	What is your father's educational level?	1. He can't read and write 2. He can Read and write 3. Completed Primary school 4. Completed Secondary school 5. Completed Higher level Education	

1.10	Average Monthly Income of the family in birr ?	Specify	
1.11	Your average Monthly Income in birr?		
1.12	Residence of family(Home town residence)	1. Rural 2. Small town (woreda level) 3. City(regional cities or chartered cities)	
1.13	Current campus living condition(Current accommodation)	1. Live in university dormitory 2. Live with parents (family) 3. Rent	

Part –2 behavioral and knowledge related factors			
Code	Questions	Response	Remark
2.1	Does condom prevent HIV?	1. Yes 2. No 3. unknown	
2.2	Does condom prevent sexually transmitted disease other than HIV ?	1. Yes 2. No 3. unknown	
2.3	Does condom prevent pregnancy?	1. Yes 2. No 3. Unknown	
2.4	Have you drink Alcohol for the past 3 month	1. Yes 2. No	

2.5	Have you chewed khat for the past 3 month	1. Yes 2. No	
2.6	Have you smoked for the past 3 month	1. Yes 2. No	
2.7	Have you used shisha for the past 3 month	1. Yes 2. No	
2.8	Have you visited Night club for the past 1 month	1. Yes 2. No	
2.9	Have you been viewed porn movies	1. Yes 2. No	

Part –3 sexual behavior and condom use			
Code	Questions	Response	Remark
3.1	Have you ever had vaginal intercourse	1. Yes 2. No	
	If No for number 3.1 go to number 4.1, if yes go to number 3.2 no need to go to 4.1after 3.16		
3.2	Age at first sexual intercourse	Specify ……	
3.3	If yes for number 3.1 With	1. boyfriend/girlfriend	

	whom	2. commercial sex worker 3. acquaintance 4. other specify	
3.4	Reason to start sex	1. Fall in love 2. Had desire 3. Peer pressure 4. An acquaintance 5. Others specify …	
3.5	Total number of sexual partner until now	1. 1 2. 2 3. 3 4. 4 5. 5 6. If other specify …….	
3.6	Have you Had sexual intercourse for the past 3 month	1. Yes 2. No	
3.7	If yes for number 3.6 With whom you can chose more than one	1. Boyfriend or girlfriend 2. Commercial sex workers 3. Others specify …….	
3.8	Total number of sexual partner for the past 3 month	Specify ….	

3.9	If you answered other than 1 for number 3.8	1. During in relation with your boyfriend/girlfriend 2. After separated from the previous sexual partner	
3.10	Have you ever use condom	1. Yes 2. No	
3.11	Have you use Condom for the past 3 months	**1. Yes** **2. No**	
3.12	If yes for no 3.11_how frequent	1. use in every vaginal intercourse 2. sometimes	
3.13	If yes for no3.11_for what purpose do you use condom (you can chose more than 1)	1. To prevent HIV 2. To prevent other STI 3. To prevent pregnancy 4. Forced to use by my parents	
3.14	Where do you get condom	1. From shop 2. Health institution 3. Free in the campus 4. Other specify …..	
3.15	If no for no3.11why (you can chose more than 1)	1. Ashamed to buy condom 2. I trust my partner 3. No available condom 4. Condom has high price 5. Because condom decrease pleasure 6. Because I know HIV status of my parent 7. I don't trust condom	

		8. Because I used other contraceptive method 9. Others specify	
3.16	If answer is 2 for no 3.12(why you can have more than 1 answer)	1. Ashamed to buy condom 2. I trust my partner 3. No available condom 4. Condom has high price 5. Because condom decrease pleasure 6. Because I know HIV status of my parent 7. I don't trust condom 8. Because I used other contraceptive method 9. Others specify…….	

Part –4 knowledge attitude and uptake of HIV test			
Code	Questions	Response	Remark
4.1	Have you ever tested for HIV	1. Yes 2. No	
4.2	What is your source of information about HIV/AIDS	1. Friends 2. Internet 3. News paper 4. Radio 5. Sex education at school 6. Other specify ……	
4.3	Can a person get HIV infection from mosquito bites?	1. Yes 2. No	

4.4	Can a person get HIV infection by sharing a meal with someone who is infected ?	1. Yes 2. No	
4.5	Can the risk of HIV transmission reduced by having sex with only one faithful unaffected partner?	1. Yes 2. No	
4.6	Can healthy looking person have HIV infection	1. Yes 2. No	
4.7	Does condom use reduce risk of HIV transmition	1. Yes 2. No	
4.8	Can the risk of HIV transmission be reduced by abstaining from sexual intercourse?	1. Yes 2. No	
4.9	Can an HIV-infected male be cured of HIV if he has sex with a young girl who is a virgin (a girl who has never had sex before)?	1. Yes 2. No	
4.10	Is there a cure for HIV/AIDS?	1. Yes 2. No	
4.11	If one of your relatives, who is HIV positive, becomes ill, would you be willing to care for her/him in your house or community?	1. Yes 2. No	
4.12	If your friend is HIV positive, would you continue your friendship with him/her?	1. Yes 2. No	
4.13	If a shopkeeper or food seller is HIV positive, would you buy items from him/her?	1. Yes 2. No	
4.14	If a student is HIV positive, she/he should be allowed to continue his/her study in school?	1. Yes 2. No	

4.15	If a teacher is HIV positive, she/he should be allowed to continue his/her teaching in school?	1. Yes 2. No	