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Magnitude of emergency contraceptive use and Associated Factors Among Female Students in Dire Dawa University, Eastern Ethiopia.

Research

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MAGNITUDE OF EMERGENCY CONTRACEPTIVE USE AND ASSOCIATED FACTORS AMONG FEMALE STUDENTS IN DIRE DAWA UNIVERSITY, EASTERN ETHIOPIA.

A Thesis Submitted to College of Health and Medical Science,

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In Partial Fulfillment of the Requirement for the Degree Of

Masters of Public Health

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PPROVAL SHEET

I hereby certify that I have read and evaluated this thesis prepared magnitude/status of emergency contraceptive use and associated factors among female students in Dire Dawa University, eastern Ethiopia under my guidance by Meskerem Adugna. I recommend that it be submitted as fulfilling the thesis requirement.

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As a member of the board of examiners the Mph Thesis Open Defense Examination, I certify that I have read and evaluated the Thesis prepared by Meskerem Adugna and examined the candidate. I recommend that the Thesis be accepted as fulfilling the Thesis requirements for the degree of Master of Public health in nutrition.

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BIOGRAPHICAL SKETCH

My name is Meskerem Adugna Debele. I was born a in Addis Ababa, Ethiopia in September 1, 1989 G.C.

I had completed my primary education in Selamber primery school and my secondary education at Kolfe kopracive secondary school and preparatory at Holeta preparatory school. I joined and received B.Sc. degree in pharmacy professional from Addis Ababa 2015 GC.

Concerning my work experience, I was been working in Yekatit 12 Medical College Hospital Specialized as pharmacist professional for the last five years.

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LIST OF ABBREVIATIONS

EC	Emergency contraception
EDHS	Ethiopian Demographic and Health Survey
FMOH	Federal Ministry of Health of Ethiopia
KAP	knowledge, attitude and practices
OTC	Over the counter
PPS	Population proportion sampling
RH	Reproductive Health
WHO	World Health Organization

Abstract

Background: Emergency contraception is a method of contraception used after intercourse and before the potential time of implantation offers. It is a last chance to prevent pregnancy after unprotected intercourse unlike the regular methods of contraception that are taken before sexual contact. However, little is known about the extent of magnitude and factors associated with use of EC among higher institutions female students in Ethiopia.

Objective: Magnitude/ status of emergency contraceptive use and associated factors among female students in Dire Dawa University, eastern Ethiopia from February 20 to March 30, 2018. **Methods**: Institutional-based cross-sectional study was conducted among regular undergraduate's female students in Dire Dawa University from February, 20 to March, 30 2018. The study population were all regular Undergraduate female students in Dire Dawa University. The total sample size for the study was 1559 by taking the design effect of 1.2 and adding 10% for non-response rate among these only 672 sexually active students were screen for analysis. Data collected using structured questionnaire. SPSS version 22 was employ for analysis. Logistic regression was calculated to show the association between dependent and independent variable. The results presented in tables, graphs and charts.

Result: A total of 1521 students were participated in the study with overall response rate was 97.62%. Among the total study participants 672 (44%) were sexually active. More than three fourth 586/672(87.2%) of the respondents heard about emergency contraceptive of which Two-third 290(43.2%) the respondent's were knowledgeable. Two- third 291/672(43.3%) of the respondents had positive attitude towards emergency contraceptive. Among sexually active students 216/672(32.14%) ever used EC in their life time among this 190(28.27%) students were used EC within the past 12 months. Age [AOR: 0.6; 95% CI= (0.4, 0.9], Year of study [AOR = 0.4, 95%CI =0.2, 0.8], Respondents fathers educational status[AOR: 1.6, 95% CI =1.0, 2.5], having experiences of contraceptive use [AOR: 3.5; 95% CI=2.2, 5.6], had history of pregnancy [AOR: 1.2; 95% CI= (1.1, 3.0] and having awareness about EC [AOR=24.3; 95% CI =3.3, 178.9].

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Conclusion: Awareness of emergency contraceptive among female regular undergraduate students in Dire Dawa University high, but utilization of emergency contraceptive low and most of respondent's attitude toward emergency contraceptive were negative.

Key words:-Emergency contraceptive, practice, factors and Dire Dawa University.

1. INTRODUCTION

1.1. Background of the Study

Emergency contraception (EC) is also called: “post coital contraception”, or “second chance a (Bisrat Z, 2016) is a type of modern contraception which is used after intercourse and before the potential time of implantation, offers women a last chance to prevent pregnancy after unprotected intercourse (Asmare T, *et al*, 2015). Unlike the regular methods of contraception’s it’s taken before sexual contact (Wegene T and Fikre E, 2007). If used correctly, all types of emergency contraceptive pills (ECPs) can decrease the risk of unintended pregnancy by more than 75% which in turn helps to reduce unintended pregnancy and unsafe abortion (Bisrat Z, 2016).

The present youngsters enjoy more freedom of movement than it was a decade ago. With increasing gap between puberty and marriage and, having access to free films on electronic media, premarital sexual relationships are rising (Nalini I A and Anupama S, 2016). Young people today marry later, and more start sex before marriage (Marta T and Hinsermu B, 2015). This has led to many teenage unintended pregnancies. Unintended (Unplanned) pregnancies are either unwanted (mother did not want it to occur at that time or any time in the future) or mistimed (the mother wanted the pregnancy to occur at a later time) (Nothando N and R.T Buthelezi, 2008 and Kumba K, 2015).

Unintended pregnancies are big problem in Ethiopia (Marta T and Hinsermu B, 2015). For instance, in 2008 in Ethiopia, 101, unintended pregnancies occurred per 1,000 women aged 15-44 and 42% of all pregnancies were unintended pregnancy occurred Per 1000 women age 15-44 and 42% all pregnancies were unintended aged 19-25 (Asmare T *et al*, 2015). Unintended pregnancy and unsafe abortion can be prevented by access to contraceptive services (Bikila S and Gemechu K, 2015) including EC. EC is one of the best kept ‘‘secrets’’ in Reproductive Health (Muhammad E and Shanaz G. 2012). However, the Practices of EC vary from country to country, region to region within a country as well as within the same community. The different literatures on these issues are reviewed as follows EC can prevent pregnancy when taken shortly or (Tatek T, 2012) within 72 hours of unprotected sexual intercourse.

Regarding the mechanism of action, EC works by delay or inhibition of ovulation, preventing fertilization, implantation and tubal transportation of sperm and ovum (Fatuma A *et al*, 2012 and Bikila S and Gemechu K, 2015). The general indications for EC are when no contraceptive has been used; when there has been contraceptive accident or misuse and when the women are a victim of sexual assault (Asmare T *et al,* 2015). It has the potential, as the last resort, to avoid unwanted pregnancy and therefore abortion; a desirable goal especially when abortion is illegal (Wegene T and Fikre E, 2007 EC).

In Ethiopia, most of university students travel far from their home for higher education studies, and they are out of care and protection of their parents and families, which makes them more vulnerable to unprotected and accidental sex which leads to unintended pregnancy. Unintended pregnancy either ends with unsafe abortion or early child bearing; it has a negative impact on the educational progress, future careers and even social interaction of female students by forcing them to drop out of school. On the other hand, this segment of the population is tomorrow's generation in pipeline to take over responsibilities of socioeconomic development of the country. Thus, they should be protected from unintended pregnancy that could have been considerably prevented by EC. However, studies conducted on knowledge, attitude and practices (KAP) of EC in different Ethiopian universities revealed that there is higher rate of unintended pregnancy with lower level of knowledge, unfavorable attitude towards EC and fewer number of EC practices among female university students(Molla T, 2016). The aim of this study is to assess magnitude/ status of emergency contraceptive use and associated factors among female students in Dire Dawa University, eastern Ethiopia.

1.2. Statement of the Problem

Globally, 222 million women who want to prevent pregnancy are not accessing effective, modern methods of contraception (Dawson A *et al*, 2015). As a result, each year there are approximately 86 million unplanned pregnancies (Sara T *et al,* 2015), 33 million unplanned births (Dawson A *et al*, 2015) and 46 million (22%) end in abortion (Arun K *et al,* 2012 and Monjok E *et al,* 2010). Thirteen percent of 46 million abortions, 20 million are unsafe (Dawson A *et al*, 2015), 40% of them are done on women aged under 25, and about 68 000 women die every year from complication of unsafe abortion (Haftamu A *et al,* 2015). In sub-

Saharan Africa alone, it is estimated that 14 million unintended pregnancies occur every year, with almost half occurring among women aged 15–24 years (Henry N *et al,* 2016).

Unplanned pregnancy in recent times emerged as a crucial public health issue in developing world because it has extensive adverse health, social and economic effects, not only upsetting (Haftamu A *et al,* 2015) the quality of life of mothers and children (Eniojukan J *et al,* 2016). Adolescents and youth are more likely than older women to have an unplanned pregnancy (Adikinyi K, 2014). Adolescent women aged 15–19 years give birth to 15 million babies each year with over 90% in low and middle-income countries (Dawson A*et al,* 2015). One of the major reproductive health (RH) challenges faced by adolescents in Ethiopia was unplanned pregnancy. As 54% of pregnancies to girls under age 15 are unwanted compared to 37% for those ages 20-24(Motuma G and Amene A, 2015 and Asmare T *et al,* 2015).

The socio-economic factors and lack of reproductive health services are contributing to the increase of unintended pregnancy among adolescents in developing countries (Georges Z. N, 2012), such as economic status, education, religion, place of residence, peers and partners' behaviors, family and community attitudes, awareness gap (Mekonnen S *et al,* 2016), gender and age, and mass media. Furthermore, lack of access to contraceptive methods, reproductive health education (Georges Z. N, 2012) inconsistent or incorrect use of contraceptive methods or failure of the method itself (Haftom G/h and Berhane G/k, 2011) and sex at early age (Marta T and Hinsermu B, 2015).

Unsafe abortion is one of the main contributors to maternal deaths worldwide as a result of unwanted pregnancy while it is more dominating in the developing countries (Nasir T, 2010). One of the major factors responsible for unwanted pregnancies and unsafe abortion is lack of knowledge of the various methods of contraceptives available, including EC (Samira G *et al,* 2014). EC has been available in many countries for the last three decades, it remains relatively unknown and (Abebe K and Alemayehu M, 2009) underutilized around the world for preventing unintended pregnancy (Charles P *et al,* 2014). Different studies show that the knowledge of women about existence, availability and how to use EC is little and their attitudes are negative towards the issue (Fatemeh N *et al,* 2012). In several African countries, survey among University students showed that only three quarter of youth had heard about EC and minimal accurate knowledge about its use (Lale S *et al,* 2014).

The practice of EC is almost inexistent in Ethiopia, as the method is not presented like other methods of contraceptives (Wegene T and Fikre E, 2007). The result of different studies in Ethiopia indicated utilization is less than 10% (Mulugeta M, *et al,* 2016). For example a study done by Wegene T and Fikre E, 2007 EC among university students in Ethiopia only about 44% had ever heard about emergency contraceptives and less than 10% had accurate knowledge regarding when to use (Oluwasanmi L A *et al*, 2011). Another study done by Mekonnen S *et al*, 2016, among the antenatal care seekers of Sululta Health Centers, Oromia region, Ethiopia of the 87 study participants 25 (28.7%) had ever heard about EC. Whereas only 6 (6.9%) of the women had actually used EC.

Several studies were carried out on Knowledge and practices of EC, however, little is known about the extent of magnitude and factors associated with practice of EC among higher institutions female students in Ethiopia, Young people aged 15-24 years in Dire Dawa University students have a higher risk of HIV infection and unwanted pregnancy when compared to other regions of the country(Abtew, B.M, 2009)and in addition to this, the number of youths requesting termination of pregnancy is increasing annually (Dejene T, 2010).This poses a range of major public health problems including an increased risk of complications associated with illegal abortions in the country and may be associated with dropout and non-completion of education amongst students due to unintended pregnancies.

1.3. Significance of the Study

This study is needed because EC play a vital role in preventing unwanted pregnancies, induced abortions and would serve as a backup to other family planning methods. Thus, understanding of magnitude and factors associated with practice of EC is critical for countries like Ethiopia with a population policy aiming at reducing unwanted pregnancy. It also helps for those Dire Dawa University female students to have knowledge and how to use ECs from being interrupted their education as a result of unwanted pregnancy. This study is assumed to provide baseline data for policy makers and education planners in developing appropriate evidence-based strategies and curricula in school/college to prevent unintended pregnancy and have a great role for reducing the morbidity & mortality of Ethiopian women particularly the youth age group as a result of unsafe abortion. Furthermore, this study was show the scope of the problem in the study area and information gathered from this study was providing

baseline data for further study. Finally this study was used for partial fulfillment of the requirements for the Degree of master of public health.

1.4. Objectives

1.4.1. General Objective

Magnitude of emergency contraceptive use and Associated Factors Among Female Students in Dire Dawa University, Eastern Ethiopia.

1.4.2. Specific Objectives

1. Emergency contraceptive utilization status.
2. To identify factors associated with use of emergency contraceptive.

2. LITERATURE REVIEW

2.1. Emergency contraceptive utilization status

A cross sectional study done on KAP of EC amongst 352 female college students of the three tertiary institutions in Dessie, Ethiopia, 19 Mar, 2014. The study revealed that there was a high percentage (78.3%) of unwanted pregnancies amongst those engaging in sex. Significantly nearly half (43.3%) of these unwanted pregnancies resulted in abortion. Only 10% of the students sampled admitted to ever having used emergency contraception (Wendwosen T and Tennyson M, 2014).

Self-administered questionnaire-based study was carried out on knowledge and practice of EC among Adolescents in Calabar, Nigeria. The information was gathered at 3 different recreation parks in the metropolis- Marina resort, Tinapa resort and Calabar municipality resort. A total of 1,246 female adolescents were recruited into this study. About 90% have had sexual intercourse and of this number 65% used Emergency contraceptive pills, 28.5% used condom occasionally while 6.5% did not used any method(Abeshi S, 2017).

Another cross sectional study was done on KAP of EC among the antenatal care seekers of Sululta Health Centers, Oromia region, Ethiopia. The revealed that 87 women included in the study 23 (26.4%) reported that the current pregnancy was unplanned and 5 (5.7%) reported that they had induced abortion in the previous years. Of the study participants 25 (28.7%) had ever heard about EC. Whereas only 6 (6.9%) of the women had actually used EC. The preferred places for the provision of EC were public hospitals 2 (8%), health centers 17(68%), private clinics 3 (12%) & pharmacies 11 (44%). The study concluded that the major barrier to the use of EC is lack of awareness & also there is demand for education (Mekonnen S *et al,* 2016).

A study was done to evaluate the Knowledge and Perception of EC among Female Undergraduates students of Benin University, Nigeria. Of the 880 respondents, 43% were sexually active, 39% had ever practiced contraception and 34% had ever had an induced abortion. Overall, 58% of respondents reported knowing about emergency contraception; sexually active respondents were significantly more likely than those who were not and those who had ever practiced contraception were more likely than those who had not to be aware of

emergency contraceptives. However, only 18% of respondents who reported knowing about emergency contraception knew the correct time frame in which emergency contraceptives must be used to be effective (Michael E. A *et al,* 2003).

2.2. Factors associated with use of emergency contraceptive

Practice of emergency contraception was found to be directly related to age, age of sexual initiation, year of study, marital status, sexual activity, religiosity, and race previous history of use of contraceptives and previous history of induced abortion (O.M. Ebuehi E *et al,* 2006). A cross sectional study was conducted on awareness, use and associated factors of EC pills among 200 women of reproductive age (15-49 years) in tamale, Ghana. Forty percent (39.9%, n = 55) of the participants who had awareness have ever used ECPs. Factors that were found to be associated with the use of ECPs were; participants who said ECPs were affordable had 6.1 times the odds of using them as women who reported they were unaffordable (AOR = 6.1, 95% CI = 2.51 – 10.40, p = 0.001), Women who reported that ECPs were available had 4.8 times the odds of using them as women who reported they were not available (AOR 4.8, 95% CI = 0.61 – 6.01, p = 0.001), cultural acceptable had 3.5 time more likely than the counterpart (AOR = 3.5, 95% CI = 1.01 – 10.15, p = 0.011) and religious unacceptable had 4 time more likely than the counterpart (AOR = 4.0, 95% CI = 1.02 – 10.0, p = 0.005)(Amalba A *et al*, 2014).

A similar cross sectional study was done in Southeast Brazil. The aim of the study was to test how knowledge on EC (according to age at sexual initiation, type of school, and knowing someone that has already used EC) influences the method's use. The sample of students 15-19 years of age enrolled in public and private middle schools in a medium-sized city in Southeast Brazil (n = 307). Data were collected in using a self-administered questionnaire. Considering age at sexual initiation (p = 0.032), type of school (p < 0.001) and knowledge of EC (p = 0.15) was not associated with its use, but knowing someone that had used EC method (p = 0.007) showed a significant mean effect on use of EC. Peer group conversations on EC appear to have greater influence on use of the method than knowledge itself, economic status, or sexual experience (Borges C *et al,* 2016).

The study conducted by Richard J. F and Jennifer O in United States, 2002. They found (based on statistical odds ratios) that those women who viewed religion as very important

attended church frequently (i.e., at least once a week) and held traditional attitudes on religion were less likely to have had an abortion in the past twelve months and less likely to use oral contraceptive, injectable contraceptive and ECs. There was no difference in the likelihood of ever having used IUDs. They concluded that religiosity has a suppressing effect on abortion and abortifacient contraceptive use.

The proportion of women who had heard of emergency contraception ranged from 2% in Chad to 66% in Colombia, and the proportion of sexually experienced women who had used it ranged from less than 0.1% in Chad to 12% in Colombia. The odds of having heard of or used the method generally increased with wealth, and although the relationship between marital status and knowing of the method varied by region, never-married women were more likely than married women to have used EC in countries where significant differences existed. In some countries, urban residence was associated with having heard of the method, but in only three countries were women from urban areas more likely to have used it (Tia P *et al,* 2014).

A comparative study done by Christine D *et al*, 2011 on race, ethnicity and differences in contraception among low income women. Compared with white women, blacks and Latinas were less likely to receive oral contraceptives (odds ratios, 0.4 and 0.6, respectively) and the contraceptive ring (0.7 and 0.5), and more likely to receive the injectable (1.6 and 1.4) and the patch (1.6 and 2.3). Black women were less likely than whites to receive the IUD (0.5), but more likely to receive barrier methods and emergency contraceptive pills. Associations were similar, though weaker, for Latinas. Racial and ethnic disparities in receipt of effective methods declined between 2001 and 2005, largely because receipt of the patch (which was introduced in 2002) was higher among minority than white women.

A study was done on prevalence and determinants of uptake of emergency contraceptive pills among the youth in kikambala, Kilifi County. The study includes 402 female youth aged between 15 and 29 years. The prevalence of use of EC pills was 13.4% and only 34.3% of the study population had knowledge on emergency contraception. The result of the study show that the determinants of usage of ECPs were age, educational level, history of induced abortion and the level of knowledge on emergency contraceptives (Kevina A, 2014).

Another study was done in college students in Puducherry, south India, among 700 students, 529 (76%) (132 from medical college and 397 from engineering college) returned the questionnaire. 306 (58%) out of 529 students were not aware of any method of regular contraception. Of the 529 students, 122 (23.1 %) were aware of emergency contraception, 192 (36.3%) were not aware and 215 (40.6%) did not respond to this question. Regarding potential use, 102 students (19.3%) were likely to use emergency contraception after unintended intercourse, 39 (7.4%) said they would not use it, 291 (55%) were not sure and 97 (18.3%) students did not respond. Overall, 329 (62.2%) responders were not exposed to any formal sex education. The students of medical college had significantly higher exposure to sex education ($p<0.05$) compared with students of engineering college. The factors that emerged as significant predictors for potential use were male sex [adjusted OR (95% CI): 3.245 (1.04-10.08); $p<0.05$] and awareness of emergency contraception [adjusted OR (95% CI): 3.48 (1.19-10.11); $p<0.05$] (klim,C.S, 2015).

Institution based cross-sectional study design was done from March 26 to 30/2013, on 624 regular undergraduate female students of Debre-markos University. Only 68(11.4%) used the method, 158 (26.4%) of students were sexually active, 32(78%) had history of unwanted pregnancy of this 30 (93.7%) had history of induced abortions. Students age 25 and above were 9 times more likely practice EC than who are age between 15-19years old(AOR :9.00,95%CI:1.448, 20.040). Students who are married were 7 times more likely practice EC than not married (AOR: 6.51, 95% CI: 2.455, 17.279), Respondents whose father's educational status secondary school and above were 4 times more likely practice EC when compared to who their father's do not read and write (AOR:4.493, 95% CI: 1.146, 17.619). Students who has adequate knowledge of EC were 24 times more likely practice EC than who has inadequate knowledge of EC (AOR: 23.97, 95%CI: 3.19, 35.83).(Table 7) (Marta T & Hinsermu B, 2015).

A similar institution based cross-sectional study was conducted on KAP of EC among Mettu university female students, west Ethiopia from March to April 2013. The total participants (n = 318), only 25.8 % were sexually active only 21 (22.6%) used the method. Students' ages between 20-24 were 4.25 times more likely practice EC than who are age below 20 and above 24 years old(AOR= 4.25, $P< 0.05$). Being from none health sciences department by a female

student was significantly associated with being a user of emergency contraceptives as students from none health sciences were less likely to use emergency contraceptives (AOR = 0.3, $p<0.01$). Regarding ever had sex versus ever user of emergency contraceptive, ever having sex was associated with increased likelihood of being a user of emergency contraceptives as students who had not practiced sexual intercourse were less likely to use emergency contraceptives (AOR = 0.75, $p<0.01$). Effect of variables included in this analysis such as faculty, age category, marital status, religious affiliation, and ever pregnant was not significant ($p>0.05$) with an ever user of EC. Practice of EC was significantly associated with predictor variables, including age, faculty and sexual status of respondents ($P< 0.05$) (Mulugeta M *et al*, 2016).

A study was done on awareness and utilization of emergency contraceptive among 628 second cycle primary female evening students in Hawassa, Ethiopia. Respondents who had sexual intercourse experience were 67.578 time more likely to utilize EC than their counterparts (AOR=67.578; CI (6.382-715.533). Moreover, as the grade level increases, there appears to be an increase on EC utilization (AOR=15.565; CI (2.316-104.623) for grade seven and AOR=89.324; CI (10.821-737.313) for grade eight] Sexual intercourse experience, fair and good knowledge of EC had positive association [AOR=67.578; CI (6.382-715.533), AOR=15.565; CI (2.316-104.623) and AOR=89.324; CI (10.821-737.313) respectively] with utilization of EC. Students have favorable attitude about the method of EC 1.862 times more likely to utilize EC than unfavorable attitude [AOR=1.862; CI (0.416-8.340] (Alemayehu A and Teferi G, 2013).

A cross-sectional, institution based study was conducted from March 10-30, 2014 on KAP of EC among Mizan-Tepi University Female Students, South West Ethiopia. With regard to practice of EC among sexually active female students (n=188), among sexually active participants, only 68(36.2%) had used EC methods. Respondents who had first sexual intercourse at age 20 and above were 4 times more likely to use EC as compared to those who had their first sexual intercourse at younger age (15-19 years), [AOR: 4.048; 95% CI=1.721, 9.524]. Respondents who had history of pregnancy were 3 times more likely to use EC than those with no exposure of pregnancy [AOR: 3.122; 95% CI=1.346, 7.240]. Similarly, students who had good knowledge on EC were 3.2 times more likely to use EC than those female

students who were not knowledgeable about EC [AOR: 3.248; 95% CI=1.320, 7.988]. The result also showed that respondents who had experience of other forms of regular contraceptive use were 5 times more likely to use EC than those who didn't use other forms of regular contraceptives [AOR: 5.019; 95% CI=2.234, 11.274] (Bisrat Z *et al,* 2016).

A community based survey was conducted among 491 unmarried women of reproductive age in Adama, Ethiopia. Only 4.2% of respondents reported that they had used emergency contraception previously. Respondents who mentioned correctly the fertile period in menstrual cycle that is the 2nd and 3rd week of the menstrual cycle WERE2.96 more likely to have awareness of EC than those mentioned the incorrect time with (AOR 2.96 (95% CI: 1.63, 5.39). Having experience of sexual intercourse was significantly associated with awareness of EC. Those who ever had sexual intercourse were 2.81more likely to have knowledge of EC than those who never had sexual intercourse (AOR 2.81 (95% CI: 1.32, 6.04). EC awareness was higher among those who had discussion of RH (Aman J *et al,* 2016).

A study was conducted among female clients of Ethiopian immigration and nationality affair office in Addis Ababa. Of the 416 respondents, 268(64.4%) stated that they currently practice sexual intercourse (are sexually active). Sixty four (23.9%) of these sexually active individuals had ever episodes for unprotected sex of which 26 (40.6%) were due to rape and 38(59.1%) were because of condom slippage or forgotten pills during sex. Regarding ECs utilization of the study subjects, 25(9.3%) of those who were sexually active had ever used ECs to prevent unintended pregnancy. On the other hand ever use of contraceptive, knowledge to EC and ethnicity were significantly associated to use of EC in the study participants. Lack of knowledge about the method was major barrier for not using emergency contraceptive. Those who have adequate knowledge about EC were 5 times more likely to use EC than their counterparts [AOR=5.08, 95%CI=1.19, 21.56] and those who ever used contraceptive were around 14 times more likely to use EC than not ever used contraceptives [AOR=13.7, 95%CI=2.66, 70.59] (Gessessew B *et al,* 2014).

A cross-sectional study design was employed from February 1 to 30/2009, on KAP of EC among 660 regular undergraduate female students of Adama University. With regard to practice of EC among sexually active female students n=192 (29%), among sexually active participants, only 31(4.7%) had used EC methods. Study subjects who were married subjects

were nine times more likely to use EC than singles (AOR=9.3; 95%CI: 2.54, 20.73). On the other hand, the likelihood of using EC was twice higher among students aged ≥20 years than those younger (15-19 years) (AOR=2.37; 95%CI: 1.102, 7.25) (Dejene T *et al*, 2010).

A study was conducted KAP of EC and associated Factors among 549 Female Students of Debre Markos Higher Institutions, Northwest Ethiopia, 2014. Among 483 respondents 99(18.4%) students were ever used EC. Those female students whose belongs to age group of 25 and above years were 80% less likely user of emergency contraceptives compared to those respondents whose age belong to 20 – 24 years (AOR=0.20 (95% CI= (0.06, 0.62)). Married female students were 82% less likely to use EC as compared with those never married (AOR=0.18(95% =.10, .31)]. Those respondents who did not knew time they heard were 2.94 times more likely to utilize EC compared to those who heard before one year ago (AOR = 2.94(95% CI (1.66, 5.19)]. Students with unfavorable attitude were 98% less likely to use emergency contraceptives (AOR = 0.02 (95% = 0.01, 0.03)]. Those female students whose time heard less than one year duration were 2.01 times more likely to use EC as compared to those whose time heard greater than one year(AOR=2.01(95%CI(1.00,4.00) (Habtamu A, 2014).

A similar cross sectional based study designs was done among students of among Mettu university female students, Oromia regional state, west Ethiopia. A total of participants (n = 318) were includes; only 25.8 % were sexually active. Ninety-three (29.3%) of them had ever heard of EC and only 21 (22.6%) used the method. Knowledge of EC was significantly associated with the faculty of respondents and sexual status of respondents ($p<0.05$). Similarly, attitude and practice of emergency contraceptives were significantly associated with predictor variables, including age, faculty and sexual status of respondents ($P< 0.05$) (Mulugeta M *et al*, 2016).

A cross sectional design was done on contraceptive Use and Associated Factors among Dilla University Female Students, Southern Ethiopia. The prevalence of contraceptive use in this study was 20.9 % [95% CI 17.9, 23.9%]. Out of the total respondents, 180 (32.8%) were sexually active, from which 96 (53.3%) started their first sex at age 15-17 and 75 (41.7%) started their first sex at age 18-20. From 178 (32.3%) respondents that had sex in the last 12 months, more than half 115 (64.4%) had used contraceptives and 63 (35.6%) did not use

contraceptive. Embarrassment to buy, fear of side effects and lack of information where to get the method were the main reasons for not using contraceptives. Attitude towards who should take responsibility was found to be a significantly associated with use contraceptive [AOR =4.2, 95% CI: (2.34 – 12.86)] and not discussing contraceptive issues with friends was found to be a significantly associated with not to use contraceptive [AOR =0.32, 95% CI: (0.15-0.70)] (Masresha S, *et al*, 2016).

2.3. Conceptual Framework

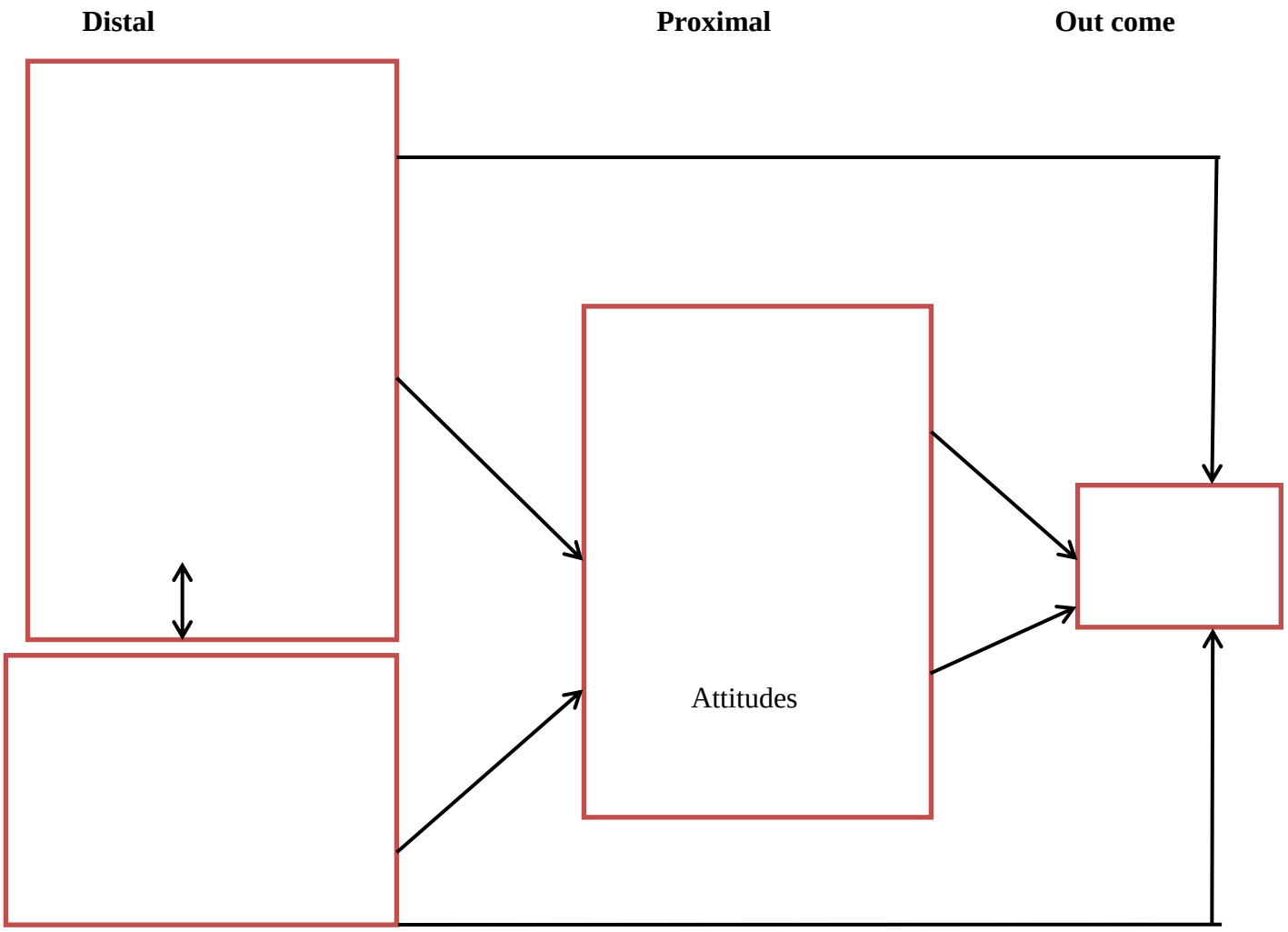

Figure 1. Conceptual Framework of determinant factors of EC use modified from (Berhanu D and Nigatu R, 2011) in Dire Dawa University, 2018.

3. METHOD AND MATERIALS

3.1. Study Area and Period

The study was conducted in Dire-Dawa University is located in the industrial and commercial city called Dire-Dawa located about 500Km east of Addis Ababa, the capital city of Ethiopia. It is located in the geographic center of the country and covers a landmass of 540 sq. km. It is administratively sub-divided into 10 sub cities and 116 weredas. With a population size of about 360,000, Dire-Dawa is Ethiopia's second largest city. Dire-Dawa was founded in 1902 after the Addis Ababa - Djibouti Railway construction reached the area. Dire-Dawa built in a low-lying landscape, which made it ideal for construction of the railway and settlement, and it soon became a vibrant urban center. Dire-Dawa is one of the two chartered cities in Ethiopia, the other being Ethiopia's capital, Addis Ababa. Dire-Dawa is a cosmopolitan city with mosaic culture and its population is known for its mutual respect, tolerance and most of all its hospitality. Everybody feels at home in Dire-Dawa, and this together with industry and commerce dominated economic settings makes it a very suitable place for a university and university community (www. DDU, 2017).The city has two public hospitals, eight health center and two non-government clinics are gives family planning services for the public(Dire Dawa city administration health biro, 2017)

Dire-Dawa University is a young higher institution, established and started its teaching and learning activities in 2007 academic year. The establishment of the university is in line with Ethiopian Governments willingness and determination to expand higher education coverage and ensure its equitable distribution across the country in order to produce competent human resources and research out puts to meet the national development policy and poverty reduction strategy. The actual operation of the university was begun by enrolling 754 regular students in three faculties (Faculty of Natural Science and Mathematics, Faculty of Social Science and language and Faculty of Business and Economics) in 13 different undergraduate academic programs with 90 teachers and 103 administrative support staff operating with limited facilities. In 2008, the satellite campus of Haramaya University was merged with Dire DawaUniversity, which gave an opportunity to gain more buildings and workshops. In 2015academic year, just after eight years of existence, Dire Dawa University has six College (College of Natural & Computational Science, College of Business & Economics, College of

Social Sciences &Humanities, College of Law, College of Medicine and Health Science and college of institution of Technology) containing 38 different academic programs (www. DDU, 2017).

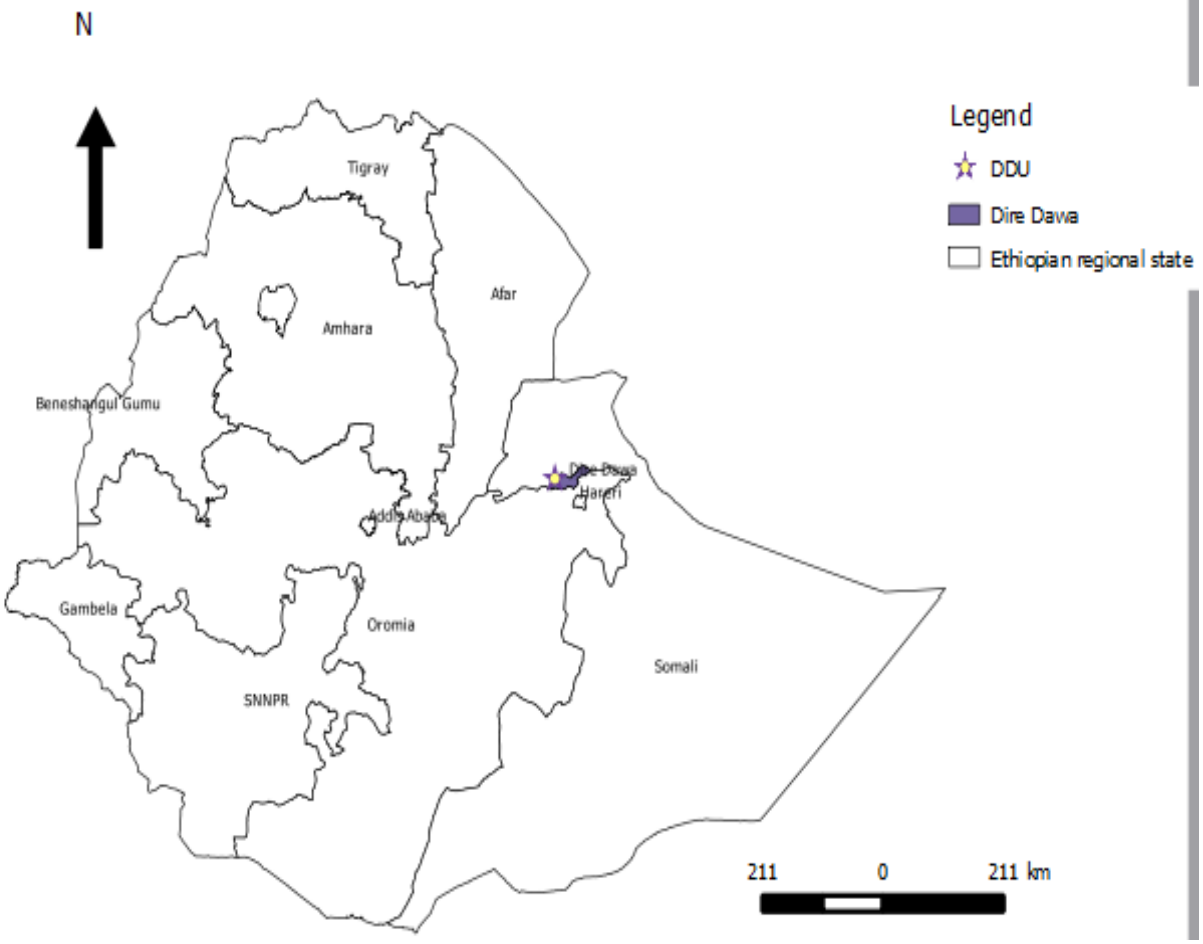

Figure two: Map of study area

3.2. Study Design

The study design institution based cross-sectional study using quantitative methods.

3.3. Population

3.3.1. Source population

All regular female students who were attend their education during the study period.

3.3.2. Study population

All regular under graduate female students who were attend their education during the study period.

3.4. Inclusion and exclusion criteria

3.4.1. Inclusion criteria

All regular undergraduates' female students who were attending their class in 2017/18 and present during the study period

3.4.2. Exclusion criteria

Those students who were sick during the study period were excluding.

3.5. Sample Size Determination

In this study, sample size for the first objective was determining single population proportion formula. $_{n}= \underline{Z\ (\alpha/2)^2 P\ (1-P)}/d^2$ Where n =minimum sample size of the study subject z =standard normal distribution curve /value for the 95% confidence interval (1.96) d = the margin of error taken (0.05).

For objective one. p = **for** emergency contraceptive utilization statues**:** P–Proportion in the target population estimated to have to be, 21.3% as it was indicated for the practise of EC Wollo University.

$$n= \frac{Z\ (\alpha/2)^2 P\ (1-P)}{d^2} = \frac{(1.96)^2(0.213)\ (1-\ 0.213)}{(0.05)2} = 258$$

For objective two. Factors associated with use of emergency contraceptive. Sample size was calculated using EPI-Info version 7 statistical software program for two-population proportions formula. To determine the sample size the following assumption was made:

P_1= Females who live in urban more use EC than rural, 68.1% in Debre-Markos University, North West Ethiopia (Marta T & Hinsermu B, 2013)(table 1).

P_2= Females whose age 20 and above have good practice of EC, 57.9% in Adama, Ethiopia (Aman J, 2016).

Table 1: Sample size determination for associated factors

S.no	Associated factors	Exposed	Unexposed	Sample	Reference
1	Residence	68.1%	31.9%	70	Marta T & Hinsermu B, 2013
2	Age	57.9	42.1%	338	Aman J, 2016

Comparing the three samples, the largest were being 338 and this can be the sample size. By taking the design effect of 1.5 and adding 10 % for non-response rate, the final sample size was 558. Before determine the practice of EC first considered sexually active female students in the Dire Dawa University. The prevalence of sexually active students in Dire Dawa University p= 35.8% (Abtew, B.M. 2009). To get 558 EC users among 35.8% sexually active students (100 *558/ 35.8) = 1559 questioner were distributed.

3.6. Sampling Procedures

A two-stage stratified random sampling was used to select the study subject; where first 22 departments were selected from the total 38 departments using lottery method, Then, the total sample size was allocated from the selected department proportional to the number of female students in the department. Secondly, participant students were selected from each department proportional to their year of study using simple random sampling technique. The lists of the entire female student in the selected departments were taken from the respective department. The lists of the sampled female students were used as sampling frame. The total number of regular undergraduate female's students who were registered for the academic calendar is 6302 of college's students. Finally, using simple random sampling for the first participant and using systematic random sampling every fourth student the data was collected who full fills the inclusion criteria. The figure below show that the schematic presentation of sampling procedure.

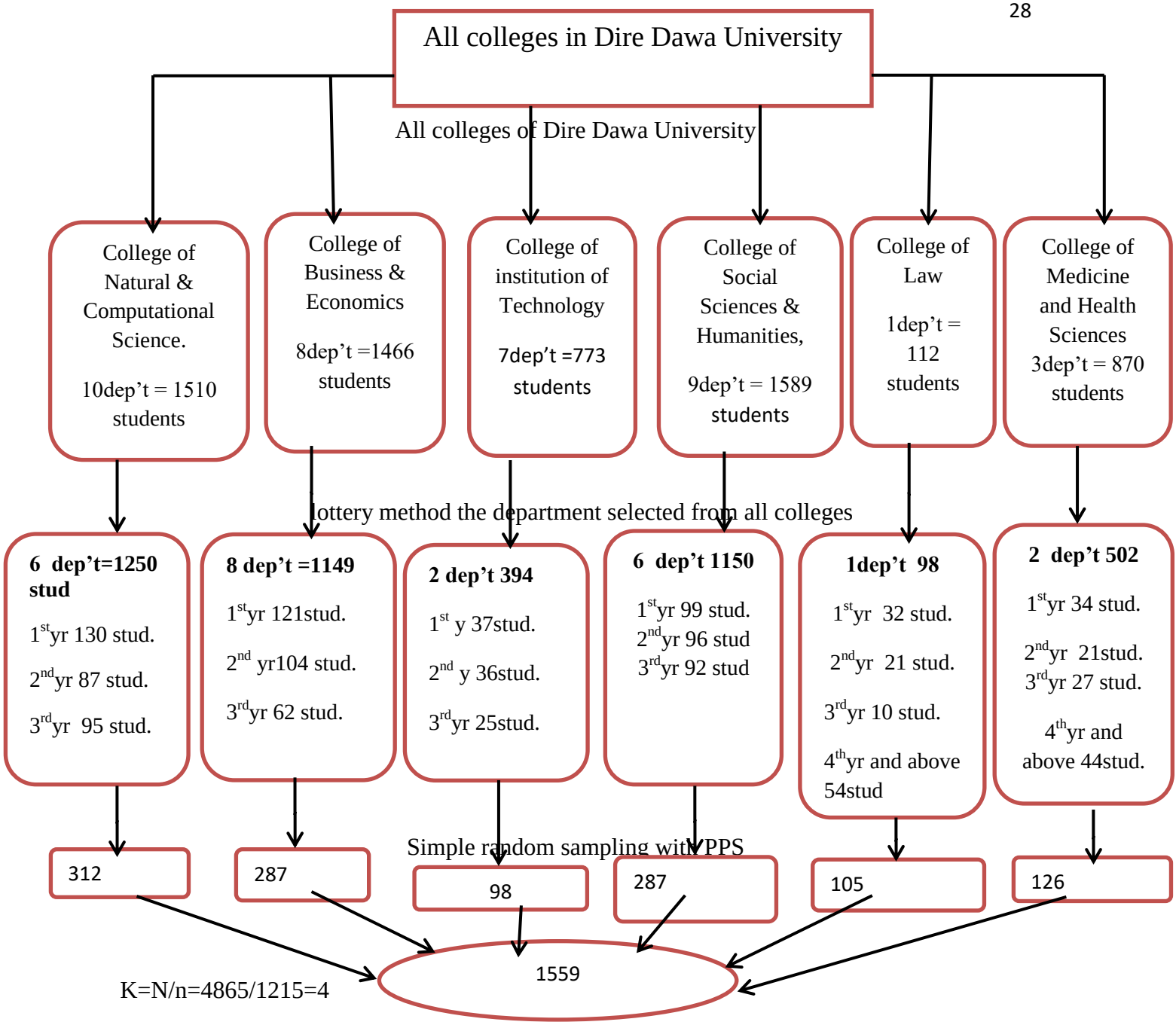

Figure 3. Schematic presentation of sampling procedure, in Dire Dawa University students from February to March, 2018.

3.7. Data Collection

The data was collected using a semi structured self-administered questionnaire adapted from previous similar studies.

3.7.1. Data collection tool

The researcher adopted questioners, from (Abebe K, 2009) and Alemayehu A and Teferi G, 2013). A structured questionnaire was used to collect data on the factors associated with

knowledge and practices of EC. The questionnaires were modified to address the objective of the study and also tailored to the level of understanding of participants. The data collection tool was pretested prior to the data collection.

3.7.2. Data collection procedures

Two supervisors of BSC Nurse and 5 twelve completed students will be recruited from the city. Training was given for one day by the principal investigator. Any doubts in the questionnaire were clarified. The pre-test were done in Haramaya University the week before data collection. Actual data collection was conducted from Feb, 20 to Mar, 30 2018.

3.8. Variables

3.8.1. Dependent Variable

Emergency Contraceptive utilization status.

3.8.2. Independent variables

Age, Age of first sex, Religion, Ethnicity, Region, Marital status, year of study, pocket money, exposure to RH education, Family monthly income, knowledge about EC, Parents' educational status , parent adolescent discussion on RH issue, knowledge aptitude and practice of contraceptive methods and exposer to unprotect sex and its consequences could be associated with practices of EC.

3.9. Operational Definition

Emergency contraception: A kind of contraception indicated after unprotected sexual intercourse to prevent unintended pregnancy (Arinze, O et al, 2010).

Sexually active: having a previous history of vaginal sexual intercourse (Mulu, T et al, 2014)

Unintended pregnancy: pregnancy occurred without plan (Debebe, W and Solomon S, 2015).

Knowledge- is awareness of the presence of the methods, the ability to identify when to take EC after unprotected sex, the most effective time to take EC after unprotected sex and effectiveness of ECs to prevent unintended pregnancy. The knowledge section of the tool consists of four items with response options of "No" = 0, and "Yes" = 1. To compute

knowledge score, we recoded the responses of knowledge variable into 0 and 1. Out of five points, respondents who score the mean(7.3) and above were labeled having "good knowledge" whereas the rest were labeled as "do not have good knowledge" about EC.

Attitude – is opinions, out looks, values, position and intentions of the study subjects towards the utilization of EC methods. After reversing items, which are negatively stated statements, we computed the attitude score. The score was then recoded into another categorical variable using the mean score. Accordingly, for attitude, out of nine points, those students who score the mean (14.3) and above were labeled as having "positive attitude" and the rest were labeled as having a "negative attitude" towards EC.

Utilization: ever use of EC on the basis of their knowledge when the study subjects are exposed to unprotected sexual intercourse to prevent unintededed pregnancy (Abebe K and Alemayehu Mekonnen. 2009).

3.10. Data Quality Control

There are points at which the quality of data may be affected unless measures are taken at these points. These points are questionnaire designing, data collection, data entry. As this is one of the points to control the quality of data, due emphasis were given to questionnaire designing. Objective based, logically sequenced, free of scientific terms and non-leading structured questionnaire was prepared. Pre-test was undertaken on the questionnaire before the actual data collection starts and amendment will be made on the questionnaire if necessary.

Data collection and supervision is another area of focus to keep the quality of the data. The data collectors and supervisors were provided training on the objective of the study, contents of the questionnaires and how to maintain confidentiality and privacy of the study subjects. The collected data were checked by investigator on daily basis for any incompleteness and/or consistency. Finally, timely corrections of the completeness of the questionnaire were made.

3.11. Data Analysis and Presentation

The collected data were checked for completeness and consistencies before it is entered to a computer and then it was coded. Double data entry was used to check the quality of data. First

the data were entered in to EPI-data version of 3.1 software and then data were exported to Statistical Package for Social Sciences (SPSS) version 22 for further analysis. Bivariate analysis was carried out to identify variables that are significantly associated with practices. Those variables in bivariate analysis that p value< 0.25 candidate for multiple variable analysis and to check multi corrinearity, variance inflation factors (<10) before proceeding to multivariate analysis. Lastly Model fitness will be checked using Hosmer-lemshow test (>0.05) with the multivariate analysis adjusted odd ratio with 95% confidence level was used to determine associated factors with practices. In multivariate analysis statistical significant variables are those which were have p-value <0.05. Finally the results were presented in the form of frequency, tables, percentage and graphs and possible recommendations were made.

3.12. Ethical consideration

Ethical clearance and approval to conduct the research was obtained Institutional Health Research Ethics Review Committee (IHRERC), college of health and medical science Haramaya University. Then formal letter that explains the Objectives, Rationale and expected outcomes of the study were written to Dire Dawa University to request the Permission to conduct the study. Prior to administering the questionnaires purposes and the importance of the study was explained and informed consent was obtained from each participant. Participant's involvement in the study was on voluntary basis; participants who are unwilling to participate in the study & those who wish to quit their participation at any stage were informed to do so without any restriction. Moreover, Confidentiality of the information was assured through using anonymous questionnaire and the data were keeping in secured place.

3.13. Information dissemination

First, the study was presented to the community of Haramaya University on open defense of public health researches and defended. Then the finding of the study was submitted to Haramaya University, Dire Dawa University and NGOs working on family planning.

3.14. Limitation of the study

The study had certain limitation a social desirability bias and recall bias by participants. Some participants were under report with miss understanding of the objective of the study.

4. RESULT AND DISCUSIONS

4.1. Results

4.1.1. Socio-Demographic characteristics of Respondents

A total of 1521 students completed the questionnaire making a response rate of 1559(97. 6%). Age of study participants ranged from 17-27 years with mean of 21 ± 2.4 years. More than half 803/1521 (52.8%) of the respondents age were belong to 20 and above year. About three fourth 1114 (73.2%) of the study participants came from the rural area of the country. All most half 743/1521(48.8%) of the respondents were followers of the Orthodox Christianity. More than three fourth of 1364/1521 (89.7%) of the respondents were single (Table 2).

Table 2: Socio- economic and demographic characteristics of the study group in Dire Dawa University students, Eastern Ethiopia, from February to March, 2018.

Characteristics	Frequency	Percent (%) n=1521
Age of the respondents (in years)		
<18	251	16.5
18-20	467	30.7
20 and above	803	52.8
Residence		
Rural	1114	73.2
Urban	407	26. 8
Religion		
Orthodox	743	48.8
Muslim	418	27.5
Protestant	181	11.9
Catholic	179	11.8
Ethnicity		
Amhara	607	39.9
Oromo	310	20.4
Somali	399	26.2
Tigrian	205	13.5

Marital status		
Single	1364	89.7
Married	152	10
Divorced	05	0.3
Years of study		
1st year	591	38.9
2nd year	403	26.5
3rd year	306	21.1
4th year and above	221	14.5
College		
College of natural science	339	22.3
College of social science	331	21.8
Institution of technology	275	18.1
College of bussince and economics	231	15.2
College of low	205	13.5
College of medicinal science	140	9.2
Dormitory status		
In campus	1051	69.1
Outside campus	470	30.9
Café status		
Café	794	52.2
Non café	727	47.8
Pocket money		
<150	60	3.9
150-499	289	19.0
500- 1000	1053	69.2
>1000	119	7.8

4.1.2. The respondent's family background and experience for RH issue discussion

Slightly less than half 699/1521 (45.9%) of the respondents father education status secondary education and above. About one third 445/1521(29.7%) of the respondents mother education status primary education. More than half 898/1521(59%) of the participants were discuses RH issue with different person. About one third 471/1521(31%) of the participants discuss RH issue with their parents (table 3).

Table 3: The respondent's family educational background and monthly income and experience of RH issue discussion. Among Dire Dawa university students, Eastern Ethiopia, from February to March, 2018

Characteristics	Frequency	Percent (%) n=1521
Paternal educational status		
No formal education	183	12.0
Only reading and writing'	187	12.3
Primary education	452	29.7
Secondary education and above	699	45.9
Maternal educational status		
No formal education	274	18.0
Only reading and writing'	188	12.4
Primary education	445	29.3
Secondary education and above	614	17.2
parents monthly income		
<2000	681	44.8
2001-3999	269	17.7
4000-5999	305	20.1
6000-7999	109	7.2
8000-9999	12	0.8
>10000	145	9.5
RH issue discussion (n=1521)		
yes	898	59.0
no	623	41.0

RH issue discussion with		
Parents		
Yes	471	31.0
No	1050	69.0
sisters/brothers		
Yes	172	11.3
No	1349	88.7
Friends		
Yes	471	31.0
No	1050	69.0
Health worker		
Yes	255	16.8
No	1266	83.2
Teacher		
Yes	153	10.1
No	1368	89.9

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4.1.3. Contraceptive Knowledge, use and Sexual behavior.

More than three forth 1489/1521(97.9 %) of the respondents heard about contraceptives. About one third 444/1521(29.2%) of the respondents were used the method. Slightly less than half 672/1521(44.2%) of the study participants ever had sexually intercourse in their life time, among these more than half 390/672 (58.0%) of the study participants had sexual intercourse in the past 12 months. The media age of sexual initiation was 19 years. Among sexually active 90/672 (13.4%) of students ever been pregnant and nearly three fourth 63(70%) of the pregnancy were end up with abortion (table 4).

Table 4: Contraceptive knowledge, use and Sexual behavior. Among Dire Dawa university students, Eastern Ethiopia, from February to March, 2018.

Characteristics	Frequency	Percent
Heard about contraceptives(n= 1521)		
Yes	1489	97.9
No	32	2.1
Ever used contraceptives(n=1521)		
Yes	444	29.2
No	1077	70.8
Ever had sex in your life time(n= 1521)		
Yes	672	44.2
No	849	55.8
Age of first sex(n= 672)		
14-20 year	565	80.08
>20 year	107	15.92
Sex without condom(n= 672)		
Yes	276	41.08
No	396	58.92
Ever been pregnant(n= 672)		
Yes	90	13.39
No	582	86.61
Outcome of pregnancy(n= 90)		
Child birth	27	30.0
Abortion	63	70.0
Where undergoing abortion(n= 63)		
hospital/clinic	35	55.56
local performer	28	44.44

4.1.4. Sources of information about EC

Among sexually active students, more than three fourth 586/672(87.2%) of the participants were heard about EC. The most common sources of information were internet 473(70.4), health workers 374(55.7%), peers/ friends 188(28.0%), mass media 128(19%), peers/friends 85(25.6%), schools club 74(11%), parent 51(7.6%) and Religious leader 25(3.7%) while 86(12.8%) of the respondents had never received EC information (Figure 4).

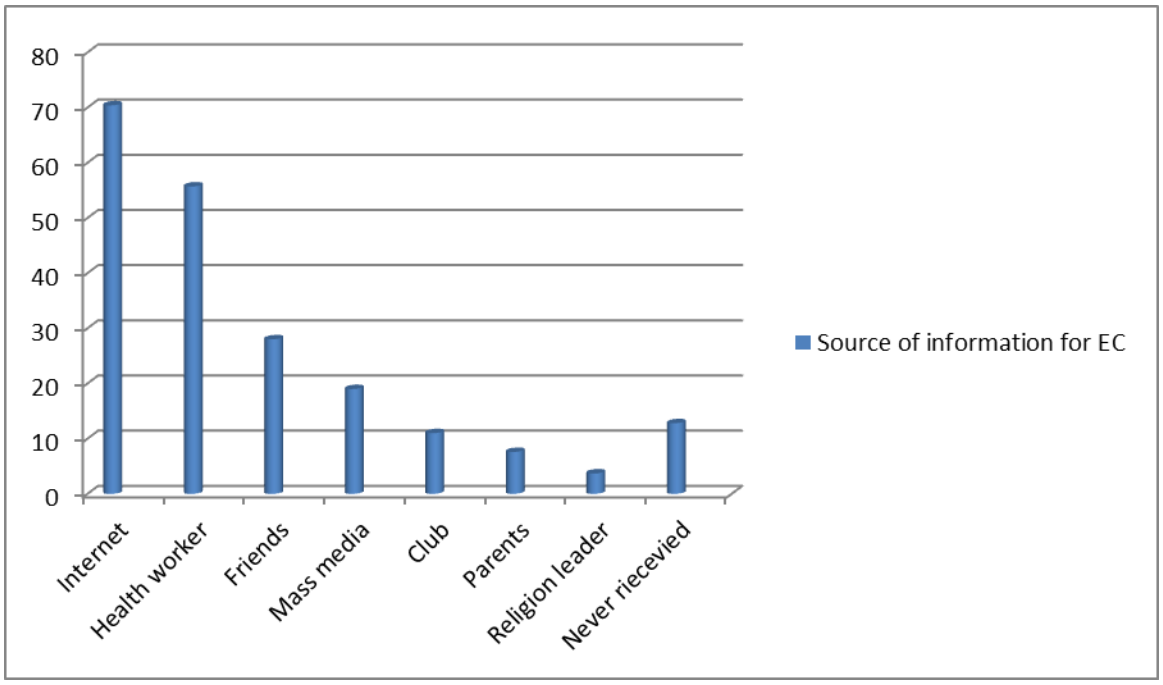

Figure 4. Source of information about EC among Dire Dawa University students, Eastern Ethiopia, from February to March, 2018.

4.1.5. EC use

About one-third of sexually active students 216/672 (32.1%) ever used EC in their life time among this 190(28.27%) students were used EC within the past 12 months. More than three fourth 586/672(87.2%) of the respondents heard about EC. Half 346/672(51.5%) of the respondents knew the effective time to take EC after unprotected sex. Two- third 290(43.2%) the respondent's had good knowledge about EC. More than two –thirds 314/672(46.7%) of students who knew about EC believed that they would use EC after unprotected sexual intercourse and half 332/672(49.4%) of them agreed to advice friends or relatives to take EC after unprotected sexual intercourse. Two- third 291(43.3%) the respondent's had positive attitude (table 5).

Table 5: Participant's knowledge and attitude about EC. Among Dire Dawa university students, Eastern Ethiopia, from February to March, 2018.

Characteristics	Frequency	Percent (N= 672)
Heard about EC		
Yes	586	87.2
No	86	12.8
The effective time to take EC		
Immediately after sex	56	8.3
Within 24 hours after sex	135	20.1
Within 72 hours after sex	155	23.1
Within 4-6 days after sex	326	48.5
Effectiveness of EC		
Highly effective(>90%)	87	12.9
Three- fourth(75%)	135	20.1
Half (50%)	137	20.4
Below one third (30%)	49	7.3
Uncertain	33	4.9
Not sure	231	34.4
Knowledge summary index		
Poor knowledge	382	56.8
Good knowledge	290	43.2
Willingness to use EC		
Yes	314	46.7
No	358	53.3
Recommendation to other		
Yes	332	49.4
No	340	50.6
Attitude summary index about EC(1521)		
Negative attitude	381	56.7
Positive attitude	291	43.3

4.1.6. Factors associated with EC use

Bivariate logistic regression analyses reviled that those female students whose belongs to age group of 20 and above years were 50% less likely use EC than to those respondents whose age belong to 18 and less years [COR = 0.5, 95%CI (0.3, 0.7]. And also those female students whose ethnicity belong to Somali were 4.7 times more likely use ECs than to those respondents whose ethnicity belong to Oromo [COR = 4.7, 95%CI (2.5, 8.8)]. And also those female students whose ethnicity belong to Amara were 3.3 times more likely practices ECs than to those respondents whose ethnicity belong to Oromo [COR = 3.3, 95%CI (1.8, 6.0)]. And also those female students whose ethnicity belong to Tigria were 2.6 times more likely use ECs than to those respondents whose ethnicity belong to Oromo [COR = 2.6, 95%CI (1.5, 4.6)]. Year of study also show significant associations with use of EC those 3rd and 2nd year female students were 70% less likely use EC than to those 1st year female students [AOR = 0.3, 95%CI (0.2, 0.5)] and [AOR = 0.3, 95%CI (0.2, 0.4)] respectively (table 6).

Table 6: Bivariate logistic regression analysis of Socio-economic and demographic characteristics of the study groups. Among Dire Dawa university students, Eastern Ethiopia, from February to March, 2018.

	Ever use of ECs			
Variables	**Yes**	**No**	**COR(95%CI)**	**P value**
	N (%)	**N (%)**		
Age of students				
< 18	10(27.8%	26(72.2%)	1.00	
18-20	47(21.7%)	170(78.3%)	0.6(0.3, 1.3)	0.20
20 and above	159(37.9%)	260(62.1%)	**0.5(0.3, 0.7)**	0.000
Residence				
Urban	120(30.2%)	278(69.8%)	0.8(0.6, 1.1)	0.20
Rural	96(35.0%)	178(65.0%)	1.00	
Religion				
Orthodox	107(29.1%)	261(70.9%)	1.00	
Muslim	41 (33.1%)	83(66.9%)	0.8(0.5, 1.2)	0.30
Catholic	36(40.9%)	52(59.1%)	0.9(0.5, 1.6)	0.80
Protestant	32(34.8%)	60(65.2%)	1.3(0.7, 2.4)	0.40

Ethnicity				
Oromo	56(36.8%)	96(63.2%)	1.00	
Amhara	96(31.6%)	208(68.4%)	**3.3(1.8, 6.0)**	0.000
Tigria	47(45.2%)	57(54.8%)	**2.6(1.5, 4.6)**	0.001
Somali	17(15.2%)	95(84.8%)	**4.7(2.5, 8.8)**	0.000
Marital status				
Single	156(30.3%)	359(69.7%)	1.00	
Married	58(38.2%)	94(61.8%)	0.7(0.1, 3.9)	0.6
Divorced	2(40.0%)	3(60.0%)	0.9(0.2, 5.7)	0.9
Year of study				
1st year	25(19.7%)	102(80.3%)	1.00	
2nd year	40(21.5%)	146(78.5%)	**0.3(0.2, 0.4)**	0.000
3rd year	79(37.4%)	132(62.6%)	**0.3(0.2, 0.5)**	0.000
4th year and above	72(48.6%)	76(51.4%)	0.6(0.4, 1.0)	0.04
College				
College of natural science	49(33.1%)	99(66.9%)	1.00	
College of low	19(22.6%)	65(77.4%)	**0.5(0.3, 0.9)**	0.01
College of medical science	16(26.7%)	44(73.3%)	**0.3(0.2, 0.6)**	0.000
College of bussience and Economics	24(23.5%)	78(76.5%)	**0.4(0.2, 0.8)**	0.01
College of social science	47(30.9%)	105(69.1%)	**0.3(0.2, 0.6)**	0.000
Institution of technology	61(48.4%)	65(51.6%)	**0.5(0.3, 0.8)**	0.003
pocket money cut				
<150	5(29.4%)	12(70.6%)	1.00	
150-499	18(15.4%)	99(84.6%)	0.96(0.3, 3.2)	0.95
500- 1000	177(36.5%)	308(63.5%)	0.4(0.2, 0.9)	0.30
>1000	16(30.2%)	37(69.8%)	1.3(0.7, 2.5)	0.4

The respondent's family educational background and monthly income and experience to RH issue discussion also determine the use of EC. Those female students whose mother secondary education and above were 1.6 times more likely use ECs than to those female

students whose mother no formal education [COR = 1.6, 95%CI (1.1, 2.3)]. And also those female students whose parent monthly income 8000- 9999 were 3.4 times, 6000- 7999 were 2.3 times and 4000-5999 were 2.6times more likely use EC than those female students whose parent monthly income less than 2000 [COR= 3.4, 95%CI (1.4, 8.1)], [COR = 2.3, 95%CI (1.1, 4.9)] and [COR = 2.6, 95%CI (1.2, 5.7)] respectively(table 7).

Table 7: Bivariate logistic regression analysis of the respondent's family educational background and monthly income and experience to RH issue discussion. . Among Dire Dawa university students, Eastern Ethiopia, from February to March, 2018.

Ever use of ECs				
Variables	**Yes**	**No**	**COR(95%CI)**	**P value**
	N (%)	**N (%)**		
Paternal educational status				
No formal education	30(38.0%)	49(62.0%)	1.00	
Only reading and writing'	24(31.2%)	53(68.8%)	1.5(0.9, 2.6)	0.1
Primary education	71(36.0%)	126(64.0%)	1.1(0.7, 1.9)	0.6
Secondary education and above	91(28.5%)	228(71.5%)	1.4(0.96, 2.1)	0.1
Maternal educational status				
No formal education	29(23.8%)	93(76.2%)	1.00	
Only reading and writing'	27(33.8%)	53(66.2%)	0.75(0.5, 1.2)	0.3
Primary education	83(39.9%)	125(60.1%)	1.2(0.7, 2.1)	0.5
Secondary education and above	77(29.4%)	185(70.6%)	**1.6(1.1, 2.3)**	0.02
parent monthly income				
<2000	88(29.8%)	207(70.2%)	1.00	
2001-3999	46(37.4%)	77(62.6%)	1.9(0.9,3.9)	0.1
4000-5999	47(34.1%)	91(65.9%)	**2.6(1.2, 5.7)**	0.02
6000- 7999	24(43.6%)	31(56.4%)	**2.3(1.1, 4.9)**	0.04
8000- 9999	1(14.3%)	6(85.7%)	**3.4(1.4,8.1**)	0.01
>10000	10(18.5%)	44(81.5%)	0.7(0.1, 6.8)	0.8
Undergo discussion about RH issue				

Yes	130(33.0%)	264(67.0%)	1.1(0.8, 1.5)	0.6
No	86(30.9%)	192(69.1%)	1.00	
Undergo discussion about RH issue with parent				
yes	75(36.4%)	131(63.6%)	1.3(0.9,1.9)	0.12
No	141(30.3%)	325(69.7%)	1.00	

Sexual behavioral, knowledge about contraceptive and attitude toward EC also determine the use of EC. Those female students whose age of first sex 20 and above were 50% times more likely use ECs than to those female students age of first sex 18 and less [AOR = 0.5, 95%CI (0.4, 0.8)]. And also those female students had sex without condom were 2.3 times more likely use ECs than their counterparts [AOR = 2.3, 95%CI (1.6, 3.2)]. Those female students ever used contraceptives were 5.0 times more likely use ECs than those female students not ever used contraceptives[AOR = 5.0, 95%CI ((3.2, 7.7)]. And also those female students heard about EC were 49.3 times more likely use ECs than the counterparts [AOR = 49.3, 95%CI ((6.8, 356.3)]. And also those female students had good knowledge about EC were 70% times less likely use ECs than those female students had poor knowledge[AOR = 0.3, 95%CI (0.2, 0.4)] (table 8).

Table 8: Bivariate logistic regression analysis of the Participant's sexual behavioral, awareness and use of regular contraceptive, knowledge and attitude about EC. . Among Dire Dawa university students, Eastern Ethiopia, from February to March, 2018.

Ever use of ECs				
Variables	**Yes**	**No**	**COR(95%CI)**	**P value**
	N (%)	**N (%)**		
Age of first sex				
14-20 year	169(29.9%)	396(70.1%)	1.00	
>20	47(43.9%)	60(56.1%)	**0.5(0.4, 0.8)**	0.01
Sex without condom				
Yes	118(42.8%)	158(57.2%)	**2.27(1.6, 3.2)**	0.000

No	98(24.7%)	298(75.3%)	1.00	
Ever been pregnant				
Yes	45(50.0%)	45(50.0%)	**2.4(1.5,3.8)**	0.000
No	171(29.4%)	411(70.6%)	1.00	
Outcome of pregnancy				
Childbirth	9(33.3%)	18(66.7%)	1.00	
Abortion	36(57.1%)	27(42.9%)	0.4(0.1, 1.00)	0.04
Heard about contraceptives				
Yes	216(33.8%)	424(66.2%)	-	-
No	0(0.0%)	32(100.0%)	1.00	
Ever used contraceptives				
Yes	187(42.1%)	257(57.9%)	5.0(3.2, 7.7)	0.000
No	29(12.7%)	199(87.3%)	1.00	
Heard about EC				
Yes	215(36.7%)	371(63.3%)	**49.3(6.8,356.3)**	0.000
No	1(1.2%)	85(98.8%)	1.00	
Knowledge category				
Poor knowledge	82(21.5%)	300(78.5%)	1.00	
Good knowledge	134(46.2%)	156(53.8%)	**0.3(0.2, 0.4)**	0.000
willing to use EC				
Yes	139(44.3%)	175(55.7%)	**2.9(2.1, 4.1)**	0.000
No	77(21.5%)	281(78.5%)	1.00	
Attitude category				
Negative attitude	88(23.1%)	293(76.9%)	1.00	

Positive attitude	128(44.0%)	163(56.0%)	**0.4(0.3, 0.5)**	0.000

Those female students whose belongs to age group of 20 and above years were 40% less likely user of EC compared to those respondents whose age belong to 18 and less[AOR:0.6; 95% CI= (0.4, 0.9].Year of study also show significant associations with use of EC those 3rd and 2nd year female students were 60% less likely use EC than to those 1st year female students [AOR = 0.4, 95%CI =0.2, 0.7] and [AOR = 0.4, 95%CI = 0.2, 0.8] respectively. Respondents whose fathers educational status secondary school and above were 1.6 more likely use EC than the fathers who has no formal education[AOR: 1.6, 95% CI =1.0, 2.5].

The result also showed that respondents who had experience of other forms of contraceptive use were 3.5 times more likely to use EC than those who didn't use other forms of contraceptives [AOR: 3.5; 95% CI=2.2, 5.6]. Students who had history of pregnancy were 1.9 times more likely to use EC than those with no exposure of pregnancy [AOR: 1.2; 95% CI= 1.1, 3.0].According to this study, students who has awareness about EC 24.3 times more likely use EC than their counterparts[AOR=24.3; 95% CI= 3.3, 178.9].

Table 9: A bivariate and multivariate analysis of determinants of use of EC in Dire Dawa university students, Eastern Ethiopia, from February to March, 2018.

Variables	**Ever use of ECs**		**Odds ratio (95% CI)**	
	Yes	**No**	**COR(95% CI)**	**AOR(95% CI)**
	N (%)	**N (%)**		
Age of students				
< 18	10(27.8%	26(72.2%)	1.00	1.00
18-20	47(21.7%)	170(78.3%)	0.6(0.3, 1.3)	0.5(0.2, 1.1)
20 and above	159(37.9%)	260(62.1%)	0.5(0.3, 0.7)	**0 .6(0.4, 0.9)**
Residence				
Urban	120(30.2%)	278(69.8%)	0.8(0.6, 1.1)	1.1(0.7, 1.5)
Rural	96(35.0%)	178(65.0%)	1.00	1.00
Year of study				
1st year	25(19.7%)	102(80.3%)	1.00	1.00
2nd year	40(21.5%)	146(78.5%)	0.3(0.2, 0.5)	**0.4(0.2, 0.8)**

3rd year	79(37.4%)	132(62.6%)	0.3(0.2, 0.5)	**0.4 (0.2, 0.7)**
4th year and above	72(48.6%)	76(51.4%)	0.6(0.4, 1.0)	0.8(0.5,1.4)
Paternal educational status				
No formal education	30(38.0%)	49(62.0%)	1.00	1.00
Only reading and writing'	24(31.2%)	53(68.8%)	1.5(0.9, 2.6)	1.6(0.8,2.9)
Primary education	71(36.0%)	126(64.0%)	1.1(0.7, 1.9)	1.0(0.6, 2.0)
Secondary education & above	91(28.5%)	228(71.5%)	1.4(0.96, 2.1)	**1.6(1.0, 2.5)**
Undergo discussion about RH issue with parent				
yes	75(36.4%)	131(63.6%)	1.3(0.9,1.9)	1.0(0.7, 1.5)
No	141(30.3%)	325(69.7%)	1.00	1.00
Age of first sex				
14-20 year	169(29.9%)	396(70.1%)	1.00	1.00
>20	47(43.9%)	60(56.1%)	0.5(0.4, 0.8)	0.7(0.4, 1.2)
Ever been pregnant				
Yes	45(50.0%)	45(50.0%)	2.4(1.5,3.8)	**1.9(1.1, 3.0)**
No	171(29.4%)	411(70.6%)	1.00	1.00
Ever used contraceptives				
Yes	187(42.1%)	257(57.9%)	5.0(3.2, 7.7)	**3.5(2.2, 5.6)**
No	29(12.7%)	199(87.3%)	1.00	1.00
Heard about EC				
Yes	215(36.7%)	371(63.3%)	49.3(6.8,356.3)	**24.3(3.3, 178.9)**
No	1(1.2%)	85(98.8%)	1.00	1.00
Knowledge category				
Poor knowledge	82(21.5%)	300(78.5%)	1.00	1.00
Good knowledge	134(46.2%)	156(53.8%)	0.3(0.2, 0.4)	0.4(0.3, 1.6)
Attitude category				
Negative attitude	88(23.1%)	293(76.9%)	1.00	
Positive attitude	128(44.0%)	163(56.0%)	0.4(0.3, 0.5)	0.4(0.3, 1.7)

4.2. Discussion

The objective of this study to assess magnitude/ status of EC use and associated factors among Female Students in Dire Dawa University, Eastern Ethiopia. According to the study finding 672(44.2%) students were sexually active. Among sexually active 216(32.14%) students ever used EC in their life time. The finding is lower than studies conducted in Haramaya University and Nigeria 61.02% and 65% of study subjects reported that they had ever used EC respectively(Semira B and Mekonnen S, 2016, Abeshi S, 2017). The possible reason for low EC practice rate in this study could be lack of awareness of the place where it is available, lack of correct information, low promotion and availability of the methods in most health institutions. This finding is relatively higher as compared to the findings from Ambo Techniques College 12.5% (Jimma L, 2014).

In this study bivariate analysis, a significant difference was observed between predictors; Age, ethnicity, year of study, college, maternal educational status, parent monthly income, age of first sex, Sex without condom, ever been pregnant, heard about EC, Knowledge category, willing to use EC and attitude category. By using variables which have p-value<0.25 in bivariate analysis multiple variable analysis model was fitted with forward step wise procedure. After controlling the effect of other variables age of students, year of study, father educational status, ever use of contraceptive method, history of pregnancy and having awareness about EC were associated with use of EC.

In this study about 672(43.13%) of the subjects reported that they are already sexually active. This result is nearly similar to the study conducted on Benin University 43% (*Michael E. A and Adedapo B.A, 2003*) and high School, in Jimma Town 44.4% (Asmare T, 2015). This result also higher than similar study conducted on higher education students in Mizan-Tepi University 38.4% (Bisrat Z, et al, 2016) and Addis Ababa University and unity 19.5% (Wegene T and Fikre E, 2007). The results lower than the study conduct in KwaZulu-Natal, South Africa57.2%, (Muhammad E and Shanaz G, 2012).The media age of sexual initiation of the students was 19 years. Which is higher than the study done in Wachamo University, Ethiopia, the mean (standard deviation) age at first sex was 18.22 (SD = 1.69)(Tewodros G, 2015).

Those female students whose belongs to age group of 20 and above years were 40% less likely user of EC compared to those respondents whose age belong to 18 and less[AOR:0.6;

95% CI= (0.4, 0.9]. Such finding was also appreciated study conduct in Debre Markos Higher Institutions, Northwest Ethiopia (Habtamu A, 2014). The reason may be Younger girls may have less information about the availability and indication of EC due to the fact that difference in educational level and life experience. Or there is a possibility for female students engaging in more sexual relationship as their age increases and so interested to know about EC.

Year of study also show significant associations with use of EC those 3rd and 2nd year female students were 60% less likely use EC than to those 1st year female students [AOR = 0.4, 95%CI =0.2, 0.7] and [AOR = 0.4, 95%CI =0.2, 0.8] respectively. The result is consistent with similar studies conducted in Arba Minch University (Yohannes F, 2017) and Dire Dawa, Town, Ethiopia (Meskerem A, 2015). This association may be due to acquisition of knowledge in higher grades which help them to senior students have more exposure to sexual and reproductive issues education in Campus and difference in educational level.

Respondents whose fathers educational status secondary school and above were 1.6 more likely use EC than the fathers who has no formal education[AOR: 1.6, 95% CI =1.0, 2.5]. The reason may be the educated fathers may discuss sexual issues with their daughter more openly about matters related to health including EC in the house hold and economic difference could be the possible explanation for this difference. The result is consistent with similar study conducted in Debre-markos University (Marta T & Hinsermu B, 2015).

The result also showed that respondents who had experience of other forms of contraceptive use were 3.5 times more likely to use EC than those who didn't use other forms of contraceptives [AOR: 3.5; 95% CI=2.2, 5.6]. The reason may be they have exposure to RH issue discussion with health worker. Such finding was also appreciated different studies in Mizan-Tepi University, South West Ethiopia (Bisrat Z et al, 2016) and clients of Ethiopian immigration and nationality affair office in Addis Ababa (Gessessew B *et al*, 2014)

Students who had history of pregnancy were 1.9 times more likely to use EC than those with no exposure of pregnancy [AOR: 1.2; 95% CI= (1.1, 3.0]. The reason may be most of time they have exposure to RH issue discussion with health worker and also they devoted to read more about RH issues including EC. This finding is consistent with the study conducted in Mizan-Tepi University, South West Ethiopia (Bisrat Z et al, 2016).

According to this study, students who has awareness about EC 24.3 times more likely use EC than their counterparts[AOR=24.3; 95% CI: (3.3, 178.9)]. Students become exposed to information regarding EC, their knowledge become improved. As a result, they use EC if they face risk of unprotected sexual intercourse. Such finding was also appreciated from different studies in Puducherry, south India (klim,C.S, 2015) and Students of Debre Markos Higher Institutions, Northwest Ethiopia Habtamu A, 2014).

The result from this study revealed that only three-fourth586/672(87.2%) of the respondents had heard of the method. This is lower than the reports on university students in Debre Marko (96%) (Habtamu A et al, 2014) and Haramaya (95.38%) (Semira B and Mekonnen S, 2016) and also Debre Markos Higher Institutions, Northwest Ethiopia (Habtamu A et al, 2014). This could be due to difference in study setting, lack of any educational program and service promotion on EC and the media access and environmental difference. It is higher than comparable to reports from Addis Ababa University (84.2%) (Fatuma A et al, 2012), Swedish (83%) (Gunilla A, *et al*, 2002) and India (87%) (Neetu P, 2013).

The most common sources of information were internet 473(70.4%) and health workers 374(55.7%). which is differ from Jimma University, southwest Ethiopia, friends 60(36.5%) and radio 37(22.8%) (Nasir T, 2010) and Debre Markos Higher Institutions, Northwest Ethiopia health care provides (40.8%), from friends/relatives (21.6%) (Habtamu A et al, 2014).This could be due to the method they use for education of EC, the media access and difference in culture of discussion in the study participants and the environmental difference.

Majority of the respondents have heard about EC in this study. The efficacy of EC is dependent on how soon after the unprotected intercourse treatment is administered. If women are to benefit from EC, they need to have prior knowledge and easy access to the method since it has a time limit. Half 346/672(51.9%) of the respondents knew the acceptable time to administer ECPs after unprotected sex only 56/672(8.3%) respondents identified the most effective timing of administration of ECPs after unprotected sex. which is lower than reports from South Eastern Nigeria 54.3% (Lujain A and Almas H, 2014) and *Nepal* 63.4% said that as soon as possible of unprotected intercourse (Sara T, et al, 2015). The possible reason for the lack of detailed knowledge on this subject may be linked to the source of information; friends /peers that may not have a good grasp of the subject and time difference.

Among study participants; two- third 290/672(43.2%) of the study participants had good knowledge about EC. This finding is relatively lower as compared to the findings in Fasiledes Preparatory School; Gondar which revealed the majority of the study participants 69.4% of the respondents had good knowledge (Kibir T, 2017). The possible reason may be due to study setting and time variation, awareness difference, accessibility of RH promotion activities and youth friendly programs in the country and socio-demographic variation of study participants. It is relatively higher as compared to the findings in Wollo University students showing 36.5 %(Kibir T *et al*, 2017).

More than two –thirds 314/672(46.7%) of students who knew about EC believed that they would use EC after unprotected sexual intercourse and half 332/672(49.4%) of them agreed to advice friends or relatives to take EC after unprotected sexual intercourse (table 5). Two- third 291/672(43.3%) the respondent's had positive attitude. This indicates that almost one third of the study participants had negative attitudes towards EC; it is a point for the government and the stakeholder to deal to improve the attitude of the women towards emergency contraceptive. This finding is in line with study from Adama University (Dejene. T and Tsion A, 2010). However, it is lower than the study done in Fasiledes Preparatory School Gondar 71.1% (Ketema B et al, 2017), Haramaya University 76.5%(Berhanu Desta, 2011) and Malaysia University 88% (Fatemeh N, et al, 2012). The possible reason may be due to study setting, time variation, awareness difference, accessibility of RH promotion activities and youth friendly programs in the country and educational difference as higher education study participants have chance to get reliable information from different sources and academic course and/or socio-demographic variation of study participants.

Strength and Limitation of the study

The strength of this study was it adopted standard and pre-tested survey questionnaire and the sample was quite large and representative, and thus minimized sample bias. The limitation of the study was the study population consisted of students at one university, thus results may not be generalizable to other universities. Because of the sensitive nature of the study and self-reporting, information bias could be introduced. To minimize this bias, anonymity and confidentiality were maintained.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

College female students are expected to have high level of EC awareness and usage than most youth with no or less educational attainment. This study showed that the awareness of EC among regular undergraduate female students of Dire Dawa University is high but knowledge of the most preferred timeframe for the use of EC is low. Majority of the respondents have exposure to RH issue discussion with different body but little discussion with their parents. More over their attitude to use EC and to advice other to use were low. The study also reviled lower utilization of EC. There is strong association between age of students, year of study, father educational status, ever use of contraceptive method, history of pregnancy and having awareness about EC were associated with use of EC.

5.2. Recommendations

Since the students go to different universities & colleges in the country that they face new environment and till then in the community; preparing and equipping them with necessary Knowledge of sexual and reproductive health would help to disseminate information widely in the community in a sustainable way in addition to protecting themselves.

Based on finding of the study the following recommendation have been made

For MOH

- Strategies and programs should be specifically designed to provide appropriate information and access to EC in the country in general and in college institutions in particular to enhance attitude toward EC use recommended among adolescents.
- There should be promotion of EC to enhance their use and making them easily accessible in hospital, pharmacies and student clinic with.
- Family communication services should be promoted.

For academic institution

- The study result indicated that majority of the respondents have negative attitude towards ECs. Thus, the academic institutions and those organizations working on RH matters should work on the promotion and enhancement of health education or counseling among students of college institutions.

- Health education program should be set up to the university students to avail accurate information about EC.
- There is also a need for an intervention of aiming at adolescents' RH issues including EC, by using different Medias as the main means to broadcast appropriate information and Creating Reproductive Health Clubs in the college to address the target issues.
- To raise client's skills on SRH issues IEC materials like pamphlet, newspapers, posters…etc should be available in libraries and other accessible areas.

For Family Guidance Association of Ethiopia

- Use of EC among participants of this study is far less. Hence, there should be an intervention designed to expand service availability particularly at college level and advance provision of dedicated ECs for potential clients especially for college students.

For professionals/researchers

- This study shows that significant number of female students have incorrect knowledge about the administering time of EC. Therefore, health workers, the media, NGOs working in health sectors and other concerned bodies should participate and act cooperatively to create awareness about the usage of ECPs and its importance to reduce unwanted pregnancy of female university students.
- Similar other studies are recommended to generate more in-depth information on emergency contraceptives.

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7. ANNEX

7.1. Annex: consent for Heads of the facility

My name is _____. I am working on data collection with Meskerem Adugna who is studying for his 2nd degree from Haramaya University. I kindly request you lend me your attention to explain you about the study and being selected as the study.

Study title: Magnitude of emergency contraceptive use and Associated Factors Among Female Students in Dire Dawa University, Eastern Ethiopia in 2017/18.

Aim of the study. Magnitude of emergency contraceptive use and Associated Factors. Additionally its aim is for partial fulfillment of master by the researcher.

Data collection Procedure and duration: the principal investigator will be here to collect data on magnitude and factors associated with practices of EC among female students in Dire Dawa University, eastern Ethiopia. Therefore the participants are selected from each department proportional to their year of study using simple random sampling technique. Time will be taken around 25 minutes. In some case based on the situation and interests can arrange less or more time based on your interests. When further discussion is needed I may provide you for more information.

Risk and benefit of the study: there is minimized risk in this study. But taking only few minutes from your time. There would not be any direct payment for participating in this study but the information generate from the study will serve as baseline data for policy makers and education planners in developing appropriate evidence-based strategies and curricula in school/college to prevent unintended pregnancy and will have a great role for reducing the morbidity & mortality of Ethiopian women particularly the youth age group as a result of unsafe abortion.

Confidentiality: The information that you provide for us will not be disclosed. The questionnaires have no any information which will disclose the participant information

particularly .the finding this general and will not reflect any thing particular of individual personals.

Right of participant: The participants have the right to give or not give information. The participation is fully based on their voluntary**.** If they decide to participate, they have the right to withdraw from the study at any time and this will no label them for any loss of benefit which they otherwise are entitled.

Contact address: for any confusion concerning the study you can contact us by the following addres. Researcher name: ----------address;- Institutional Health Research Ethics Review Committee (IHRERC): Office phone: 025-466-20-11 or P.O.BOX: 235, Harar.

Declaration of informed voluntary consent; I have read the participant information sheet. I have clearly understood the purpose of research, the procedures, the benefit and risk, issues of confidentiality, the right of participating and contact address for queries. I have been given the opportunity to ask questions for things that may unclear .I was informed that the participants have the right to withdraw from study at any time and give or not give information. I am also informed that the university has the right to stop this study from being conducted in the university if any misdeeds and unethical procedures are observed during data collection process in universities premises. .

Name of facility head_____ Signature: _____.

Name and Signature of data collector: _____.

N.B: This is to be signed face to face in the presence of data collector and the copy is provided to the participant.

Please provide a copy of this signed consent to the participant.

Thank you for your cooperation

7.2. Annex II: Participant Information Sheet And Consent Form

Haramaya University, College of Health and Medical Sciences School of Graduate Studies Information Sheet And Consent Form to the assessment of magnitude and factors associated with practices of emergency contraceptive among undergraduate regular female students in Dire Dawa University.

Introduction:

Good day! My name is---------- I am working as data collector for the study being conducted in this institution by MeskeremAdugna (BSC in Pharmacy), who is studying for her master's degree at Haramaya University college of medicine and health sciences, school of graduate study. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

Study title:

Magnitude/status of emergency contraceptive use and Associated Factors Among Female Students in Dire Dawa University, Eastern Ethiopia, 2017/2018

Purpose:

The main aim of this study is to write a thesis as a partial requirement for the fulfillment of a master's degree in public health for the principal investigator. Moreover, the result of the study will be used as evidence and input to plan on students/adolescent reproductive health activities. Based on the findings from the study the institutions, DDU, governmental and non-governmental organizations working on students/adolescent reproductive health.

Procedure and duration:

I will be discussing you using a semi-structured questionnaire to provide me with pertinent data that is helpful for the study. The discussion will take about 20 minutes, so I kindly request you to spare me this time for the discussion.

Risks:

The risks of being participating in this study are minimal, but only taking few minutes from your time. Other than this, the interview will not cause any physical harm on you and the community.

Benefit:

There would not be any direct payment for participating in this study. However, the findings from this research may reveal important information for the local health planners.

Confidentiality:

The information that you provide us will be confidential. There will be no information that will identify you and your organization. The findings of the study will be general for the study population and will not reflect anything particular of individual persons or housing. The questioner will be coded to exclude showing names; no references will be made in oral or written reports that could link participants to the research.

Rights:

Participation in this study is voluntary. You have the right to declare for your organization to participate in this study. You may refuse to answer any question or choose to stop the discussion at any time. However, we hope you will answer the questions, which will benefit the services you provide and the nation.

Contact address:

If there are any questions or enquires any time about the study, please contact and speak to Principal investigator Meskerem Adugna. Phone number 09 13557150 and Institutional Research Ethics Review Committee (IERC) at office Phone number 025-466-20-11 P.O. Box 235, Harar.

Statement of Consent

I have read/was read to me this consent form or read for me the participant information. I have clearly understood the purpose of the research, the procedure, risks and benefits, issues of confidentiality rights of participating and contact address for any queries. I have given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent for to participate in this study with my initials (signature) as indicated below.

Participants of name and signature _____date_____/_____

Interviewer's name and signature _____ date _____/_____

7.3. Annex III. Questionnaire

***First of all I would like to say thank you for your cooperation*!**

Part-I Questions on Socio-Demographic Characteristics of respondents.		
Ser.No	Questions	Responses and codes
1	How old are you?	------Age in years
2	Where your last residence before you joined Dire Dawa University?	1-Urban 2-Rural
3	What is your religion?	1-Orthodox 2-Muslim 3-Catholic 4- Protestant Other, specify----------
4	What is your ethnicity?	1- Oromo 2- Amhara 3- Tigrian 4-Other, specify----------
5	Marital status?	1-Single 2- Married 3- Divorced Other specify-------
6	If the answer Q5 single Do you have boyfriend?	1-Yes 2- No
7	Do you have sister and brother	-Sister - **1- yes** **2- No** -Brother - **1- yes** **2- No**
8	If you have sister, brother or both your birth order(የስንተኛ ልጅ ነሽ?)	----------
9	What is your Year of study?	1-1st year 2- 2nd year 3- 3rd year 4- 4th and above years

10	What is your college?	----------
11	Where do you live now?	1-In campus 2-Outside campus
12	Where do you eat now?	1-Café 2- Non café
13	Do you get pocket money?	1-yes 2-No
14	How much pocket money you get in month?	----------
15	What is the educational status of your father?	1-Illitrate 2 only reading and writing 3-primary education 4-Secondary education 5-Higher education/college
16	What is the educational status of your mother?	1-Illitrate 2-only reading and writing 3-primary education 4-Secondary education 5-Higher education/college
17	What is the monthly income of Your parents?	----------

Section II. Sexual experience			
18	Have you had sexual intercourse in your life time?	1-Yes 2-No	If No, skip to Part III-Q28
19	At what age was you had the first sexual intercourse (sex)?	---------Age in years	
20	Have you had sexual intercourse with in the past 12 months?	1-Yes 2-No	
21	Have you had sex without condom?	1-yes 2-No	
22	What mechanism used to prevent pregnancy?	1-Pills **1-yes 2-No**	

		2-loop **1-yes** **2-No** 3- Injectable **1-yes** **2- No** 4-condom **1-yes** **2- No** 5-withedral **1-yes** **2-No** Others(specify)----------	
23	Have you ever been pregnant?	1-Yes 2- No	If No skip to 26
24	What was outcome of pregnancy?	1-Childbirth 2-Abortion	
25	If the answer of Q18 abortion. Where you were undergoing abortion?	1-Hospital/Clinic 2-Local performer -Other(specify)---------	
26	Do you know undergo discussion about contraceptive and other reproductive issue?	1-yes 2-No	If no skip to 28
27	With whom you undergo discussion about contraceptive and other reproductive issue?	- Friends **1- Yes** **2- NO** - Parent **1- Yes** **2- NO** - sister/brother **1- Yes** **2- No** - Teacher **1- Yes** **2- No** - Health worker **1- Yes** **2- NO**	
III. Knowledge of contraceptives including emergency contraception			
28	Have you heard about contraceptives?	1-Yes 2-No	
29	What contraceptives you heard? (multiple answers possible)	1-Pills **1-yes** **2-No** 2-loop **1-yes** **2-No** 3- Injectable **1-yes** **2- No** 4-condom **1-yes** **2- No** 5-withedral **1-yes** **2-No** Others(specify)----------	
30	Have you ever used contraceptives?	1-yes 2-No	

31	If yes to Q 25 What contraceptives you used? (Multiple responses possible)	1-Pills **1-yes** **2-No** 2-loop **1-yes** **2-No** 3- Injectable **1-yes** **2- No** 4-condom **1-yes** **2- No** 5-withedral **1-yes** **2-No** Others(specify)----------	
32	Have you ever heard about emergency contraceptives (**EC**)?	1-yes 2- No	
33	If yes for Q 29, From where you got the information about EC? (multiple answers possible)	1-From health Workers 2-from friends/Peers discussion 3-from clubs in Schools 4-from religious Leader 5-from parents 6- from internet 7-from mass media(TV, Radio) -others(specify) --------	
34	When to take EC after sex without condom/unprotected?	1-Immediately after sex 2 -Within 24 hours after sex 3 -Within 72 hours after sex 4-Within 4-6 days after sex -Other, specify	
35	The most preferred or effective time to take EC?	1-Immediately after sex 2 -Within 24 hours after sex 3 -Within 72 hours after sex 4-Within 4-6 days after sex -Other, specify----------	
36	How effective are EC pills in preventing pregnancy?	1-Highly effective (99%) 2-Three- fourth (75%) 3-Half (50%) 4--Below one-third (30%) 5-Uncertain	

		6-Not sure				
37	Do you think all females have the right to access EC?	1-Yes 2-No				
38	Do you think EC use may cause infertility in a woman?	1-Yes 2-No				
39	Do you think all females can use EC?	1-Yes 2-No				
IV	**Attitude about emergency contraceptives**					
40	Are you willing to use EC if You face unwanted pregnancy?			1-Yes 2-No		
41	Do you recommend EC for other females or friends?			1-Yes 2-No		
	Attitude Assessment Items (please tik on your answer)	**Strongly agree**	**Agree**	**Disagree**	**Strongly disagree**	**Not sure**
42	Do you think provision of ECs after an episode of sex without condom (unplanned sex) can prevent unwanted pregnancy?					
43	Do you think EC promotes promiscuity ()?					
44	Do you believe EC may hurt (offended) the baby in case it does not work?					
45	Do you believe EC is one way of abortion?					
46	Do you believe to use EC is sinful act (bad)?					
47	EC will affect ongoing regular methods of contraception negatively?					
48	Do you intend to use EC method to avoid unwanted pregnancy in the future?					
49	Do you believe availability of EC decrease the use of condom?					
50	Do you believe awareness of ECP decrease the use of other contraceptives?					
V **Practices of emergency contraception**						

51	Have you ever used EC methods to prevent pregnancy in your life time?	1-yes 2- No	
52	Have you used EC methods to prevent pregnancy within the past 12 months?	1-yes 2-No	
53	What was the reason that you were not able to protect yourself from the sex you said you used an EC?	1-Condom slippage 2-Forced sex 3- Not used any contraceptive 4-Forgot to take my regular contraceptive -Others, Specify----------	
54	Did the EC protect you from becoming pregnant?	1. Yes 2. NO	
55	Who recommend you to use EC? (multiple answers possible)	1-A friend 2-Partner/boyfriend 3- Healthcare provider 4-Internet webpage 5- Parents Other, specify----------	
56	Have you ever used ECPs more than once?	1. Yes 2. NO	
57	If Yes, How many times do you use it ever? ----------		