ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF ALLIED HEALTH SCIENCES

DEPARTMENT OF NURSING AND MIDWIFERY

THE KNOWLEDGE, ATTITUDE, PRACTICE OF CONTRACEPTION AND UNINTENDED PREGNANCY AMONG UNMARRIED FEMALE STUDENT IN METTU TEACHER TRAINING COLLEGE SOUTH WEST, OROMIYA REGION ETHIOPIA.

BY:-ALEMAYEHU DESSALE (Bsc)

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES, SCHOOL OF ALLIED HEALTH SCIENCES , DEPARTMENT OF NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF MATERNITY AND REPRODUCTIVE HEALTH IN NURSING.

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Approval of the Board of examiners

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Declaration

I, the undersigned, declare that this paper is my original work and has not been presented for master's degree in this or another university and that all sources of materials used for this paper have been fully acknowledged.

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Abstract

Background: Unintended pregnancy is a pregnancy that is either unplanned or unwanted at the time of conception. Globally, about 86 million pregnancies were unintended and causes' death of 358,000 women around the world each year due to pregnancy-related causes. In Ethiopian abortion accounts for 60 % of gynecological admissions.

Objective: The aim of this study was to find the knowledge, attitude, and practice of contraception and the prevalence of unintended pregnancy among unmarried female student in Mettu teacher training college.

Methods: Institutional based Cross sectional study was conducted from April 8-28, 2017using adapted and modified structured, self-administered questionnaire. The simple random sampling method was used to select departments and each department was stratified based on batches and samples sizes were proportionally allocated to each size and 360 female students involved in the study. Data analyzed using frequency, percentage while logistic regressions were used for comparative purposes. The magnitude of the association was measured using chi-square test at 95% confidence interval (CI) and $P< 0.05$ considered statistically significant.

Result: From total participant 29.8% them were sexually active and 30.8% of them had unintended pregnancy. Fifty three percent had knowledge, fifty seven percent of respondent had negative attitude and 58.3% were used contraceptive method. The most commonly ever used methods were oral pills (35.2%), rhythmic method (29.5%) and condom (13.9%).Unintended pregnancy were significant associated with age group, department they learn, method suitable for college students, ever used method and reason for not using contraceptive method.

Conclusion and recommendation: One third of unmarried female students were sexually active and experienced unintended pregnancy. More than half students had knowledge on contraception and negative attitude toward contraception. Heath bureau of Mettu town and Mettu teacher training college should design strategy to increase the students' knowledge, attitude and utilization of contraceptive method.

Keywords: unintended pregnancy, contraception, unmarried female, students

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List of Acronyms

CI	Confidence interval
BSc	Bachelor's degree in science
EC	Emergency contraceptive
EDHS	Ethiopia demographic and health survey
HIV	Human immune virus
IUC	Intrauterine contraceptive
IUD	Intrauterine device
IUS	Intrauterine system
MDG	Millennium development goal
MSc	Master's degree in science
OCP	oral contraceptive pills
SRS	simple random sampling
STD	Sexually transmitted disease
TTC	Teacher training college
US	United state

1. Introduction

1.1. Background

Unintended pregnancy is a pregnancy that is either unplanned or unwanted at the time of conception[1].

Unintended pregnancies consist of unplanned births, induced abortions, and miscarriages. Unplanned births consist of those occurring two or more years sooner than desired ("mistimed") and those that were not wanted at all by the mother ("unwanted")[2].

Unintended pregnancies may also result from rape, incest or various other forms of forced or unwanted sex.Vaginal sexual activity without the use of contraception through choice or coercion is the predominant cause of unintended pregnancy. The incorrect use of a contraceptive method and failure of the chosen methods are also contributing factors[3]. Available contraception methods include use of birth control pills, a condom, intrauterine device (IUD, IUC, IUS), contraceptive implant (implanon/nexplanon), hormonal patch, hormonal ring, cervical caps, diaphragms, spermicides, or sterilization[4].Women choose to use a contraceptive method based on method efficacy, medical considerations, side effects, convenience, availability, friends' or family members' experience, religious views, and many other factors[5].

Unintended pregnancy usually precludes pre-conception counseling and pre-conception care, sometimes delays initiation of prenatal care, reduced likelihood of breastfeeding depression during or after pregnancy[6], less preparation for parenthood, preclude chance to resolve sexually transmitted diseases (STD) before pregnancy[7]. Children whose births were unintended are at Greater likelihood of low birth weight, particularly for unwanted pregnancies[4].

Unintended pregnancy can be prevented through comprehensive sexual education, availability of family planning services, abstinence and increased access to a range of effective birth control methods particularly increasing the use of long-acting reversible contraceptives (such as IUD and contraceptive implants) decreases the chance of unintended pregnancy by decreasing the chance of incorrect use[4].

1.2. Statement of the problem

Globally, about 86 million pregnancies were unintended, of which 33 million resulted in unplanned births, 41 million in abortions, and the remaining 11 million in miscarriages[8].

Unintended Pregnancies causes' death of 358,000 women around the world each year due to pregnancy-related causes and 47,000 death of women each year due to unsafe abortions[9].

Around the world, about 16 million girls and women aged 15 to 19 years give birth each year and Most of these pregnancies are unintended[10]. About 16 million women 15–19 years old give birth each year, about 11 % of all births worldwide; 95 % of these births occur in low- and middle-income countries. Due to lack of education on sexual and reproductive health, poverty, contraceptive failure, and sexual assault[10] an estimated 10-14 % of young unmarried women around the world experience unwanted pregnancies.

Approximately half of all pregnancies in the United States are reported by the mother as unintended, and that number increases to 70 percent among single women under thirty[11].

Among unmarried, sexually active adolescent women who want to avoid pregnancy, 41% in Sub-Saharan Africa and 50% in Latin America and the Caribbean are using a modern method. The remainders are using either traditional method (17% and 8%, respectively) or no method (42% and 43%). Each year, there are an estimated 2.7 million unintended pregnancies among adolescent women living in South Central and Southeast Asia, 2.2 million in Sub-Saharan Africa, and 1.2 million in Latin America and the Caribbean. Most unintended pregnancies experienced by adolescent women occur among those who are using no contraceptive method or a traditional one: 92% of those in Sub-Saharan Africa, 93% of those in South Central and Southeast Asia, and 83% of those in Latin America and the Caribbean [19]. Adolescents account for an estimated 2.5 million of the approximately 19 million unsafe abortions that occur annually in the developing world. Adolescents account for 14% of all unsafe abortions that occur in the developing world. In Sub-Saharan Africa, the proportion is 25% [19].

The current global Unmet Family Planning Services are the major contributing factor for the occurrence of Unintended Pregnancy. Percentage of Women with Unmet Need for Family Planning in Most Recent Estimate indicates greater than 30% in east and some West African countries, less than 10% in Latin America and Asia and no data in North America and west Europe [27].

Not only unmet need of FP but also contraceptive failure, incorrect and inconsistent use of contraceptive contributes to unintended pregnancy [28, 29].

Majority of Unintended Pregnancies in Developing Countries Occur among Women Using Traditional or No Contraception (80%) and 18% those using modern method [30].

According to the Ethiopian ministry of health, abortion accounts for 60 % of gynecological and almost 30 % of all obstetric and gynecological admissions. And over half of 19 million women who annually seek abortions in Ethiopia are under 18 and 60% of pregnant girls were living in rural area and 70% of them are unmarried [10].

According 2011 Ethiopian Demographic and Health Survey (EDHS), 25 % of the women with births in the five years before the survey and 32 % of the current pregnancies were reported to be unintended[12].

Unmarried pregnant girl is considered as a shame in Ethiopia society (culture or tradition). She may be thrown out of home, drop out of school, and then being exposed to commercial sex work with possible HIV contamination[10]. Unintended pregnancy is a serious problem among teenagers in Ethiopia. Several studies in Ethiopia have documented the prevalence of unintended pregnancies among young women. A household study of adolescents in Addis Ababa found that the median age at first pregnancy was 16 years, with 2 in 3 women becoming mothers before the age of twenty[10].

Over the past six years the proportion of Ethiopian women who have never married has increased slightly, from 25 percent in 2005 to 27 percent in 2011, of this 77% of women aged between 15-19 and 31.9% of 20-24 aged women's are never married in 2011and 5% of all women age 15-19 report currently using any contraceptive method [12]. According to Ethiopia demographic health survey report in 2016 sexually active unmarried women, 58 percent are currently using a contraceptive method [12].

Case Study on student awareness towards the effects of unintended pregnancy among student in Mettu shows that 65.9% of college students are sexually active at the time of the study and 51.7% of them received highest abortion care compared to Mettu university (2.7%) ,high school(13.1%) and primary school(32.5%)[13]but there is no study on the extent of unintended pregnancy in college.

Unintended pregnancy problems and complications are vast but the evidences and literatures on the problem among unmarried female students are limited.

1.3. Significance of the study

This study would provide baseline information on the knowledge,attitude,practice of contraception and unintended pregnancy that would be used in designing and implementing interventions that could be tailored to students need and there by contributing to the reduction in maternal mortality. In addition, the results of this study would help the ministry of education and health of the zone in developing or reviewing zonal policy and guidelines regarding the prevention of unintended pregnancies and promotion of contraceptive use.

2. Literature Review

2.1. Sociodemographic characteristic and unintended pregnancy

A Cross-sectional study among unmarried female university students in China shows 31.8% of unmarried female experiences unintended pregnancy. Those younger than 20 or aged from 20 to 22 had higher risk of unintended pregnancies than who were older than 22[14].

Another study in US reveals that women without a high school degree had the highest unintended pregnancy rate among all educational levels (73 per 1,000 women aged 15–44), and rates were lower for women with more years of education. The proportion of pregnancies that are unintended generally decreases as age increases[15].

The analysis based on the 2006 Maternity Experiences Survey in Canada demonstrates women who were less than 20 years of age at the time of their pregnancy were more likely to experience an unintended pregnancy, compared to women who were 40 years of age and older. In addition, women with an education equivalent to a high school diploma or less were 1.71 times more likely experience an unintended pregnancy compared to women who had graduate higher level education. Interestingly, women who experienced 1 or more previous pregnancies were more likely to experience an unintended pregnancy compared to women who had no previous pregnancies in the adjusted model [16].

In Britain national survey on sexual attitude and lifestyle shows pregnancies among non-cohabiting women, or those currently without a partner, were more commonly unplanned than those among married or cohabiting women[17].Pregnancies in 16–19-year-old women accounted for only 7·5% of the total number of pregnancies for all ages, but 21·2% of those them were unplanned. Age-adjusted odds ratios showed unplanned pregnancy to be most strongly associated with occurrence of sexual intercourse before the age of 16 years[17].

Facility based study in Brazil shows association between marital status and unplanned pregnancy; it was observed that single women had more chance of falling pregnant without planning when compared with married/women in stable partnerships. Single women with a fixed partner were 1.5 times more likely to fall pregnant and single women without a fixed partner were 1.7 times more likely to fall pregnant [18].

Another cross sectional study in Brazil shows mistimed pregnancy has significant statistical associations with maternal age under 20 years; having no partner and parity. Women with an unwanted pregnancy were 4.86 times more likely to report not having a partner. Compared with

primi parous women, those with up to two prior births were 6.96 times more likely to have an unwanted pregnancy, and those with three or more births were 14.00 times more likely to have an unwanted pregnancy[19].

Case control Study in three medical college of India found that lack of knowledge on sexual and reproductive health had a significant association with unmarried pregnancy. Low socio-economic status was found to be having 4 times higher risk for unmarried pregnancy [20].

In south east Nigeria Higher percentage of the teens with secondary education than those with primary education were pregnant[21].

According to study in Kenya about 24% of the 1272 women had unintended pregnancy. Never married women were more likely to experience unintended pregnancy; 62% of them reported having had unintended pregnancy compared to 13% and 26% of currently and formerly married women respectively. Zero parity women had the highest prevalence of experiencing unintended pregnancy, 30% compared to 27% and 20% among those of parity 1–2 and parity 3 and above respectively. Women aged 15–19 had the highest prevalence of unintended pregnancy, (68%) while 20% in women aged 35–49. Women who were at least 20 years old were less likely to experience unintended pregnancy compared to those aged 15–19 years [22].

A household random survey in the south Nigeria shows educational status significantly affected the occurrence of unwanted pregnancy and the contraceptive prevalence rate, with the respondents at secondary and less level of education more likely to have an unwanted pregnancy and also less likely to be using contraception as compared to those in tertiary level of education[23].

Facility based Study in Ghana shows only a tenth of the pregnancies were intended among single women. Women aged 20 years and above, had significantly lower odds of having unintended pregnancy. Some factors that were found to be significantly associated with increased odds of unintended pregnancies are: not being married by ordinance (Muslim or Christian wedding); partner not living in the same house as the woman [24].

Education was not found to be a significant factor influencing unintended pregnancies in this study. Single women showed the highest odds of carrying unintended pregnancy [AOR 7.32, 95% CI (4.21- 12.75][24].

Community based study in north east Ethiopia shows 86% of never-married women reported having had unintended pregnancy compared to 31% and 37% of currently married/cohabiting

and formerly married women, respectively (P < 0.001). Women with parity of two or less had the lowest prevalence of unintended births (28%) compared to 37% among those of parity six and above. Women with primary education had higher prevalence of unintended pregnancy (more than 34%) followed by those uneducated (32%) (P < 0.001)[25].

Community based cross sectional study in north Ethiopia indicates 84.8% pregnant women were in the age group greater than or equal to 20 years and the rest 95(15.2%), of them were less than 20 years. Of total unintended pregnancies 76% were mistimed pregnancy and 24% were unwanted pregnancy [26].

Facility based cross sectional studies in east Ethiopia shows the single respondents were 5 times and the divorced/widowed respondents were 4 times more likely to have unintended pregnancy than the married ones. The mothers with parity of 3–5 and with that of >5 were 2.4 and 4.8 times more likely to experience unintended pregnancy compared to those who had two or fewer children[1].

Other institutional based study in south east Ethiopia shows overall prevalence of unwanted pregnancy among those who ever had sexual experience was 11(8.1%) while 11(1.4%) among total respondents[27].

2.2. Contraceptive knowledge and attitude

Two-thirds (68%) of U.S. women at risk for unintended pregnancy use contraceptives consistently and correctly throughout the course of any given year; these women account for only 5% of all unintended pregnancies. In contrast, the 18% of women at risk who use contraceptives inconsistently or incorrectly account for 41% of all unintended pregnancies. From14% of women at risk who do not practice contraception at all or who have gaps of a month or more during the year account for 54% of all unintended pregnancies[15].

In Nigeria study shows Current contraceptive use rate was also significantly related to respondents' level of education and ranges from 3.5% among the illiterates to 29.1% among those with post-secondary education. Of the 729 respondents who had experienced unwanted pregnancies, 19.6% became pregnant while using some form of contraception. Of those who became pregnant while using a method 25.9% was on the pill and 29.3% were using rhythm method. About one-quarter (24.1%) of the respondents who had experienced unwanted pregnancy, had more than one experience and many had terminated more than three pregnancies[28].

Ninety four percent female undergraduate student in Tanzania had the knowledge about contraception and 40.4% were current contraceptive users. Ever been pregnant and unwanted pregnancy were associated with lower use of contraception [29].

The study in India showed that 98% of the students had knowledge about family planning and 86% of them had heard about contraceptives and 69% knew about the source of availability of contraceptives. [30].

Study in Malaysia indicates female who had experienced unplanned pregnancy had a significantly lower contraceptive knowledge score (2.10 ± 1.48) than those who had never experienced pregnancy (3.30 ± 1.35) [31].

Other Study in rural area of Nigeria shows 86.3% said they knew how to prevent unwanted pregnancy and 13.7% had no knowledge of how to prevent an unwanted pregnancy. The contraceptive prevalence rate (current use) was 29%, and 71% of respondents were not using any method of contraception [23].

Study in Tanzania shows Condoms and pills were the most commonly heard of contraceptive methods (78.0% and 60.4%, respectively). Less than half of the respondents (43.6%) had ever used any of the contraceptive methods, and (40.4%) were current contraceptive users[32].

Reasons that were attributed to the use of contraceptives to be: fear of pregnancy (35.6%), fear of contracting sexually transmitted diseases (17.3%), and pregnancy spacing (17.3%). Some of the sexually active respondents indicated fear of side effects (33.0%) and religious beliefs (27.7%) as the reasons for not using contraceptives [32].

Study in rural Ghana shows Respondents who had ever used traditional methods showed significantly lower odds of carrying unintended pregnancy [OR 0.40, 95% CI(0.25-0.62); OR 0.50, 95% CI(0.40-0.64); OR 0.68, 95% CI(0.55-0.82) respectively][24].

Awareness of traditional methods of family planning (withdrawal and rhythm) was associated with lower odds of having unintended pregnancy compared to non-awareness (AOR 0.66, 95% CI (0.49-0.89)[24]

Study in capital city of Ethiopia shows more than half of girls interviewed don't know their menstrual cycle/ fertility pattern and the physiology of their reproductive organs. 3 of 10 participants knew their menstrual cycle, while 2 of 10 girls were not sure[10].

Most of adolescents did not use or used contraceptives irregularly in the last 6 months. 3 out of 10 girls used condoms while 2 out of 10 used pills and 1 out of 10 used injectable[10].

Facility based cross sectional study in east Ethiopia shows women who didn't hear about contraceptives were 2.7 times more likely to have unintended pregnancy compared to those who had heard about contraceptives [1].

Study in the north part of Ethiopia indicates that about 87.1% respondents ever heard about contraceptive and 35.8% of the respondents thought modern contraceptive can prevent unintended pregnancy. 69.8% of the respondent were ever used any type of contraceptive before becoming pregnant. 82.2% of them were used to injectable, followed by a pill (8.9%), implants (8.6%), condom (0.3%). Only (17.7%) of the respondents have ever heard about emergency contraceptive [26].

Study on female students of Madawalabu University revealed from those who ever had sexual intercourse 78.7% of them was sexually active in the last twelve months. Sixty eight (63.6%) were used family planning method consistently while the rest were not. Among the consistent users the most common type of contraceptive used were pills(45.1%) and Depo-Provera (35.1%).The paramount justification stated by more than third quartiles(76.9.%) for not complying with family planning methods was fear to go to clinic to buy contraceptives followed by partner opposition(15.4%) [27].

Unwanted pregnancy was lower among those who ever heard about family planning, consistently used family planning in the last twelve month and ever heard about emergency contraceptive. those who ever heard about family planning were 97.4% less likely to have unwanted pregnancy as compared to those who didn't heard about family planning [AOR(95%CI)= 0.026(0.004,0.196)][27]. Those who were consistently used family planning in the last twelve month were also 96% less likely to have unwanted pregnancy as compared to those who failed to use consistently [AOR (95%CI) = 0.04(0.003, 0.558)]. Those who ever heard about emergency contraceptive were 93% less likely exposed for unwanted pregnancy as compared to those who didn't heard about emergency contraceptives [AOR(95%CI)= 0.07(0.001,19.71)] [27].

2.3. The adoption and frequency of contraception method

Study in China indicates main contraceptive method for unmarried female students who always adopted contraception was male condom (82.9%) and 23.2% of unintended pregnancy occur among them [14].

Study on college student of India shows most common methods of contraception used by the students were condoms (past users 70% and current users 81%), followed by combined OC pills and condoms (17%)[30].

Cross sectional study in Tanzania indicates periodic abstinence as the commonest contraceptive method used among unmarried students (73.7%), while pills as the method of choice among married participants (66.7%) [29].

Study in south east Nigeria shows only 13.2% had ever used condoms. Fifty nine per cent of the adolescents or young women who sought termination of pregnancy tried local concoctions. The young women suggested that abstinence from sex is the best way to avoid unintended pregnancy in future. They use emergency contraception, which they understood to be a drug they could take immediately after sex to prevent getting pregnant [21].

Study in Tanzania shows Condom was the commonest contraceptive method ever used among married (37.7%) and unmarried respondents (27.5%) [32].

Most of the contraceptives were not known by participants, except condoms and pills that were the most used as shown by study in capital city of Ethiopia[10].

2.4. The reasons for contraception non-use

Study in Tanzania reveals that the main reason for utilization of contraception is fear of pregnancy (49.2%) and fear of contracting HIV/AIDS (17.2%)[29].

But in southern Nigeria shows that the fear of side effects (33.8%), lack of knowledge (16.6%) and lack of spousal consent (13.0%) were the leading reasons for present non-use of contraceptives[23].

The main reasons given for not using contraceptives were lack of money to purchase them, and most of the contraceptives were not known by girls, and many partners did not like to use them shown by study conducted in capital city of Ethiopia[10].

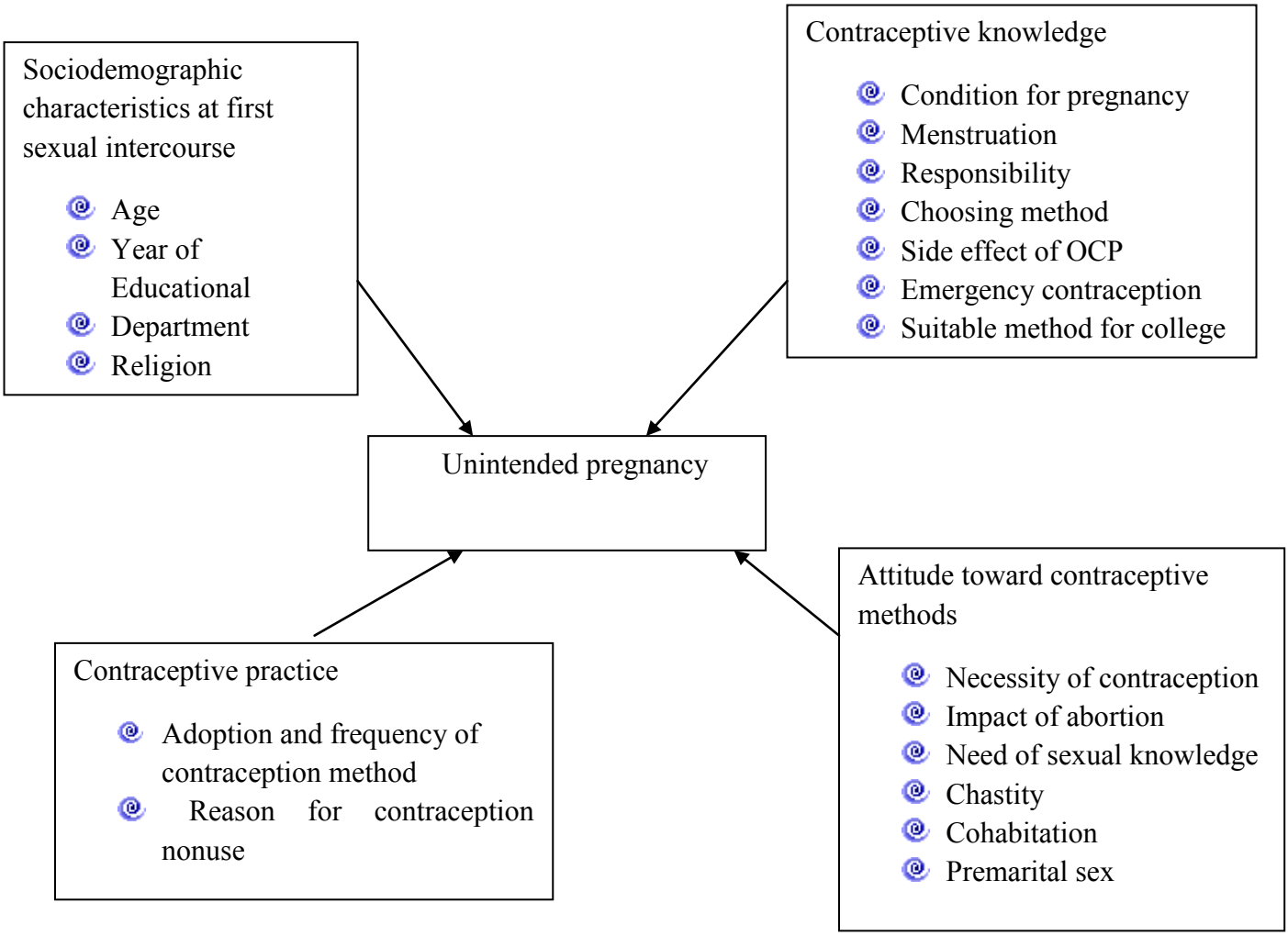

Figure: 1. Conceptual frame work of unintended pregnancy (Hungjing et al 2004)

3. Objective

3.1. General objective

To assess the knowledge, attitude, practice of contraception and unintended pregnancy among unmarried female students in Mettu TTC.

3.2. Specific objectives

To assess the knowledge of contraception among Mettu TTC female students

To assess the attitude toward contraception among Mettu TTC female students

To assess the practice of contraception among Mettu TTC female students

To assess the prevalence of unintended pregnancy among Mettu TTC female students

To determine the association between knowledge, attitude and practice of contraception and unintended pregnancy among Mettu TTC female students

4. Methodology

4.1. Study Area

Mettu is a zonal town and separate woreda in south-western Ethiopia; Located in the Illubabor Zone of the Oromiya Region along the Sor River, this town has a latitude and longitude of 8°18′N 35°35′E / 8.300°N 35.583°E and an altitude of 1605 meters and 700km from capital city of the country.

The 2007 national census reported a total population for Mettu of 28,782, of whom 14,400 were men and 14,382 were women. The majority of the inhabitants practiced Ethiopian Orthodox Christianity, with 47.55% of the population reporting they observed this belief, while 26% of the populations were Muslim, and 26% were Protestant.

Different ethnic groups lives in Mettu town and the working language is Afan Oromo. There are two high schools, two colleges and one university. Mettu teacher training college is one of the colleges that established in as college in 2006 G.C with 45 male and 33 female administrative staff, 26 male 2 female teachers. Currently there are 92 administrative worker and 70 teachers working in the college. There are 4392 students attending their education in this college. From these 2248 students are female with 2218 unmarried and 30 married females. This student comes from different part of the region and shares their cultures. In addition to this they adopt culture of new environment. Since students comes from different area and start their own life out of their family supervision and gain little freedom from family control to do what they wish. Also they may start to establish relationship with opposite sex and they also lives in house rented independently where there is no control by external agent concerning with whom they should live like university where living together by male and female student in the same dorm is not allowed.

4.2. Study Design

Institutional based Quantitative Cross sectional study

4.3. Study Period

The study was conducted from April 8-28, 2017

4.4. Source Population

Unmarried female students learning in Mettu teacher training college

4.5. Study Population

Unmarried Female students in sport science, natural science, social science streams.

4.6. Study Unit

Unmarried female selected from students learning civics, history, physics, sport science and biology department in Mettu teacher training college.

4.7. Sample size Determination

The sample size was calculated using single population proportion formula at 95 % confidence interval, 5% of absolute precision, assuming 50% students were experiencing unintended pregnancy because there was no study on this group and 10 % of non-response rate.

N= $(Z_{\alpha/2})^2$ pq/d^2 = $(1.96)^2$ (.5)(.5)/$(0.05)^2$ =384 and since the study population was less than 10000,correction formula was required to obtain 327 and adding non response rate 33 to the calculated size to obtain 360 representative sample.

$$n_{final} = \frac{n}{1 + \frac{n}{N}}$$

N final=384/1+384/2218=327

$z_{\alpha/2}$ =1.96

P=0.5, q=1-.5=.5

D=5%

Total sample involved in the study is 360 female students.

4.8. Sampling Method

The simple random sampling method used to select five departments from eight departments taught in the college and for each department sample size was determined proportionally. Then each department stratified into three batches and for each batch samples sizes were determined by proportional sampling method. Then study participants were selected by SRS using lottery method from each stratum.

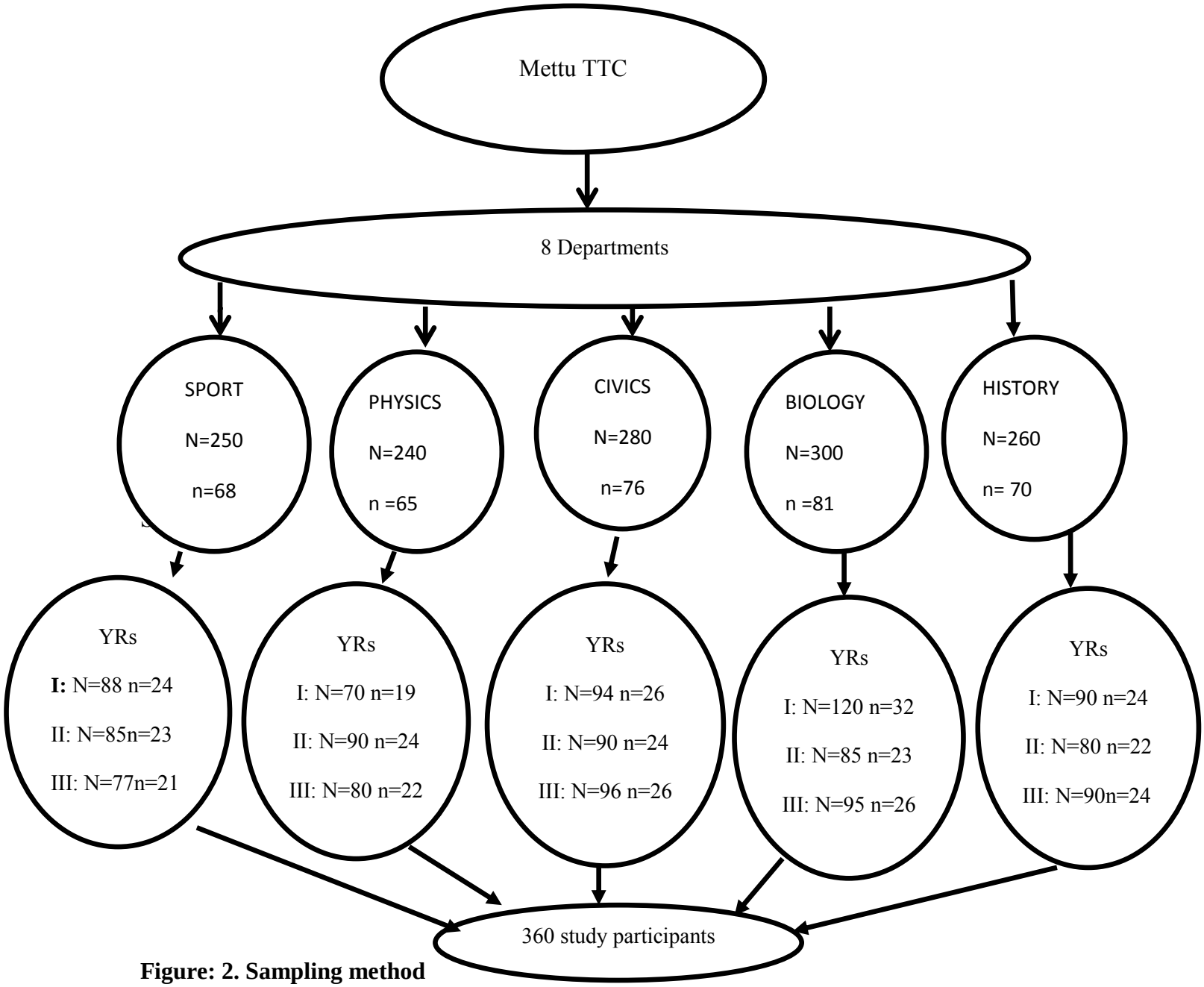

Figure: 2. Sampling method

4.9. Study Variables

4.9.1. Dependent variable

Unintended pregnancy

4.9.2. Independent variable

Socio-demographic characteristics (age, years of study and department), Knowledge of contraceptive, Attitude toward contraception Practice of contraceptive methods and sexual intercourse

4.10. Eligibility criteria

4.10.1. Inclusion criteria

Single female students in reproductive age group, consented to take part in the study

4.10.2. Exclusion criteria

Married female Students

4.11. Data Collection Procedures and Methods

Data was collected through pre-tested structured questionnaire that adapted from study conducted in china on unmarried female university students[14]. The questionnaire was translated from English into Afan Oromo and back to English by language experts to check for consistency. The questionnaire consists of socio-demographic characteristics of respondents, knowledge, attitude and practice about contraceptives and history of unintended pregnancy. Eight female from health center and hospital identified for data collection and one supervisor selected from midwifery departments of Mettu University. They were trained for two days by the principal investigator on the study instrument, consent form and data collection procedure. Before the actual data collection, the questionnaire was pre-tested on student learning in Mettu technical and vocational training college. The purpose of the pre-testing was to ensure that whether respondents were able to understand the questions or not and to check the wording, logic and skip patterns of the questions in a rational way to the respondents. An amendment was made accordingly after the pre-testing.

4.12. Operational definition

Unintended pregnancy: pregnancy that is unwanted or unplanned at time of the development of conception.

Contraceptive knowledge: The ability to differentiate different contraceptive method in terms of effectiveness, safety, convenience, side effect and their uses. Those who have responded correctly to more mean value from total questions given to assess contraceptive knowledge of students were considered as knowledgeable and those responded below mean level considered as not knowledgeable.

Attitude toward contraceptive: The way individual view contraceptive method impact on physical, reproductive physiology and mental health of woman including their benefit and side effect. Students whose score were less than mean value considered as having positive attitude and those whose score were more than mean considered as having negative attitude.

Practice of contraceptive method: use and frequency of method used to prevent an unintended pregnancy during sexual practice. Students whose score were more than mean value considered as practicing method and those below mean score were considered as not practicing.

4.13. Data Processing and Analysis Procedures

After data collection, filled questionnaires was entered SPSS version 20.0 software then, coded, checked, cleaned for analysis. Incomplete and inconsistent data were excluded from the analysis. Data analysis used descriptive statistics, including frequency, percentage, while logistic regressions were used for comparative purposes. The magnitude of the association between the different independent variables in relation to dependent was measured using fisher or chi-square test at 95% confidence interval (CI) and P-values below 0.05 considered statistically significant.

4.14. Data Quality Control

To keep data quality the questionnaire were prepared in English and translated into Afan Oromo. Data collectors and supervisors were given training for two days on how to use the questionnaire and approach to the respondents. A pre-test was carried out by data collectors on Mettu technical and vocational training college and after pre-testing, comments were included in the questionnaire and experiences was obtained on how to proceed in the final data collection. Data collection instruments reliability was defined as the consistency with which it measures the target attribute and/or concerns a measure's accuracy. In order to ensure reliability of the

instrument in this study a pre-test were conducted. This involved testing the actual tool on a small sample taken from the general population.

A week before execution of the study, the actual questionnaire were administered to ten students in Mettu technical and vocational training college in order to ensure that the tool would collect the desired data and that the questions were clear. After analyzing data from the pre-test, questions which were not clear were rephrased to ensure that appropriate responses would obtained in the future. Validity of an instrument concerns the extent to which the research measures what it imply to measure without bias or distortion. To test the instrument, a copy of the questionnaire were submitted to the study supervisor to examine whether the number and type of items in the questionnaire would measure the concept or construct of interest. Questions in the tool were developed based on findings from previous studies and the literature reviewed and in order to reduce error data collectors were trained and the collected data was cheeked for correctness.

4.15. Ethical Consideration

An ethical approval was obtained from institutional review board of school of Allied health sciences, Addis Ababa University. Official letter of cooperation was written to Mettu teacher training college. Following an explanation of the purpose of the study consent was obtained from those who met the inclusion criteria and agreed to participate. Also affirmation that they were free to withdraw consent and discontinue participation without any form of prejudices was made. Confidentiality of information and privacy of participants were assured for all the information provided, to preserve the confidentiality the data was not exposed to the third party except the principal investigator and advisor.

5. Results

5.1. Socio demographic characteristics

Of the total 360 respondents 143(39.7%) and 217(60.3%) were in the age groups of 15-19 and 20-24 years old respectively. One hundred forty six respondents (40.6%) were protestant religion followers. One hundred twenty five **(**34.7%) of respondents were first year, one hundred nineteen (33.1%) third year and one hundred sixteen (32.2%) were second year students. Eighty one (22.5%) were learning biology, seventy six (21.1%) civic, seventy (19.4%) history, sixty eight (18.9%) sport and sixty five (18.1%) were physics department. (Table: 1 below)

Table 1. Frequency distribution of general demographic characteristics of students in Mettu teacher training college, Oromiya, Ethiopia (N=360).

Variable	Frequency	Percent
Age		
15-19	143	39.7
20-24	217	60.3
Religion		
Orthodox	98	27.2
Protestant	146	40.6
Muslim	88	24.4
Others	28	7.8
Educational level		
First year	125	34.7
Second year	116	32.2
Third year	119	33.1
Department		
Physics	65	18.1
Sport	68	18.9
Biology	81	22.5
Civic	76	21.1
History	70	19.4

5.2. Contraceptive Knowledge

From 360 respondents 192(53.3%) were answered correct option above the mean value and had knowledge about contraceptive method. One hundred fifty seven (43.6%) of the total respondents knew the basic condition required for human pregnancy. But 203(56.4%) of them had no knowledge about basic condition for human pregnancy.one hundred eighty two (50.6%) responded that temperature rises during menstrual period, 57(15.8%) didn't have knowledge about menstruation, 56(15.6%) responded that ovulation occurs on the 14th day before next menstruation, 37(10.3%) responded ovulation occurs on the 14th day behind the menstruation and 28(7.8%) were responded that menstruation occurs after ovulation. Three hundred one (83.6%) of the respondent believed that both man and woman had responsibility for contraception while 50(13.9%) and 2(.6%) responded that woman and man were responsible for contraception respectively. But 7(1.9%) didn't know who is responsible for contraception. Two hundred fifty one (69.7%) of students selected contraception method based on their feeling/interests, 46(12.8%) on safety, 40(11.1%) on effectiveness and 23(6.4%) based their selection on convenience to buy or use contraceptive tools. One hundred forty one (39.2%) of students responded OCP affect the regularity of the cycle, 121 (33.6%) OCP affects fertility, 46(12.8%) responded OCP had no side effect, 37(10.3%) risk of weight gain and 15 (4.2%) stated OCP causes nausea and vomiting. Of total respondents on EC method 211(58.6%) didn't know method used as emergency contraception, 109 (30.2%) had knowledge about emergency contraceptive method but 35(9.7%) and 5(1.4%) responded that mifepristone and vaginal douching used as emergency contraception respectively. One hundred forty seven (40.8%) of respondents didn't know whether or not emergency contraception substitute regular contraception, 113 (31.4%) said it can substitute regular contraception and 100 (27.8%) responded that EC can't substitute regular contraception. 286 (79.4%) of the total respondents had no trust on contraceptive methods ability in preventing pregnancy while 74 (20.6%) responded that contraceptive method can prevent pregnancy completely. Two hundred fifteen students (59.7%) didn't know types of contraceptive suitable for college students; 34 (9.4%) responded rhythm methods, 30(8.3%) male condom, 28(7.8%) OCP, 16(4.4%) implant, 14(3.9%) IUD and 13(3.6%) considered EC as suitable method for college students. About 142(39%) of respondents responded that about 14 days before menstruation it is possible to conceive while 112(31.1%) a few days before or after menstruation, 64(17.8%) didn't know

when to conceive and 42 (11.7%) responded that it is possible to conceive during menstrual bleeding period.

Table 2 Frequency distribution of contraceptive knowledge of Mettu Teacher Training College students, Oromiya, Ethiopia (N=360)

Variable	frequency	percent
Basic conditions for human pregnancy		
Sperm	104	28.9
Ovum	52	14.4
Genital tract	36	10
Uterus	11	3.1
All	157	43.6
True about menstruation:		
After ovulation will have menstruation	28	7.8
The temperature is rising in menstrual period	182	50.6
Ovulation happens on the 14th day before next menstruation	56	15.6
Ovulation happens on the 14th day behind menstruation	37	10.3
Don't know	57	15.8
Responsibility for contraception		
Man	2	.6
Woman	50	13.9
Both of them have responsibility	301	83.6
None of them	7	1.9
The priority consideration of choosing contraceptive methods		
Contraceptive effectiveness	40	11.1
The feeling of using contraceptive methods	251	69.7
The convenience of buying or using contraceptive tools	23	6.4
The safety of contraceptive methods	46	12.8
The side effects of Oral contraceptive pills		
Affecting fertility	121	33.6
Affecting the regularity of the menstrual cycle	141	39.2
Risk of weight gain	37	10.3
Nausea/vomiting	15	4.2
No side effects	46	12.8
Emergency contraception method		
levonorgestrel tablets	48	13.3
mifepristone	35	9.7
Intrauterine device	61	16.9
Vaginal douching	5	1.4
Don't know at all	211	58.6
Emergency contraception substitute for regular contraception		
Can	113	31.4
Can not	100	27.8
Don't know	147	40.8

contraceptive methods completely prevent pregnancy		
Can	74	20.6
Can not	286	79.4
Don't know	000	000
Contraceptive methods suitable for college students		
Rhythm method	34	9.4
Intrauterine device	14	3.9
Oral contraceptive pills	28	7.8
Implant	16	4.4
EC method	13	3.6
Withdrawal	9	2.5
Male condom	30	8.3
Don't know at all	215	59.7
Stage of the menstrual cycle most likely to conceive		
During menstrual bleeding period	42	11.7
A few days before or after menstruation	112	31.1
About 14 days before menstruation	142	39.4
Don't know at all	64	17.8

5.3. Students Attitude toward contraceptives

One hundred fifty four (42.8%) of respondents had positive attitude toward contraceptive method. 340 (94.4%) of students thought knowledge of contraceptive method necessary for them and 20(5.6%) thought it was unnecessary to have knowledge of contraceptive method. Majority of students 339(94.2%) thought abortion had serious impact on woman's physical and mental health but 11(3.1%) of them were uncertain, 8(2.2%) thought it had slight impact and 2(0.6%) thought that abortion had no impact on woman's health. Three hundred sixteen (87.8%) of the respondents thought abortion has impact on woman's pregnancy and 44(12.2%) thought it has no impact on pregnancy. Three hundred ten (86.15) of participants responded that education on sexual knowledge needed for college students and 50(13.9%) responded that it was not needed for college students. Two hundred ninety three (81.4%) respondents disagreed and 67(18.6%) agreed with the idea that sex education will lead to more sexual behavior respectively. Chastity was thought to be important for both male and female 270(75%), 67(18.6%) thought it was not important for both male and female, 13(3.6%) thought it was important for male not for female and 10(2.8%) important for female not for male. Two hundred seventy nine (77.5%) of participants disagreed with premarital sex while 51(14.2%) accepted it when they were ready to get married, 21(5.8%) if they had boyfriend and 9(2.5%) accepted it despite their emotion. Two

hundred thirty six (65.6%) respondents didn't agree with unmarried cohabitation, 24.4% can understand it and 10% agreed with it.

Table 3 frequency distribution of students Attitude toward contraceptives in Mettu Teacher Training College, Oromiya, Ethiopia (N=360)

Variable	frequency	Percent
Necessary to know the contraceptive knowledge		
Necessary	340	94.4
Unnecessary	20	5.6
An impact on women's physical and mental health after abortion		
Not at all	2	.6
Slightly	8	2.2
Serious	339	94.2
Uncertain	11	3.1
An impact on women pregnancy after abortion		
Yes	316	87.8
No	44	12.2
College students need to learn sexual knowledge		
Need	310	86.1
Do not need	50	13.9
"Sex education will lead to more sexual behavior"		
Agree	67	18.6
Disagree	293	81.4
"Chastity"		
Important for female but not important for male	10	2.8
Important for male but not important for female	13	3.6
It is important for both male and female	270	75.
It is not important for both male and female	67	18.6
Attitude toward premarital sexual behavior		
Don't agree with premarital sex	279	77.5
If I have a boyfriend/girlfriend, I can accept	21	5.8
If I am ready to get married with he/she, I can accept	51	14.2
No matter I have emotion for he/she, I can accept	9	2.5
Attitude toward unmarried cohabitation：		
Agree	36	10
Can understand	88	24.4
Disagree	236	65.6

5.4. Contraception Practice

Two hundred ten (58.3%) of respondents had practiced the contraception method. From the total participants 258(71.7%) had boyfriend and 102(28.3%) didn't. One hundred seven **(**29.8%) of the participants were sexually active. The most commonly used method was OCP 27(55.1) but condom 12(24.5%), rhythmic 4(8.2%), withdrawal 1(2%) and implant 5(10.2%) were other method used at first sexual contact.one hundred eleven **(**30.8%) of respondents had unintended pregnancy and from these 98(88%) one times, 12(11%) twice and 1(1%) had more than three times. Twenty nine **(**26%) used OCP in their latest unintended pregnancy, twenty four (21.6%) rhythmic method, ten (9%) condom, 3(2.7%) individually used withdrawal and vaginal douching while forty two (37.8%) used no method. About 42(37.8 %) of unintended pregnancy occurred among contraceptive non user and 69 (62.2 %) were among users. Thirty nine (35.1%) respondents didn't know how to deal with their latest unintended pregnancy while 38(34.2%) planned medical, 27(24.3%) prepared themselves to give birth and 7(6.3%) planned surgical method to terminate unintended pregnancy. Forty three (35.2%) ever used OCP, 36(29.5%) ever used rhythmic method, 17(13.9%) used condom, 8(6.6%) used implant and 7(5.7%) used withdrawal methods anytime they did sex.The reason most respondents gave for not using contraceptive method 154 (68.1%) didn't know how to use while 14(6.2%) worried about its side effect, 15(6.6%) feared that delight would be affected, 12(5.3%) of them had thought occasional sex couldn't lead to pregnancy and 19(8.4%) partner didn't want to use the method. Of those having information on contraceptive knowledge 102(28.4%) obtained from the course they learned,95(26.5%)from family planning professionals,72(20.1%)from their classmate and friends ,38(10.6%)from radio and TV ,32(8.9%) obtained from popular science they read,17(4.7%) from their teachers and 2(0.6%) from their family.

Table 4 Frequency distribution of contraceptive practice of Mettu TTC students, Oromiya, Ethiopia (N=360)

No	Variable	Frequency	Percent
1	**Boyfriend**		
	Yes	258	71.7
	No	102	28.3
2	**Feeling of having sex or sexual intercourse**		
	Yes, in the recent half year	62	17.2
	Yes， In half a year ago	45	12.5
	No	252	70.2
3	**Age at first sexual act**		
	15-19	76	65.5
	20-24	40	34.5
4	**Contraception during first sexual act**		
	Yes	49	42.2
	No	67	57.8
5	**Contraceptive method used at first sexual act**		
	Condom	12	24.5
	Oral contraception pills	27	55.1
	Rhythm method	4	8.2
	Withdraw	1	2
	Implant	5	10.2
6	**Unintended pregnancy**		
	Yes, in the recent half year	61	17.1
	Yes， In half a year ago	50	14
	No	245	68.8
7	**Frequency of unintended pregnancy :**		
	Once	98	88
	Twice	12	11
	≥Three times	1	1
8	**Method used in latest unintended pregnancy**		
	Condom	10	9
	Oral contraception pills	29	26
	Rhythm method	24	21.6
	Withdraw	3	2.7
	Implant	3	2.7
	No method	42	36.2
9	**Deal with the latest unintended pregnancy**		
	Surgical abortion	7	6.3
	Medical abortion	38	34.2
	Preparing to give birth to child	27	24.3
	Didn’t know how to deal with it	39	35.1

10	**Ever used contraception method**		
	Condom	17	13.9
	Oral contraception pills	43	35.2
	Rhythm method	36	29.5
	Withdraw	7	5.7
	Vaginal douching	5	4.1
	Intrauterine device	3	2.5
	Implant	8	6.6
		3	2.5
11	**Frequency of contraceptive use**		
	Always	29	8.3
	Often	13	3.7
	Sometimes	28	8.0
	Occasionally	52	14.9
	Never	226	64.9
12	**Reason for not using method**		
	Thought the occasional sex could not lead to pregnancy	12	5.3
	Thought contraceptive methods were too expensive to buy	1	.4
	Worried about the side effects	14	6.2
	Didn't prepare the pills or tools for the unplanned sex	10	4.4
	Partner didn't want (me) to use a method	19	8.4
	Thought contraceptive methods were inconvenient to buy	1	.4
	Thought the delight would be affected by methods	15	6.6
	Didn't know how to use	154	68.1
13	**Source of information for contraception**		
	Popular science readings	32	8.9
	Newspaper and periodicals	1	.3
	Radio and TV	38	10.6
	Classmates and friends	72	20.1
	Course education	102	28.4
	Family	2	.6
	The family planning professionals	95	26.5
	Lectures	17	4.7

5.5. Prevalence of Knowledge, Attitude, Practice and Unintended Pregnancy

From 360 respondents 192(53.3%) were answered correct option above the mean value and had knowledge about contraceptive method. One hundred fifty four (42.8%) of respondents had positive attitude toward contraceptive method and 210(58.3) of them had practiced the method. One hundred eleven (30.8%) of them had unintended pregnancy.(Table: 5 below)

Table 5 Prevalence of Knowledge, attitude, practice and Unintended Pregnancy among students in Mettu teacher training college, Oromiya, Ethiopia (N=360).

Item	Mean	Frequency(Percent)
Knowledge	44	
Not knowledgeable		168(46.7%)
Knowledgeable		192(53.3%)
Attitude	15	
Positive attitude		154(42.8%)
Negative attitude		206(57.2%)
Practice	34	
Practiced		210(58.3%)
Not practiced		150(41.7%)
Unintended pregnancy		
Experienced		111(30.8%)
Not experienced		249(69.2%)

5.6. Factors associated with unintended pregnancy

In order to identify the association of independent variables with Unintended Pregnancy both bivariate and multivariate analysis were used. Those variables showed association ($P < 0.25$) with outcome variables in the bivariate analysis like age group(15-19 years), year of education(third year), department they learn, priority consideration(convenience and safety), emergency method used(LNG,mifepristone,IUCD and vaginal douching),thought that emergency method can/cant substitute regular method, method suitable for college students(IUCD,oral pills, emergency method, withdrawal method and male condom),abortion impact, frequency of method used(always used the methods),ever used method(condom, rhythms and implant) and reason for not using contraception method(thought that occasional sex couldn't lead to pregnancy, didn't prepared pills/tools and thought that delight would be affected) were selected as candidate variables for multivariable logistic regression analysis.

Multivariable logistic regression analysis was used by taking all these factors into account simultaneously and only six of the most contributing factors remained to be significantly associated with Unintended Pregnancy were age group (15-19 years), departments (sport),

method suitable for college students (withdrawal method), ever used method (condom and rhythms) and reason for not using method (thought that occasional sex couldn't lead to pregnancy). (Table: 6 below)

Table 6 Factors associated with unintended pregnancy among students in Mettu teacher training college, Oromiya, Ethiopia (N=360).

variables	unintended pregnancy					
	Yes(n=111)	no(n=249)	COR 95% CI	p	AOR95%CI	p
Age						
15-19	82(57.3%)	61(42.7%)	0.115(.069-.192)	.000*	.096(.051-.180)*	.000
20-24	29(13.4%)	188(86.6%)	1			
Educational level						
Third year	25(24.5%)	77(75.5%)	1.574(.887-2.795)	.121**		
Second year	40(32.8%)	82(67.2%)	1.048(.624-1.760)	.860		
First year	46(33.8%)	90(66.2%)	1			
Department						
Physics	20(30.8%)	45(69.2%)	.247(.100-.607)	.002*		
Sport	30(44.1%)	38(55.9%)	.139(.058-.332)	.000*	.185(.089-.382)*	.000
History	30(42.9%)	70(57.1%)	.146(.061-.349)	.000*		
Civics	23(30.3%)	53(69.7%)	.253(.105-.608)	.002*		
Biology	8(9.9%)	73(90.1%)	1			
Priority consideration						
Contraceptive effectiveness	11(9.9%)	29(11.6%)	1(.473-2.110)	.999		
The convenience of buying or using contraceptive tools	12(10.8%)	11(4.4%)	.348(.147-.824)*	.016		
The safety of contraceptive methods	19(17.1%)	27(10.8%)	.539(.282-1.031)**	.062		
The feeling of using contraceptive methods	69(62.2%)	182(73.1%)	1			
The side effects of Oral contraceptive pills						
Affecting fertility	36(32.4%)	83(33.3%)	.886(.528-1.519)	.682		
Risk of weight gain	13(11.7%)	24(9.6%)	.757(.352-1.629)	.476		
Nausea/vomit	5(4.5)	10(4%)	.820(.264-2.547)	.731		
Affecting the regularity of the menstrual cycle	70(63.1%)	149(59.8%)	1			
Emergency contraception						
levonorgestrel tablets	26(23.4%)	22(8.4%)	.242(.126-.466)*	.000		
mifepristone	13(11.7%)	22(8.8%)	.485(.227-1.035)**	.061		

Intrauterine device	22(19.8%)	39(15.7%)	.508(.275-.940)*	.031		
Vaginal douching	3(2.7%)	2(.8%)	.191(.031-1.177)**	.074		
Don't know at all	47(42.3%)	164(65.9%)	1			
Emergency contraception substitute for regular contraception						
Can	37(33.3%)	76(30.5%)	.642(.372-1.108)**	.112		
Can not	39(35.1%)	61(24.5%)	.489(.281-.850)*	.011		
Don't know	35(31.5%)	112(45%)	1			
Contraceptive methods suitable for college students						
Rhythm method	10(9%)	24(9.6%)	.766(.344-1.706)	.514		
Intrauterine device	8(7.2%)	6(2.4%)	.239(.079-.721)*	.011	.255(.063-1.03)	.055
Oral contraceptive pills	11(9.9%)	17(6.8%)	.493(.217-1.120)**	.091		
Implant	5(4.5%)	11(4.4%)	.702(.233-2.113)	.529		
EC method	7(6.3%)	6(2.4%)	.273(.088-.850)*	.025		
Withdrawal	5(4.5%)	4(1.6%)	.255(.066-.986)*	.048	.164(.032-.827)*	.029
Male condom	13(11.7%)	17(6.8%)	.417(.190-.916)*	.029		
Don't know at all	52(46.8%)	163(65.5%)	1			
impact on women's physical and mental health after abortion						
Slightly	4(3.6%)	4(1.6%)	.424(.104-1.730)**	.232		
Uncertain	4(3.6%	7(2.8%)	.743(.213-2.593)	.641		
Serious	101(91%)	238(95.6%)	1			
An impact on women pregnancy after abortion?	92(82.9%)	224(90%)	1.85(.972-3.523)**	.061		
Frequency of contraceptive use						
Always	17(15.3%)	12(4.8%)	5.2(1.538-17.577)*	.008		
Often	8(7.2%)	5(2%)	1.907(.517-7.035)	.333		
Sometimes	16(14.4%)	12(4.8%)	1.040(.446-2.423)	.928		
Occasionally	26(23.4%)	26(10.4%)	.982(.521-1.851)	.956		
Never	42(37.8%)	184(73.9%)	1			

Contraception method ever used						
Condom ever used	13(11.7%)	1(.4%)	.224(.026-1.914)**	.172	.025(.003-.232)*	.001
Rhythm method ever used	22(19.8%)	14(5.6%)	1.85(.710-4.826)**	.208	.263(.112-.618)*	.002
Withdraw	5(4.5%)	2(.8%)	1.164(.197-6.881)	.867		
Vaginal douching	4(3.6%)	1(.4%)	.727(.073-7.224)	.786		
Implant	2(1.8%)	6(2.4%)	8.727(1.531-49.760)*	..015		
Oral contraception pills	32(28.8%)	11(4.4%)	1			
Reason for not using contraception method						
Thought the occasional sex could not lead to pregnancy	10(9%)	2(.8%)	.211(.045-.993)*	.049	.059(.010-.328)*	.001
Worried about the side effects	6(5.4%)	8(3.2)	1.896(.608-5.916)	.271		
Didn't prepare the pills or tools for the unplanned sex	6(5.4%)	4(1.6%)	4.213(.867-20.484)**	.075		
Partner didn't want (me) to use a method	12(10.8%)	7(2.8%)	.948(.365-2.462)	.913		
Thought the delight would be affected by methods	2(1.8%)	13(5.2%)	6.847(1.495-31.363)*	.013		
Didn't know how to use	27(24.3%)	127(51%)	1			

NOTE: Single asterisk (*) shows variable whose p-value less than 0.05 and double asterisk shows candidates for multivariate analysis (p-value less than 0.25)

6. Discussion

From total participants 29.8% of the unmarried female students were sexually active and 30.8% of them had unintended pregnancy. This finding shows the reduction in the proportion of sexually active female (65.9%) and the prevalence of unintended pregnancy (51.7%) by more than half that obtained from previous case study on student awareness towards the effects of unintended pregnancy (13). This much variation may arise due to design difference between both studies as the former study used secondary data from Mettu Karl hospital which is susceptible to data collector bias in selecting the recorded profile of the study units which in turn exaggerated the prevalence of unintended pregnancy among students. But the result of this study is consistent with result of study conducted on unmarried female students of china where the prevalence of unintended pregnancy (31.8%) (15).

The occurrence of unintended pregnancy was associated with student's sociodemographic characteristic at their first intercourse. Those whose age ranges from 15-19 years are less likely had unintended pregnancy (AOR=0.096, 95%CI=0.051-0.180) as compared with those in 20-24 years old. Since most of this age group lives with their parents, they have no freedom to do whatever they want and according our culture it is taboo to be pregnant prior to marriage. This study is consistent with study result in north Ethiopia where age group greater than or equal to 20years had highest unintended pregnancy (84.8%) (27). But study in Kenya and Ghana showed that youth whose age are greater or equal to 20 have less odd of unintended pregnancy (23, 25). Also other study Brazil shows female whose age less than 20 are more likely to experience unintended pregnancy(20) and may be associated with the impact of westernization and cultural difference.

From total participants 53.3% respondents have contraception knowledge and 58.3% respondents used contraceptive method during sexual activity. This is inconsistent with study finding in India and Tanzania where majority of students have knowledge about contraception (98%and 93.8% respectively) (31, 30). There is huge discrepancy between those having knowledge (93.8%) and practicing contraception method (40.4%) in undergraduate female university student in Tanzania than the result of this study (30). In this study the percentage of student having knowledge and practicing contraception is close to each other with minimum difference.

Contraceptive method prevents unintended pregnancy when used correctly and consistently. About fifty eight percent of students practiced or used contraception method. This result is in

agreement with the result of study conducted on madawalabu university students where 63.6% students had practiced contraception method (28) and national prevalence of contraception use (58.1%) (12).

Student attending sport class [AOR=0.185, 95%CI (0.089-0.382)] less likely had unintended pregnancy compared to those in biology class. In biology the student might learn about sexuality and physiology of reproductive system. This theoretical knowledge may gives hem confidence to use contraception method but practically they may not know how to use method correctly and consistently which may predispose them to unintended pregnancy.

Students who thought that withdrawal method [AOR=0.164, 95%CI (0.032-0.827)] is suitable method for college students less likely had unintended pregnancy compared with those who don't know method suitable for college students. This may associated with lack of knowledge about contraception method and not using any method during sexual intercourse or using contraception method incorrectly and inconsistently among those who don't know suitable method.

From ever used method 43(35.2%) used OCP, 36(29.5%) used rhythmic method and 17(13.9%) used condom anytime they did sex.This shows low utilization of barrier method which predispose student not only pregnancy but also sexually transmitted disease. This is consistent with finding in south east Nigeria where 13.2% adolescent ever used condom. But it is inconsistent with finding in China and India where 82.9% and 81% student ever used condom respectively (15, 31).

Respondents who ever used condom [AOR=0.025, 95%CI (0.003-0.232)] and rhythm [AOR=0.263, 95%CI (0.112-0.618)] methods less likely had unintended pregnancy compared with those used oral contraceptive pills. This may also associated with probability of missed pills and male partner's involvement in those used condom as contraceptive tools may improves correct use of method. Respondents who used traditional method(rhythm) had lower odd of having unintended pregnancy which is consistent with study in Ghana where those used traditional method has lower odd of carrying unintended pregnancy[AOR=0.66,95%CI(0.49-0.89)](25). Respondents who thought that occasional sex couldn't leads to pregnancy [AOR=0.059, 95%CI (0.010-0.328)] less likely had unintended pregnancy compared with those who don't know how to use contraception method. This may associated with the time occasional sex performed may be during infertile time when pregnancy is not occurred.

7. Conclusion

- Around thirty percent of the unmarried female students are sexually active.
- Among sexually active female 30.8% of them had unintended pregnancy.
- Fifty three percent of students had knowledge about contraceptive and fifty eight percent of them had used the method.
- The most commonly ever used methods are oral pills (35.2%), rhythmic method (29.5%) and condom (13.9%).
- There were significant association between age group, department they learn, method suitable for college students (withdrawal method), ever used method (condom and rhythm method) and reason for not using contraceptive method (thought that occasional sex couldn't lead to pregnancy).

8. Recommendation

Health bureau of Mettu town

- Should work on the awareness creation about long term contraception method among students using available resource (nurse and any local NGO)

Mettu teacher training college

- Should work with teachers and other supporting staff on information provision about family planning and reproductive physiology and
- Should Establish different centers that bring students together to share information about sexuality and contraception among students

Researcher

- Finally this study provides clue for further study on Sexually Transmitted Disease since the utilization of condom along with other method was significantly low.

9. Limitation and Strength of the study

The result would help stakeholder in understanding the problem of students and designing what to do as solution for the problem. But the sensitivity of the issue under study, and difficulty of some word or language used in the questionnaires being understood by student that resolved after data collector clearly elaborated the purpose of study and clarifying some words used in tools; difficulty to generalize study result to female student in primary and secondary school were also considered as the limitation.

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Annex I:-Consent form (English version)

Client consent form to assess contraception and unintended pregnancy among student in Mettu TTC, Oromiya Ethiopia.

Introduction.

My name is _____ I am working in research team which is conducted by Addis Ababa University for partial fulfillment of master's degree in maternity and reproductive health nursing. The objective of the study is to assess the knowledge, attitude, practice of contraception and unintended pregnancy among student in Mettu TTC. I am going to ask you some questions that are not difficult to answer. Your name will not be written in this form and will never be used in connection with any of the information you tell me. You do not have to answer any question that you do not want to answer and you may end this interview at any time you want to. However, your honest answers to these questions will help as in identifying contraception and unintended pregnancy in the future. We would appreciate your help in responding to this survey questions. Would you be willing to participate [indicate by ticking the appropriate responses]?

Yes ☐

No ☐

Signature of the data collector certifying that the informed consent has been verbally by respondents-

_____	_____	_____
Name of the Data collector	Date	Signature

If you have any question regard to this study, you can ask immediately the interviewer or the investigator (Tele: 0917078756/0932487430).

Annex II: - English version questionnaires

Part 1 Sociodemographic characteristics

Question	Response
1.Age	_____ years
2. What is your religion? A. Orthodox B. Protestant C. Muslim D.Others	
3.Educational level 1.First year 2.Second year 3.Third year	
4.Department 1. Physics 2. Sport 3.Biology 4.Civic 5.History	

Part 2 Contraceptive Knowledge of the students

No	Questions	Response
1	What are the basic conditions for human pregnancy?（more than answer is possible） 1-Sperm 2-Ovun 3- Genital tract 4-Uterus 5-all	
2	Which of following is true about menstruation? 1-After ovulation will have menstruation 2- The temperature is rising in menstrual period 3-Ovulation happens on the 14th day before next menstruation 4- Ovulation happens on the 14th day behind menstruation	
3	Who should be responsible for contraception? 1-Man 2-Woman 3-Both of them have responsibility 4- None of them	
4	The priority consideration of choosing contraceptive methods： 1-Contraceptive effectiveness 2-The feeling of using contraceptive methods 3-The convenience of buying or using contraceptive tools 4- The safety of contraceptive methods	
5	The side effects of Oral contraceptive pills？（multiple choice） 1-Affecting fertility 2-Affecting the regularity of the menstrual cycle 3- Risk of weight gain 4-Nausea/vomit 5- No side effects	

6	Which methods can be used for emergency contraception?（multiple choice） 1- levonorgestrel tablets 2- mifepristone 3- Intrauterine device 4- Vaginal douching 5- Don't know at all	
7	Whether emergency contraception can substitute for regular contraception? 1-Can 2-Can not 3-Don't know	
8	Do you think contraceptive methods can completely prevent pregnancy? 1-Can 2-Can not 3- Don't know	
9	Which contraceptive methods do you think is suitable for college students?（multiple choice） 1-Rhythm method 2-Intrauterine device 3- Oral contraceptive pills 4-Implant 5-EC method 6- Withdrawal 7-Male condom 8-Don't know at all	
10	Which stage of the menstrual cycle most likely to conceive? 1-During menstrual bleeding period 2- A few days before or after menstruation 3-About 14 days before menstruation	

	4- Don’t know at all	

Part 3 Student’s attitude toward contraception

No	Question	Response
1	What do you think is it necessary to know the contraceptive knowledge? 1- Necessary 2- Unnecessary	
2	Do you think there may be an impact on women's physical and mental health after abortion? 1- Not at all 2- Slightly 3- Serious 4- Uncertain	
3	Do you think there may be an impact on women pregnancy after abortion? 1-Yes 2-No	
4	Do you think College students need to learn sexual knowledge？ 1-Need 2-Do not need	
5	Do you agree with "sex education will lead to more sexual behavior"? 1-Agree 2-Disagree	
6	How do you think about "chastity"： 1-Important for female but not important for male 2-Important for male but not important for female 3-It is important for both male and female 4-It is not important for both male and female	
7	What is your attitude toward premarital sexual behavior： 1- Don't agree with premarital sex	

	2- If I have a boyfriend/girlfriend, I can accept 3- If I am ready to get married with he/she, I can accept 4- No matter I have emotion for he/she, I can accept	
8	What is your attitude toward unmarried cohabitation： 1-Agree 2-Can understand 3-Disagree	

Part 4.Contraceptive practice of students

No	Question	Response
1	Do you have a boyfriend? 1-Yes 2-No	
2	Have you ever had feeling of having sex or sexual intercourse? 1-Yes, in the recent half year 2-Yes， In half a year ago 3-No	
3	How old are you at your first sexual act?	_____ years
4	Did you use contraception during your first sexual behavior? 1-Yes 2-No (skip to C6)	
5	Which contraceptive method do you used at your first sexual act? 1-Condom 2-Oral contraception pills 3-Rhythm method 4-Withdraw 5-Intrauterine device	

	6-Implant	
6	Have you or your classmate had unintended pregnancy? 1-Yes, in the recent half year 2-Yes， In half a year ago 3-no (skip to question 10)	
7	How many times do you or your classmate have unintended pregnancy : 1-Once 2-Twice 3-≥Three times	
8	Which method of contraception was used in your latest unintended pregnancy 1-Condom 2- Oral contraception pills 3.Rhythm method 4- Withdraw 5-Vaginal douching 6-Intrauterine device 7-Implant 8- No method	
9	How do you deal with the latest unintended pregnancy： 1-Surgical abortion 2-Medical abortion 3-Preparing to give birth to child 4- Didn’t know how to deal with it	
10	Frequency of contraceptive use? 1-Always 2- Often	

	3.Sometimes 4- Occasionally 5-Never	
11	Which contraception method you ever used?(multiple choice) 1-Condom 2- Oral contraception pills 3-Rhythm method 4- Withdraw 5-Vaginal douching 6-Intrauterine device 7- Implant	
12	Why don't you use contraception（multiple choice） 1-Thought the occasional sex could not lead to pregnancy 2-Thought contraceptive methods were too expensive to buy 3-Worried about the side effects 4-Didn't prepare the pills or tools for the unplanned sex 5-Partner didn't want (me) to use a method 6- Thought contraceptive methods were inconvenient to buy 7-Thought the delight would be affected by methods 8- Didn't know how to use	
13	Which way do you obtain the sex and contraception knowledge (multiple choice, selecting more than is possible 1.Popular science reading	

	2.Newspaper and periodicals 3.Radio and TV 4.Classmates and friends 5.Course education 6.Family 7.The family planning professionals 8.Lecturers	

Annex III: - Afan Oromo version consent form

Seensa

Maqaan koo _____ jedhama. Ani miseensa gartuu qo'annooti.Anii sin waliin marii kanan taasisu wayita ta'u, isin immoo dhimma waa'ee kaayyoo fi haala walii gala qo'annichaa ilaalchisee akka armaan gadiitti isiniif barreeffame dubbistan kabajaan isin gaafachaa, qo'annaa kana irratti hirmaachuuf waliigaluu fi dhiisuu keessan na beeksisaa. Qo'annichis ogeessa hojjetaa gaaffii gaafannoo qo'annichaan isiniif dhiyaatuu adeemsifama.Yeroo keessan muraasa daqiiqaa 44-45 ta'u qo'annaa kana adeemsisuuf nu gargaaru akka naaf kennitan kabajaan ani sin gaafadha.Kayyoon qu'annichas maloota ulfa hin barbaadamne ittiin gidduu seenuuf (maqsuuf) fayyadan qopheessuuf fi sababoota kana waliin hidhata qaban adda baafachuu akka nu dandeessisu ni abdanna. Iccitiin odeeffannoo kanaas guutummaan guutuutti kan isiniif eegamu ta'uu nan isiniif mirkaneessa. Deebiin isin gaaffii kamiifuu kennitan nama kamittuu hin kennamu (hin beeksifamu), akkasumas gabaasni qo'annaa kanaa eenyummaa keessanis hin beeksisu. Bu'aan gabaasichaa yoo maxxanfame, odeeffannoon waa'ee gartuu hundaa ykn waliigalaa bakka tokkotti dhiyaata akkasumas ibsama.

Deebii kennaan hayyamamaa ta'ee jira. Gaafannoo kanneen irratti hirmaachuuf hayyamuunis ta'e diduun keessan, amma ykn gara fuula duraatti isin ykn maatii keessan irratti dhiibbaa homaatuu hin hordofsiisu.

Qo'annaa kana irratti hirmaachuuf fedha qabduu?

1. Eeyyeen 2. Lakki, Fedha hin qabu

"Eeyyeen" yoo ta'e galateeffadhaati gaaffilee dhiyaatan xumuraa.

Waraqaa Odeeffannoo

Maqaa qorataa: Alamaayyoo Dassale

Teessoo: yuniversiitii Finfinnee, Lak.bilbilaa : 0917078756/I-meelii: adassale3@gmail.com

Annex V Afan Oromo version of questionnaires

Kutaa 1 ***Amaloota Hawaas-Dimograafii barattoota kollejjii barsiisota mattuu***

Gaaffiileen	deebii
1.Umurii	**_____ waggaa**
2.Amantiin kee kami 1.ortoodoksii 2.piroteestantii 3.muslima 4.kan biraa	
3.Sadarkaan barnoota kee kami 1.waggaa jalqabaa 2.waggaa lammafaa 3.waggaa sadaffaa	
4.Diipartimentiin ke kami 1. fiiziksii 2. ispoortii 3.baayoloojii 4.siiviksii 5.seenaa	

kutaa 2 Gaaffiilee beekumsa barattootni maloota ulfa ittin ittisan irratti qaban

Lakk.	Gaaffiilee armaan gadii yoo deebistan tokkoo ol filachuun ni danda'ama.	deebii
1	Kamtuu ulfi akka uumamuf bu'uura? (tokkoo ol filachun ni danda'ama) 1-shanyii kormaa 2-hanqaaquu 3-qaama wal-hormaataa 4-gadammeessa 5-hundumaa	
2	Waa'ee marsaa laguu dhugaa kan ta'e kami: 1-ovuleeshinii booda dhufuu danda'a 2- temperecheriin qaama yeroo marsaa laguu ni dabala 3-ovuleeshinin kan raawwatu guyyaa 14rratti marsaa laguuu itti aanu duursetu 4- ovuleeshinin kan raawwatu guyyaa 14rratti marsaa laguu booda	
3	Ulfa ittisun itti gaafatamummaa eenyuti 1-dhiiraa 2-dubaraa 3-kan lameenu 4- lameenu hin ilaallatu	
4	Maloota ittiin ulfa ittisan fayyadamuuf kamiif dursa kennita 1-ciminasaa 2-fedha ke 3-salphaatti argachuu koo ykn bitachuu danda'u ko 4- gaarummaasa	
5	Miidhan cinaa karoora maatii inni liiqimsamuu qabu kami 1-da'umsarratti dhiibbaa qaba 2-marsaa laguu jeeqa 3- ulfaatina dabaluu danda'a 4-balaqmsiisa 5- midhaa cinaa tokkollee hin qabu	

6	Maloota armaan gadii keessa kamtu ulfa tasa ittisuuf gargaara 1- levonorgestrilii kan liqimsaa 2- mifepiristonii 3- gadammeesa keesa isa ta'u 4- qaama saala miichachuu 5- hin beeku	
7	Qorichi ulfa akka tasaa ittisuf gargaaru karoora maatiiif qorichoota fayyadan bakka bu'uu danada'aa ? 1-ni danda'a 2-hin danda'u 3-hin beeku	
8	Qorichi ulfa ittisu guutummaa guututti ulfa ittisu ni danda'aa? 1-ni danda'a 2-hin danda'u 3-hin beeku	
9	Barattoota kollejjiif qorichi ulfa ittisu miijatan kami 1.Mala uumamaa 2.Kan gadammeessa keessa ka'amu 3- afaniin kan liqimfamu 4.Impilaantii 5-mala ulfa akka tasaa ittisu 6- qaama kormaa dhangalasuu dura buqushaa keessa baasu 7-kondomii dhiira 8-hin beeku	
10	Sadarkaa marsaa laguu kamirratti ulfi uumamu danda'a 1-yeroo marsaa laguu 2- guyyaa murasa laguu durse ykn boodde 3-guyyaa 14 laguu dursee 4- hin beeku	

Kutaa 3 Gaaffiilee ilaalcha barattootaa maloota ittin ulfa ittisan irratti qaban

Lakk	Gaaffii	Deebii
1.	Ulfa ofirraa baasun fayyummaa qaamaa fi sammuu dubartootarratti qaba jettee yaaddaa ? 1.tasuma hin yaadu 2.xiqqoo ni qaba 3.sirrittii dhibbaa qaba 4.hin beeku	
2.	Ulfa ofirraa baasun carraa ulfaa'u irratti dhiibbaa qaba jettee yaaddaa? 1.eeyyee 2.lakkii	
3	Barumsi waa'ee wal hormaataa fi salqunnamtii barattoota kollejjiif ni barbaachisaa? 1.Ni barbaachisa 2.hin barbaachisu	
4	Barumsi waaa'ee wal hormaata fi salqunnamtii baratootni walqunnamtii saalaa keessatti akka hirmaatan ni taaasisa.yaadni kee maali? 1.irratti waliin gala 2.irratti walii hin glu	
5	Beekumsi ittiin ulfa ittisan ni barbaachisaa. Yaadni ke maali ? 1- ni barbaachisa 2- hin barbaachisu	
6	Waa'ee walquunnamtii saalaa irra of eeggachuurratti mal yaadda? 1-dubartootaf barbaachisaadha garuu dhiirotaaf hin barbaachisu 2- dubartootaf hin barbaachisu garuu dhiirotaaf ni barbaachisa 3-dhiirafis dubartiifis ni barbaachisa 4- lameenufu hin barbaachisu	
7	Walqunnamtii saalaaa fuudhaa fi heeruma duraa irratti ilaachi kee maali 1- irratti walii hin galu 2- yoon hiriyaa dhiiraa qabaadhe yaadicha nan fudha	

	3-yoon heerumuf qophaa'e yaadicha nan fudha 4- rakkina hin qabu yoon fedha walqunnamtii saalaa godhe nan fudha	
8	Fuudhaa fi heeruma dura waliin jiraachuu dhiira fidubara irratti ilaalchi kee maali 1-irratti walii nan gala 2- nan hubadha ykn ilaalcha madaalawan qaba 3-ittin walii hin galu	

kutaa 4 Gaaffiilee itti fayyadama maloota ulfa ittisanii

Lakk	Gaaffii	Deebii
1.	Hiriyaa jaalalaa qabda? 1-eeyyee 2-hin qabu	
2	Wal-Qunnamtii saalaa gootee beektaa 1-eyyeen ji'oota ja'an darban keessa 2-eeyyee ji'oota ja'aan dura 3-lakkii	
3	Waggaa meeqatti walqunnamtii saalaa jalqabde _____	
4	Yeroo jalqabaaf wal-qunnamtii saalaa yogguu goote qoricha ulfa ittisu fayyadamteetta? 1-eeyyee 2-lakkii(gara gaaffii 6 ce'i)	
5	Qoricha ulfa ittisan keessa kam fayyadamte Yeroo jalqabaafwalqunnamtii saalaa yogguu goote 1-kondoomii 2-isa afaniin liqifamu 3-mala uumamaa 4-qaama kormaa dhangalaaasuu dura buqushaa	

	keessaa baasu 5-isa gadammeessa keessa ka'amu 6-Impilantii	
6	Ulfi itti hin yaadamiin si ykn hiriyaa ke mudaate beeka 1- eyyeen ji'oota ja'an darban keessa 2-eeyyee ji'oota ja'aan dura 3-lakkii (gara gaaffii 10tti ce'i)	
7	Al-meeqa Ulfi itti hin yaadamiin si ykn hiriyaa ke mudaate: 1-a-ltokko 2-al-lama 3-al-sadii fi isaaol	
8	Ulfa itti hin yaadamiin isa dhiyootti si mudate dura mala ulfa ittin ittisan isa kam fayyadamtee turte? 1-kondomii 2- isa liqimfamu 3.mala uumamaa 4- qaama kormaa dhangalaaasuu dura buqushaa keessaa baasu 5-buqushaa miiccachuu 6-isa gadameessa keessa ka'amu 7-Imrpilantii 8- mala kamiyyu hin fayyadamne	
9	Ulfa hin barbaadamne isa amma akkamitti xumurta： 1-mala sarjikaalan ofiirran baasa 2- mala medikaalan ofiirran baasa 3-da'uuf of qoppheessun 4- mal akkan godhu hin beeku	

10	Mala ittin ulfa ittisan hagam fayyadamta 1-yeroo hunda 2- darbee darbee 3.yeroo tokko tokko 4- yeroon barbaade qofa 5-tasuma fayyadamee hin beeku	
11	Maloota ittin ulfa ittisan kannen armaan gadii keessa kam fayyadamtee beekta? 1-kondomii 2- isa afaaniin liqimfamuu 3-mala uumamaa 4- buqushaa alatti qaama kormaa dhangalasuu 5-wal qunnamtii saala booda buqushaa qulqulleesuu 6-isa gadammeessa keessa ka'amu 7-Impilantii	
12	Maaliif maloota ittin ulfa ittisan hin fayyadamtu? 1-qunnamtii saalaa darbee darbee raawwatamu ulfa hin fidu jedhee waanan yaaduf 2-malootni ittin ulfa ittisan bituuf gaatiin sanii mi'a wan ta'eef 3-miidhaan cinaan sanii wan na sodaachisef 4-yeroon qunnamtii saala tasisu maloota kana of harkaa wan hin qabnef 5-hiriyaan ko akkan fayyadamu waan hin barbaadnef 6- bitachuuf wan hin mijanneef 7-fedhii sal-qunnamtii saalaa ni miidhu yaada jedhu wanan qabuf	

	8- akkatti fayyadamu wan hin beeknef	
13	Beekumsa maloota ittin ulfa ittisa essa argatte 1- saayinsii bebeekamoo dubbisuun 2- gaazexarraa 3- radiyoo fi TV 4- hiriyoota korraa 5- barumsan baradhuurra 6- maatii korraa 7- ogeessa karoora maatii 8- barsiisa korraa	