ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

EMERGENCY CONTRACEPTIVE: POST- SECONDARY SCHOOL FEMALE STUDENTS' AND SERVICE PROVIDERS' PERSPECTIVE

(THE CASE OF AWASSA TOWN)

BY

WONDIMU BEKELE AYANA

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WONDIMU BEKELE

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Emergency Contraception: Post-Secondary School Female Students and Service Providers' Perspective (The Case of Awassa Town)

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ACRONYMS AND ABBREVIATIONS

AAU = Addis Ababa University

ABUC = Africa Beza University College (Awassa Campus)

ACTE = Awassa College of Teacher Education

AIDS = Acquired Immuno Deficiency Syndrome

CSA = Central Statistics Agency

EC = Emergency Contraception

ECPs = Emergency Contraceptive Pills

ECs = Emergency contraceptives

EDHS = Ethiopian Demographic and Health Survey

ESOG = Ethiopian Society of Obstetric Gynecologists

FDRE = Federal Democratic Republic of Ethiopia

FGAE = Family Guidance Association of Ethiopia

FGD = Focus Group Discussion

FP = Family Planning

HIV = Human Immuno Virus

KAP = Knowledge, Attitude and Practice

ICEC = International Consortium for Emergency Contraception

ICPD = International Conference of Population and Development

IPS = Institute of Population Studies

IWHC = International Women's Health Coalition

IUD = Intra Uterine Device

MCH = Maternal and Child Health

NGOs = Non – Governmental Organizations

OR = Odds Ratio

PRB = Population Reference Bureau

RH= Reproductive Health

SD = Standard Deviation

SNNPR = Southern Nations Nationalities and Peoples' Region

SPSS = Statistical Package for Social Sciences

STIs = Sexually Transmitted Infections

UN = United Nations

UNFPA = United Nations Population Fund

WHO = World Health Organization

ABSTRACT

Since most of the regular methods used before or during sexual intercourse, emergency contraceptives are the only method that can be used within short time after sexual intercourse, offering a second chance to prevent unwanted pregnancy. Therefore, its introduction was a welcome addition for the campaign against unwanted pregnancy and unsafe abortion.

The ultimate objective of the study is to assess the attitude of female and male post-secondary students and service providers towards emergency contraception in Awassa town.

A cross-sectional both quantitative and qualitative survey was conducted on March 2008 among students of Awassa College of Teacher Education and Africa Beza University College Awassa campus; which were randomly selected from non-health science colleges in the town. A survey was conducted through a structured questionnaire among 596 female students of both colleges that were selected proportional to the size of number of female students in the colleges, departments/streams and year of study (batch). Sixteen female and sixteen male students from each college were participants of the four FGDs held on the same time and key informants interview was carried out among seven health care providers working in the selected MCH/FP service outlets in the town.

Out of the total 596 female college students 229(38.4%) of them ever had sexual intercourse with mean age 18.24 at their first intercourse and 83.7% had ever used one of the modern contraceptive methods. Out of 212 (35.6%) of the whole respondents who had ever heard about EC, 60.8% knew at least one correct method of EC while only 31.6% correctly identified 72 hours as the time limit for the method use. The summary index for knowledge about EC disclosed that only 17.0% had good knowledge of EC whereas 65.6% had favorable attitude towards EC. The FGDs among male students revealed that male students also lack a specific knowledge of EC. The key informants' interview among health care providers also ascertained lack of adequate knowledge and experience on EC regimens.

There is lack of adequate knowledge of EC among both female and male students and the service providers. Therefore, there is a need to address College students by expanding information and education about EC methods and to build providers capacity through trainings.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Changes in the total fertility rate - lifetime births per woman - have dramatic effects on population size and are, therefore, the focus of many research, analysis and debate among demographers. The complex and unpredictable nature of fertility rates makes this debate far from academic: National and international health, economic, and other policies and programs may be based on expected changes in population size (Population Reference Bureau, 2005a).

The United Nations population projection often considered to be the most likely (the "medium" projection) assumes that fertility in developing countries will drop to an average of 2.1 children per woman by 2050 and eventually to 1.85 (UN, 2003) - on the basis of the ICPD program of Action, which says that it is the right of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice under the comprehensive reproductive health care and reproductive rights (UN, 2004). As with any projection such assumptions may prove correct for some countries but not for others (PRB, 2005a).

In recent decades the practice of contraception has changed dramatically in most regions of the world. The proportion of couples using contraceptives has increased steadily, and the mix of methods is now dominated by modern methods that have become available since the 1960s. Despite this increase, still the use of family planning varies widely between countries and with in countries from less than 10 percent of women of reproductive age in some sub -Saharan countries like Mali to more than 75 percent in many developed countries including Mexico and Thailand. With in countries, similar disparities can be seen between the poorest and richest citizens (PRB, 2004 and Bongaarts, and Westoff, 2000).

More than 100 million women in developing countries, or about 17 present of all married women would prefer to avoid a pregnancy but are not using any form of family planning. Demographers refer to these women as having an "Unmet need" for family planning. In some countries, however, particularly in sub-Saharan Africa, unmet need remains persistently high (more than one-fifth of married women) (PRB, 2004).

Ethiopia is one of the sub-Saharan African countries expected to be the worlds 10th largest country in population by 2050 (PRB, 2005a). According to EDHS 2005 current contraceptive prevalence of the country is around 15 percent among married women which shows an increase by 7 percent compared with the 2000 EDHS report (CSA and ORC Macro, 2001 and 2006).

As shown in the EDHS 2000 the unmet need for family planning either to space or limit pregnancy is 36 percent, which is huge compared with other counties (CSA and ORC Macro, 2001).

According to the Population Council demographer John Bongaarts due to high unmet need for contraception, low level of contraceptive use and contraceptive failure unintended pregnancies and abortion remain high in developing nations (Bongaarts, and Westoff, 2000). As a result unsafe abortion is a major problem contributing significantly to the high number of maternal deaths and morbidity (Muia et al, 2000& IWHC, 2007).

About 210 million pregnancies occur in the world annually; of this total, about 79 million are estimably to be unintended - either mistimed or never wanted. Of these unintended pregnancies an estimated 40-50 million end in abortion, 20 million of which are considered unsafe. 95 percent of all these unsafe abortion take place in developing countries. Of the estimated 600,000 annual - pregnancy –related maternal deaths world wide on average, 13 percent of all deaths are due to unsafe abortion, in some countries this number is as high as 60 percent. Every year, over 70,000 women die and millions more suffer injuries as a result of unsafe abortion. Mortality due to abortion is highest in Africa, 680 deaths per 100,000 procedures (Ipas, 2007; Bongaarts and Westoff, 2000; VanRoyen et al, 2000; IWHC, 2007, and AGI, 1999).

Adolescent women face a high risk of unintended pregnancies and unsafe abortion, with devastating consequences for their lives and health (Ipas, 2007). Ethiopia is one of the countries with the highest maternal mortality rate (673/100,000 live births) (CSA and ORC Macro, 2006). Also according to the EDHS 2000, in Ethiopia about 25,000 women die every year due to pregnancy and child birth complications, and abortion is estimated to account for about 32 percent of maternal deaths (CSA and ORC Macro, 2001 & ESOG, 2002).

As affirmed at the 1994 International Conference of Population and Development in Cairo, women have the right to control the number and timing of their pregnancies. To realize this right women through out the world need access to a broad range of contraceptives as well as to safe

abortion services. While most contraceptives are intended for use before or during intercourse, some methods can be used with in a short time after unprotected intercourse. Prevention of unwanted pregnancies must always be given the highest priority and all attempts should be made to eliminate the need for abortion (Ipas, 2007; UNFPA, 1995 and Ellertson, 1996).

Elimination of legal and regulatory barriers to the provision of contraception, including emergency contraception is an important policy measure. Introduction and promotion of emergency contraception in the country would greatly reduce the rate of unwanted pregnancy and thereby decrease the high rate of maternal deaths associated with unsafe abortion. Emergency contraception should be available at all levels of the health care system and, where possible (Ipas, 2005 & ESOG, 2000). Experts agree that widening the menu of contraceptive choice is desirable, and that a method to prevent pregnancy after unprotected intercourse or after a contraceptive failure is critically needed (Marie et al, 1999).

Introduction of emergency contraception was a welcome addition for the campaign against unwanted pregnancy and unsafe abortion. Since most of the regular methods used before or during sexual intercourse, emergency contraceptives are the only method that can be used with in short time after sexual intercourse, offering a second chance to prevent unwanted pregnancy. Studies estimated nearly half of the induced abortions could be prevented if emergency contraception is accessible to all women and used correctly (UNFPA, 2001; ICEC, 2004; Hatcher et al, 1998, and Ipas, 2005).

Over 30 years of clinical use of emergency contraception has confirmed that such methods substantially reduce the chances of pregnancy (Ipas, 2005). The most extensively researched emergency contraceptive methods is the Yuzpe method or combined oral contraceptive pills (200 mcg of ethinyl estradiol and 1.0mg of levonorgestrel, taken within 72 hours of unprotected intercourse and then 12 hours later) , this method is estimated to reduce the likelihood of pregnancy by 56 percent to 89 percent after a single act of intercourse. The other regimen levonorgestrel (1.50 mg levonorgestrel in a single dose or in two doses of 0.75 mg taken up to 12 hours apart starting within 48 hours of unprotected intercourse), reduces the risk of pregnancy by 60 percent to 93 percent or more after single act of intercourse. However, post-coital insertion of a copper intera utrine contraceptive device (IUD) has been used as emergency contraception in the past few decades. There are also two new agents under evaluation that offer more promising

protection, RU-486 and the synthetic progestin and antigonadotropin danazol (Ellertson, 1996; ICEC, 2004; Hatcher et al, 1998, and ESOG, 2002).

In Ethiopia a high dose of combined oral contraceptives has been advised for emergency purposes by health care providers for decade's prior to the introduction of the dedicate product called Postinor-II tablets (family of levonorgestrel - only regimen) in the late nineteen nineties to public health institutions by NGOs and concerned professional associations (Hatcher et al, 1998; Channe, 2003, and ESOG, 2002).

1. 2 Statement of the Problem

Meeting the need of youth today is critical for a wide range of policies and programs, because the actions of young people will shape the size, health, and prosperity of the world's future population. Moreover, improving young people's health is a critical goal in and of itself, with long- term benefits to society as a whole (PRB, 2000).

There are more young people on earth than ever before. At the turn of the 21st century, 1.7 billion people - more than one- fourth of the world's six billion people are between the ages of 10 and 24, and the vast majorities, 86 percent, live in less developed countries (PRB, 2000 and Ipas, 2005). Young people aged 15-24 years constitute about 20 percent of sub-Saharan Africa's population and will, therefore, have a substantial impact on future population growth, make an understanding of the patterns of sexual behavior of young men and women a significant issue for research and policy (Negussie et al, 1999). In Ethiopia also young people aged 10-24 account 32 percent of the total population (PRB, 2000).

Overall, young people's health and educational prospects are improving, and marriage and childbearing are occurring at later, more mature stages of life, compared with previous generations. Nevertheless, of some concerns remaining, complications of pregnancy, child birth, and unsafe abortion are still the major causes of death for women aged 15 to 19 (PRB, 2000).

Trends in sexual activity of young people is increasing in the world, but more so in developing nations (Negussie et al, 1999). Premarital sexual activity is common in many parts of the world and is reported to be on the rise in all regions. In many countries, young women and men are under strong social and peer group pressure to engage in premarital sex (PRB, 2000). Surveys show that, on average, 43 percent of women in sub-Saharan Africa and 20 percent in

Latin America have had premarital sex before age 20. For instance, median age at first intercourse among young women in Cameroon, Kenya and Niger is 15.9, 16.8 and 15.3 respectively from Africa and Brazil 18.8 and Bolivia 19.0 from Latin America (PRB, 2000). In Ethiopia the median age at first sexual intercourse for women is 16 years. According to EDHS 2005, among women age 25-49, 32 percent had sexual intercourse before age 15, and 65 percent before age 18 (CSA and ORC Macro, 2006).

Young people often have inadequate or misleading information on sexuality and reproductive health and lack access to reproductive health care. Increasing sexual activity places youth at greater risk of unintended pregnancies and STIs, including HIV/ AIDS (Negussie et al, 1999 & PRB, 2000).

Unplanned pregnancies are the result of various factors, including a lack of knowledge about menstruation and pregnancy, a lack of access to and knowledge about how to use contraceptives, difficulties in using contraceptives because of partner's or family objections; contraceptive failure and sexual assault (Ipas, 2005).

Yet services often do not provide youth with the means to protect themselves and their partners from infections and unintended pregnancies, limited access to condoms and other contraceptives, even where they are affordable, remains a major barrier to use. Other barriers to use include attitudes and misconceptions- when, how and why to use the method, (PRB, 2000).

Generally speaking, adolescent women are less likely than women over age 20 to use contraceptive methods. Reasons for this include lack of information, misinformation, and fear of side effects, along with geographic social, cultural and economic barriers to access and use of family planning (PRB, 2000).

Only 13 percent of married adolescent age 15-19 use contraception in sub-Saharan Africa compared with 55 percent in Latin America and the Caribbean (PRB, 2000). Because of lack of knowledge and skill in using contraception, adolescents are more likely than adults to experience unintended pregnancies during their first year of contraceptive use (Ipas, 2007). In South Africa, 61 percent of sexually active women used a modern contraceptive method, yet 53 percent of all births were reported as mistimed or unwanted and 78 percent of births to women aged 19 or younger were unplanned (Blanchard et al, 2005).

Unintended pregnancy poses a major challenge to the reproductive health of young adults in developing counties. Young women with unintended pregnancies obtain abortions - many of which are performed in unsafe conditions - and others carry their pregnancies to term, incurring risks of morbidity and mortality higher than those for adult women (Aziken et al, 2003). Unplanned pregnancies among young women are a world wide problem with social and economic repercussions for the unprepared young individual (Mqhayi et al, 2004).

In Ethiopia according to the survey conducted in 2000 by ESOG in nine administrative regions, 25.6 percent of 1075 abortion cases were induced abortions. Among them, 58 percent of the cases were in the age range 20-29 years. Of those pregnancies ended in abortion 60 percent were unplanned and 50 percent were unwanted (ESOG, 2000).

Emergency contraception involves methods of contraception used for preventing a pregnancy after unplanned or unprotected sexual intercourse. The concept appears appropriate for adolescents and students in higher institutions or those in vocational training who engage in sporadic and occasional sexual intercourse's (Arowojolu and Adekunle, 2000). The potential of EC to prevent unwanted pregnancies and its utilization in developed counties has been well documented. However in vast majority of developing counties including Ethiopia the potential clients' service providers and the services status is not well documented (Ellertson, 1996, Ameha & Nebreed, 2006 and Atsede, 2007).

This study is designed to asses the perspective and practices of emergency contraception by female students in post–secondary institutions and male students and the providers perspective in Awassa town, where number of governmental and private post secondary institutes placed. It sought to understand the factors that affect the knowledge, attitudes and utilization of emergency contraception by this group of female students and the circumstances under which they use it. The study conceptualize that majority of adolescents are sexually active and engaged in unprotected sex and may use an emergency contraceptive methods. It will enquire about student's willingness to use emergency contraceptives when necessary and their sources of relevant information and available methods. The results will help in policy formulation, education initiatives and strategic planning to make emergency contraceptive readily available to the students and other groups of youths in the country with a similar setting.

1.3 Objectives of the Study

Based on the aforementioned problems the study aims at assessing the attitude of female post-secondary students and service providers' towards emergency contraception in Awassa town.

The specific objectives of the study are:

1. to determine the level of awareness of contraceptives with emphasis to EC among female post-secondary students.
2. to assess the attitude of post-secondary female students towards EC.
3. to assess the utilization of EC among post - secondary female students.
4. to identify the factors that affect the attitude of EC among post-secondary female students.
5. to identify the attitude and role of male students and service providers in the promotion and practices of EC.

1.4 Hypotheses

The following hypotheses serve as the guiding research assumption for the investigation.

1. Female students awareness towards EC increases with an increase in their age and level of education (year of study).
2. Sexually active female students are more likely to be aware of and intend to use EC than those who are not.
3. Female students communicate with partner and peers about RH matters are more likely to be aware and intend to use EC.
4. Female students exposed to different Medias are more likely to be aware and intend to use EC.
5. Female students those who have urban background are more likely to be aware and intend to use EC.
6. The better the knowledge of EC, the better the positive attitude towards EC among female students.

1.5 Significance of the Study

Emergency contraceptive pills play a vital role in preventing unwanted pregnancies and would serve as a backup to other family planning methods. Preventing unintended pregnancies by improving the existing family planning services through broadening of the method mix and ensuring access and availability of contraceptive methods, will ultimately contribute to the reduction of the morbidity & mortality of Ethiopian women particularly the youth.

Despite limited studies were conducted on the issue of EC in the country those studies of Ameha & Nebered (2006) and Atsede (2007) both focused on female students at University level only. Therefore, besides considering students at middle level higher institutions this study attempted to look for the attitude of male students towards EC and tried to fill the gap in the previous studies. Furthermore, its findings enriched the outputs of the former studies and would help in formulation of policy interventions, education initiatives and strategic planning to make emergency contraceptive readily available to the students and other groups of youths in the country within similar settings.

1.6 Limitations of the Study

This study has covered only two colleges among nine governmental and private owned non-health science institutions in Awassa town and considered the regular students only as sample representative. This is due to resource constraints in terms of time and finance.

Even though the study subjects' responses privacy and confidentiality were assured during the survey time; the sensitive nature of some of the questions might have an effect on the level of honesty. It was possible that respondents might under report about premarital sexual activities, number of sexual partners, history of pregnancy and induced abortion due to the influence of socio-cultural norms. This might lower the actual prevalence of sexual practices and related matters among female students of the selected sample colleges.

Furthermore, for the fact that EC guideline of Ethiopia did not include the IUD (ESOG, 2002), this study also focused on the emergency contraceptive pills (ECPs) only.

1.7 Operational Definition of Terms and Concepts

Knowledge- is awareness of the presence of the methods, type of EC methods, their sources, drug content, the ability to identify when to take EC after unprotected sex, situations

to take EC, mechanism of action, its side effects, legal status, and effectiveness of ECs to prevent unintended pregnancy. The study subjects' knowledge of EC classified as good, fair and poor according to the number of correct responses to the series of six knowledge questions.

Attitude – is opinions, out looks, values, position and intentions of the study subjects towards the utilization of EC methods. Study subjects who have concerns and negative opinion about ECs and responded negatively for attitude items were regarded to have negative attitude towards EC. While those who have positive out look and no concern towards ECs and responded the attitude questions positively were considered to have a positive attitude towards ECs.

Perspective – a way of thinking, awareness, understanding, overall out look or particular attitude towards EC among the respondents.

Practice – is the utilization skill or ever use of EC on the basis of their knowledge when the study subjects are exposed to unprotected sexual intercourse to prevent an intended pregnancy.

Unprotected sexual intercourse – is an intercourse taking place without barrier methods such as no contraceptive has been used, when there is a contraceptive accident (failure) or misuse, condom rupture, slippage or misuse, failure to abstain on a fertility day of the cycle in a women who uses the calendar method and in case of rape (forced sex).

Post-secondary students: – students who completed their high school education at grade 10 and continuing their tertiary education at colleges and universities.

Sources: Amaha & Nebreed (2006), Berhanu (2006) and Atsede (2007).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 The Concept of Emergency Contraception

Despite the availability of highly effective methods of contraception, many pregnancies are unplanned and unwanted. These pregnancies carry a higher risk of morbidity and mortality, often due to unsafe abortion. Many of these unplanned pregnancies can be avoided using emergency contraception (ICEC, 2004).

Emergency contraception refers to contraception methods that can be used by women following unprotected intercourse or if the women had a contraceptive accident such as leakage or slippage of condom to prevent an unwanted pregnancy (ESOG, 2002 and Trussell & Rymond, 2007).

There are two types of emergency contraception: hormonal methods and the insertion of intrauterine device (IUD). Hormonal emergency contraception consists of:

i) Combined oral contraceptive pills: contain 200mcg of ethinyl estradiol and 1.0 mg of levonorgestrel, taken within 72 hours of unprotected intercourse and then 12 hours later. This regimen is known as the Yuzpe's method, and it has been used since the 1970s.

ii) Progesterone only pills: when pills containing 0.75 mg of levonorgestrel available, one pill should be taken as the fist dose as soon as convenient, but not later than 3 days (72 hours) after unprotected intercourse to be followed by another one pill 12 hours later. When pills containing 0.03mg of levonorgestrel are available, twenty pills should be taken as the first dose as soon as convenient but not later than 72 hours after unprotected intercourse to be followed by another 20 pills 12 hours later (ESOG, 2002; ICEC, 2004)

Another, non-hormonal method of emergency contraception involves insertion of a copper intra-uterine contraceptive device (IUD) into the uterus. They are most appropriate for women in stable relationships who wish to retain the IUD for long-term contraception and who meet the screening

requirements for regular IUD use. This method prevents implantation of fertilized egg and can be used to prevent pregnancy up to five to seven days after unprotected intercourse. However, emergency IUD insertion requires a much higher degree in training and clinical over sight than administration of emergency contraceptive pills (Ellertson, 1996; Trussell & Rymond, 2007).

There are also two other methods which have been investigated more recently and that often more promising protection: a synthetic progestin and antigonadotropine, danazol and mifepristone, more commonly known as RU - 486 (Ellertson, 1996 & Trussell & Rymond, 2007)

The exact mode of action of ECPs in any given case can not be known. ECPs have been shown to inhibit or delay an egg from being released from the ovary when taken before ovulation. They may also prevent sperm and egg from uniting or stop a fertilized egg from attaching to the uterus. ECPs do not interrupt or abort an established pregnancy. They can only help in preventing unwanted pregnancy. ECPs play a crucial role in family planning programs as a backup method to avoid unwanted and unplanned pregnancy as well as a bridge to continuing use of family planning methods (ESOG, 2002; ICEC, 2004; Trussell & Rymond, 2007 & Galvao et al, 1999).

Emergency Contraception is indicated to prevent pregnancy after unprotected or inadequately protected sexual intercourse, including:

- when no contraceptive has been used
- when there is a contraceptive failure or incorrect use, including:
  - ✓ condom breakage, slippage, or incorrect use
  - ✓ two or more contraceptive missed combined oral contraceptive pills
  - ✓ progestin-only pill (minipill) taken more than three hours late
  - ✓ more than two weeks late for a progestin only contraceptive injection (depot- medroxy- progesterone acetate or norethisterone enanthate)
  - ✓ more than seven days late for a combined estrogen- plus - progestin monthly injection
  - ✓ dislodgment, delay in placing, or early removal of a contraceptive hormonal skin path or ring
  - ✓ dislodgment, breakage, tearing or early removal of diaphragm or cap

- ✓ failed coitus interrupts (e.g., ejaculation in vagina or an external genitalia)
- ✓ failure of a spermicidal tablet or film to melt before intercourse
- ✓ miscalculation of the periodic abstinence method or failure to abstain on fertile day of cycle
- ✓ IUD expulsion; or

- in case of sexual assault when the women was not protected by an effective contraceptive method(ESOG, 2002 & ICEC, 2004)

2.2 The Need For Emergency Contraception

The need for emergency contraception is clearly demonstrated by the occurrence of unwanted pregnancies and induced abortion, and by the high rates of unwanted pregnancy among adolescents. Out of 210 million pregnancies occur in the world annually; about 79 million are estimated to be unintended. Of these, more than 50 percent end in abortion (IWHC, 2007; Ipas, 2007 and Bongaarts, and Westoff, 2000).

No method of contraception is 100 percent effective and each year an estimated 8 to 30 million pregnancies occur around the world as a result of contraceptive failure (Segal and Lafuardia, 1990). Emergency contraception could fill an important gap for women who have had unplanned intercourse (including women who are raped or have been coerced to have sex), have experienced a contraceptive accident or have neglected to use an ongoing, precoital contraceptive method (Muia et al, 2000). A contraceptive failure analysis by James Trussell and his colleagues explained that in US 68 percent of contraceptive failures are classified as unintended pregnancies - 94 percent of those ending in induced abortion (Trussell et.al, 1999). According to the 1998 South Africa DHS, 61 percent of sexually active women used a modern contraceptive method, yet 53 percent of all birth were reported as mistimed or unwanted (Balnchard et al, 2005). Moreover, it is estimated 2000 to 3000 condoms slip or break each day in Canada (Canadian Pharmacists Associations, 2000). The use of emergency contraceptives as a backup for condom or any contraception method failure is an important option for women to prevent unwanted pregnancies, and may encourage safer sexual behavior (Balnchard et al, 2005) in addition to these it serve as a bridge to continuing use of family planning methods (ESOG, 2002).

2.3 Effectiveness of Emergency Contraception

Among the various forms of contraception, emergency contraceptives are the only one that can be used after sexual intercourse, offering a second chance to prevent unwanted pregnancy (Aziken et al, 2003).

Various studies have shown that the levonorgestrel only regimen reduces the risk of pregnancy by 60 percent to 93 percent or more after a single act of intercourse, and the combined (Yuzpe) regimen reduces it by 56 percent to 89 percent. In direct comparison, the levonorgestrel regimen has been shown to be substantially more effective than the combined regimen. Both regimens appear to be more effective the sooner after intercourse (with in 72 hours) they are used. Emergency contraceptive pills are not as effective as consistent and correct use of most modern contraceptive methods (ICEC, 2004; Ellertson, 1996; Remez, 2003 & Olenick, 1999).

2.4 Side Effects Associated with Emergency Contraception and its Contraindications

No deaths or serious complications have been causally linked to emergency contraception. Side effects that are medically minor but trouble some to clients do occur, however, side effects of both regimens include nausea, vomiting abdominal pain, fatigue, headache, dizziness, breast tenderness, and irregular vaginal spoiling or bleeding. The levonorgestrel only regimen is associated with significantly lower chance of nausea and vomiting than the combined regimen. In most women, menses following treatment will occur within a week before or after the expected time. No evidence exists to indicate that ECPs are dangerous under any known circumstances or in women with any particular medical condition (ICEC, 2004 & ESOG, 2002).

2.5 Socio-Demographic Factors

In many counties, women ability to control their fertility is limited. Gender roles, power imbalances, cultural norms concerning sexuality and women vulnerability to rape and violence put them at high risk for unwanted pregnancy (UNFPA, 1997).

In different countries the differences in socio-demographic characteristics among the societies affect the perception and utilization of contraceptives. Generally speaking adolescent women are less likely than women over age 20 to use contraceptive methods. Reasons for this include lack of information, misinformation, and fear of side effects, along with geographic, social, cultural and

economic barriers to access and use family planning (PRB, 2000). A study by Hogan and Belay (2004) on Contraceptive use and intentions in Southern Ethiopia explained that in countries with a large Muslim population, the number of children ever born is generally found to be greater and the use of contraceptives less likely among Muslims than among members of other religious groups (Hogan and Belay, 2004).

Knowledge of contraception both among women and men varies by the background characteristics of the respondents. According to EDHS 2005, about 88 percent currently married women and 93 percent men know at least one method of contraception. Women and men age 20-24 are more likely than those of age 15-19 to have heard of contraception methods. In addition to this among unmarried women who are sexually active, Knowledge and use of any contraception method is more likely higher than among those who are currently married at the time of surveys (CSA and ORC Macro, 2006). On the other hand, the study by Hogan and Belay reported that a normative economic factor - the inheritance of land by sons from their fathers considerably reduces the likelihood of contraceptive use, perhaps because it weakens the economic power of the wife and necessitates the birth and survival of sons (Hogan and Belay, 2004).

Moreover, the study by Hogan and Belay arrived at a conclusion that as population migration continues and more complex towns (- in which a diversity of ethnic groups live) develop; a tendency will emerge toward increased birth limitation (contraceptive use) among all of the ethnic and religious groups in Southern Ethiopia (Hogan and Belay, 2004). Studies in developed counties on EC variously found that knowledge on EC was better in women who had had history of abortion, who were younger, unmarried, regular or prior users of contraception, more educated and more likely employed and as noted it appears to vary by age (Goldsmith, 2004).

A study conducted in south west Nigeria shows that the respondents in the age group 16-25 years and those who were aware of emergency contraception were likely to have used ECP. This also applies to respondents from Pentecostal Churches and those with traditional religion (Arowojolu and Adekunle, 2000). Ethnic groups are also a major cultural force in reproduction, however, and different religions affiliations are present within the ethnic groups, providing a context following greater understanding of the effects of religion on birth control. Based on the findings the study concluded that the main factors that increase the likelihood of a woman's using a contraceptive or

intending to use one is her living in a family with a higher level of education or in a community with access to health services (Hogan and Belay, 2004).

A study by Berhanu Dessalegn on EC among women seeking post abortion care, reported that the literate women more likely than the illiterate counter parts in awareness of EC. Additionally, EC awareness of never married women is better than the ever married counter parts (Birhanu, 2006). Another study on KAP of EC conducted at Bahir Dar University indicated that awareness of EC increases as age increases and also similarly as the year of study increases awareness of EC also increases (Astede, 2007).

2.6 Parent and Peer Related Factors

However studies regarding the issue showed that parents can be influential source of knowledge, belief, attitudes and values for their children. A study conduced in America suggests that parent childe communication about sexuality appears to play an important role in reducing the onset of sexuality and to increase contraception practice among sexually active adolescents (Dutra, 1999). Findings in Australia also indicated that female youth are more likely to seek advice to and look for information to prevent unplanned pregnancy and parents are the most likely sources of information followed by friends and media (Goldman, 2000). A study result for south west Nigeria explained that the commonest sources of emergency contraception were friends (32.8 percent of the respondents) and magazines (33.7 percent) (Arowojolu and Adekunle, 2000). Similarly a study conducted in Kenya demonstrated that the main sources of emergency contraception were friends and schools (Muia et al, 2000).

A study in two inner cities of US reported that youth communication with their parents were almost 15 percent more likely to abstain from sexual intercourse and almost 20 percent more likely to use birth control if sexually active (Charyl et al , 2006 in Atsede, 2007) .

A study conducted in Ethiopia among post abortion service seeking women, health institutions were cited as the first source of information about EC (40.8 percent) followed by friends/relatives (33.9 percent) and the media (16.9 percent) (Berhanu, 2006).

2.7 Males Attitude towards Contraceptives and their Role in the Utilization of EC

The disparity between men and women in their reporting of contraceptive use has long been documented in the demographic literature. Men or husbands generally, reporting greater use of

contraceptives than do women or wives. In studies among 14 countries current contraceptive use to be found higher among currently married men compared with currently married women in 12 of the countries (Ezeh & Mboup, 1997). According to Ethiopian DHS knowledge of contraceptive methods among men (93 percent) is higher than the currently married women (88 percent). Similarly, considering the average number of methods known, contraceptive knowledge is higher among sexually active unmarried men (5.6 methods) than women (4.7 methods) (CSA and ORC Macro, 2006).

A study on sexual behavior and perception about HIV and AIDS among students of ACTE reported that knowledge of contraceptives is better among male students (88.9 percent) than the female (73 percent) (Temesgen, 2007).

With regard to ECs, the power dynamics in relationship and pressure to have sex may be associated with a woman's decision to use emergency contraception. Women with partners who had a strong desire to avoid pregnancy and those in a relationship in which the male partner dominated decision-making were more likely to use EC than their counter parts (Tamkins, 2004). Similarly, in the study of KAP of EC among urban family planning clients in Honduras ascertained that females were less likely than males to indicate that they would use or encourage a partner to use EC (Garcia et al, 2006).

2.8 Contraception Experience of Post-Secondary Female Students

Given increasing adolescent sexual activity and decreasing age at first sex in developing countries, the use of contraceptives to prevent unwanted pregnancy and unsafe abortion is especially important (Aziken et al, 2003). A study on South West Nigerian post-secondary female students had found that the rate of contraceptive use about 32.8 percent among sexually active adolescents (Arowojolu and Adekunle, 2000). Whereas, a study among female undergraduate students in Nigeria conducted three years later the prior indicated that the rate of contraception practice among sexually active respondents was 81.3 percent (Aziken et al, 2003) and also 62 percent among young South African women (Mqhayi et al,2004). In Ethiopia the DHS 2005 report revealed that, about 52 percent of unmarried but sexually active respondents of age group 15-24 used modern contraceptive. A study on students of ACTE indicated that 48.3 percent male and 47 percent female respondents had an experience of using modern contraceptives (Temesgen, 2007). Finding of a survey on female students of Jimma University

explained that among one–third of sexually active respondents only one – fifth was using regular method of FP at the time of the study (Amaha & Nebreed, 2006). On the other hand, the rate of contraceptive practice among female students of Bahir Dar University is found to be 99.1 percent of sexually experienced students (Atsede, 2007). To see the situation in developed countries as compared with the developing nations, the contraceptive prevalence among sexually active Danish adolescents is 95 percent.

Concerned with EC experiences, 58 percent of female Nigerian undergraduates heard about the method (Aziken et al, 2003) and only 50 percent of the Kenyan university students (Muia et al,2000). Moreover, only 17 percent of young South African women heard about the method and 1 percent ever used it (Mqhayi et al, 2004) as compared with 98 percent among Princeton University students (Harper & Ellerston, 1995). In Ethiopia it is indicated even far less than the developing nations; 22.2 percent and 34.8 percent in Jimma and Bahir Dar Universities female students ever heard about EC, respectively; and only five students in each practiced the method (Amaha & Nebreed, 2006 and Atsede, 2007).

2.9 The Role of Health Care Providers in Promotion of Emergency Contraception

According to the ICPD, Cairo 1994 Programme of Action recommendation, prevention of unwanted pregnancies must always be given the highest priority and all attempts should be made to eliminate the need for abortion (Ipas, 2007).

At the 1995 international conference on emergency contraception held in Bellagio, Italy, experts identified the presence of few products and failure to provide the service by many health programs as obstacles for the wider use of emergency contraception. The Bellagio consensus states "we must make access to emergency contraception a reality" (CSEC, 1995). However emergency contraception is unknown for vast majority of potential clients and service providers especially in developing countries (Ellertson, 1996). Studies have suggested that most women do not need any interaction with health care providers in order to use ECPs safely and effectively. However, counseling can serve to reinforce any messages given in writing and may lead to better overall out come. Counselors should be mindful of possible unique sources of anxiety among women requesting ECPs; embarrassment at failing to use contraception effectively, rape related trauma, concern about STIs, including HIV, due to condom failure or non – use, and hesitation due to a misperception that ECPs, cause abortion (ICEC, 2004).

Heath care providers requires to counsel adolescents about ECPs during visits to health care facilities women of reproductive age being treated for sexual assault in emergency department or other health settings should be counseled about ECPs and offered a complete course of ECPs treatment at the time of assessment. Counseling about EC should include: description of the methods, mechanism of action, indication for use, efficacy, safety ,common side effects, time limit for use, where and how to obtain the method and also information about other effective methods of contraception (ICEC, 2004 & Gold et al, 2004). Some studies done in USA as indicated, knowledge of emergency contraception among providers increased by 53 percent; which was 13.2 percent prior to the implementation of training programs of emergency contraception for providers and clients (Gold et al, 2004).

In Brazil, obstetrician - gynecologists play a critical role in informing their clients about emergency contraception and in educating the public about the proper regiment (Galvao et al, 1999).

However, a study conducted in Nigeria on health care providers' knowledge and attitudes towards EC indicated that nine in ten providers have heard of EC but many of them lack specific knowledge about the method. Only 10 percent of these providers correctly identified the drug contents, dose and timing. One in ten of those who knew of EC always provide information to clients. The same study revealed that fewer than half of women who were aware of or had used EC had received information from trained health care providers (Margaret et al, 2006).

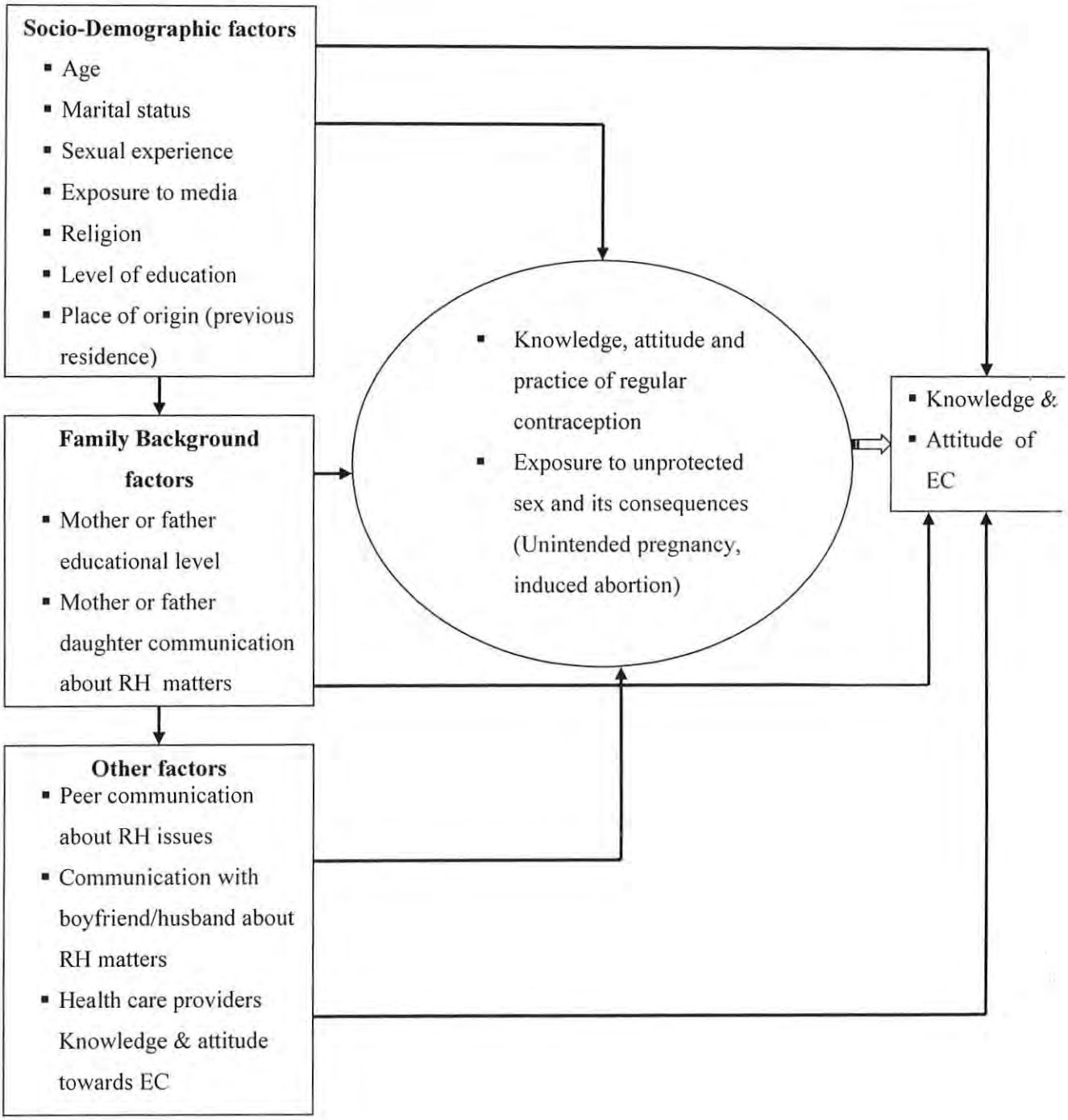
In Ethiopia, a study conducted at Jimma University on the potential clients and service providers' perspective towards EC shows that almost all interviewed nine MCH/FP service providers of governmental and non- governmental MCH/FP service outlets were familiar with the term "emergency contraception", although many providers knew the concept and some could mention EC regimens like Yuzpe regimen. Most lack comprehensive knowledge on the different methods available and their regimen. All agreed that, EC should be part of the MCH/ FP service (Ameha & Nebered, 2006).

2.8 Conceptual Frame Work

Based upon the literature reviewed above, in the study, the socio-demographic, family background, and other communication and service providers' related factors are considered as independent variables, knowledge and practice of contraception and exposure to unprotected sex and its consequences as intermediate variables, and knowledge and attitude of EC as dependent variable.

The independent variables: socio-demographic factors such as age, marital status, sexual experience, religiosity, level of education, exposure to different media and place of origin (previous residence); family related factors such as parents educational level, parents occupation and parent daughter communication about RH matters, and other factors like peer communication about RH matters and health care providers knowledge and attitude towards EC affects or determines the level of knowledge and attitude of EC among female post-secondary students directly or through the intermediate variables Knowledge and practice of regular contraception and exposure to unprotected sex and its consequences like unintended pregnancy and induced abortion. Furthermore, the socio-demographic factors like age, exposure to media, religion, level of education and place of residence may affect the family background factors such as parents educational level and their communication with their daughters about RH issues, and also peer and partner communication skill about sexual matters. This shows the existence of the inter-relationship between the predictor variables themselves.

Figure 1 Conceptual frame work:



Source: Modified from Berhanu (2006) and Astede (2007)

CHAPTER THREE

METHODOLOGY

3.1 Study Area

The study area Awassa town is the capital of Southern Nations Nationalities and Peoples' Regional (SNNPR) state located approximately 275 kilometers south of Addis Ababa, the capital of Ethiopia. Awassa is among the fast growing cities in Ethiopia. It is the main administrative, commercial and industrial town of the region. In the town there are four governmental and thirteen private Teacher Education, Business, Health Science and Technical and Vocational colleges as well as the University of Hawassa. In these post- secondary institutions thousands of female students are following their tertiary education. Numbers of governmental and non–governmental MCH/FP service outlets are also providing reproductive health and related services for potential clients in the town.

3.2 Study Design

The study methodology was a cross-sectional study including both quantitative and qualitative surveys. The quantitative findings of the survey were enriched by the qualitative study. The purpose of the qualitative survey was to elaborate on the gaps identified and to explore some of the major quantitative results further.

3.3 Data Sources

The primary data sources of the study were female students of randomly selected two post-secondary institutions in Awassa town which were the target population of the study; selected male students of the sample institutions and selected MCH/FP service providers working in governmental and non-governmental MCH/FP service outlets in the town.

3.4 Sample Size Determination and Sampling Procedure

3.4.1 Sample Size Determination

There are few previous studies on knowledge, attitude and practice of EC among University students in Ethiopia, based on which the sample size has been estimated. A study on potential clients' (female students) and service providers perspective at Jimma University shows that only

22.2 percent of respondents were ever heard of EC (Ameha & Nebreed, 2006), which is used to determine the sample size based on single population proportion.

Therefore, the sample size of the study was determined based on the assumption that:

P = proportion of awareness of EC = 22.2%

$Z_{\alpha/2}$ = the standard normal value corresponding to the desired level of confidence, 95% which corresponds to the value 1.96. Where α is the risk of a type I error (failing to accept the null hypothesis-*false positive*) usually equal to 0.05.

Z_{β} = the standard normal value corresponding to the desired level of confidence, 80%, which correspond to the value 0.84. Where β is the risk of a type II error (failing to reject the null hypothesis-*false negative*) taken as the value 0.20.

d = the effect size defined by the alternative hypothesis (the existing difference), 5% is accepted.

Power of the study: is equal to 1-β which is the probability of obtaining a statistically significant *P* value, if a true difference exists that is equal to the effect size defined by the alternative hypothesis. Since $\beta = 0.20$ the power of the study is equal to 80% (0.80).

Hence, the sample size was determined by the following Mark Woodward formula based on the above assumptions.

$$n \approx \frac{(Z_{\alpha/2} + Z_{\beta})^2 P(1-P)}{d^2}$$

where n is the sample size. (Woodward, 1992)

$$n = \frac{(1.96 + 0.84)^2 0.222(1-0.222)}{(0.05)^2} = 542$$

By taking additional 10% contingency for non-response rate, the total sample size would be:

542+10 %(non-response rate) = **596**

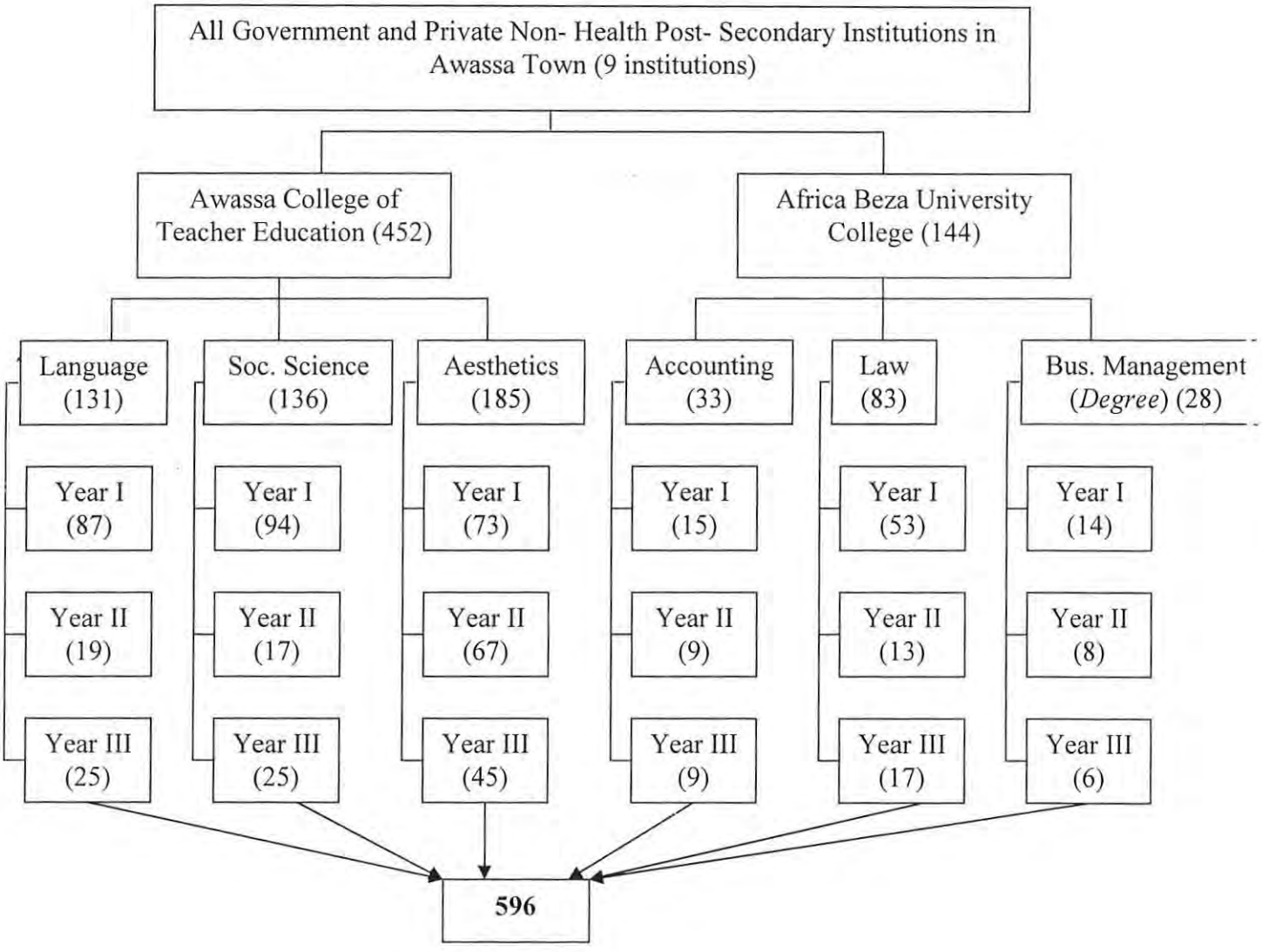
3.4.2 Sampling Procedure

After calculating the sample size, the multistage stratified sampling was employed considering all governmental and private non-health post-secondary institutions in Awassa town, streams or departments and year of study in the sampling process for the selection of the study subjects.

Initially, of the whole nine governmental and private non-health post-secondary institutions in the town two institutions, Awassa College of Teacher Education (ACTE) which is governmental and the private owned institute Africa Beza University College (ABUC) were selected randomly and the total sample size of the study was distributed over each of the institute proportional to their size. In the second stage, streams for ACTE and departments for ABUC were selected using simple random sampling (SRS) technique from each selected institute and accordingly the sample size of the study allocated to each institute was distributed to each of the stream and department proportional to their size. Finally, the required numbers of female students were selected randomly (applying SRS) from each year of study again proportional to their size from the randomly selected streams and departments. (*About the sample colleges in this study see annex V)*

Figure 2 Schematic presentation of the sampling procedure

(*The allocation of students at each stage is proportional to size*)



3.5 Data Collection Instruments

The primary data for the study was generated through three main tools: structured questionnaire, focus group discussion (FGD) and key informants interview.

The survey questionnaire which generated the quantitative data pertaining to verify students' knowledge, attitude and practice of EC and their socio-demographic characteristics was adapted from previous studies on EC to keep the quality of the data.

The English version of the structured questionnaire (a combination of both open-ended and close-ended) was translated in to Amharic language by employed translator and then back to English by the researcher to maintain its consistency.

The questionnaire was classified into five parts. The first part was intended to generate information about the respondents' socio-demographic characteristics, family and partner communication about reproductive health issues; the second part was about the sexual background history of the respondents and their knowledge, attitude and practices of the regular contraception and the third, fourth and fifth parts were about the study subjects knowledge, attitude and practices of ECs and related issues.

The questionnaire was tested before the actual survey within a pilot survey on 40 college students (20 from Aleph Health Science Private College and the other 20 from ACTE) to ensure its clarity, ordering, consistency and acceptance. The pre-test result enforced the study to exclude the health science colleges as all students know about EC regimens in their professional courses. Finally, the questionnaire was made ready after the necessary correction. The respondents were selected randomly from their attendance list obtained from the registry of their respective colleges. Instructors of the two colleges permitted and cooperated to use the last 15 minutes of their respective classes in order to distribute the questionnaire among the selected students only. Then, after obtaining the consent of respondents, the data was collected by ten trained enumerators on March 2008 for two consecutive days (a day for each) under the follow up of two trained supervisors and the principal investigator for its accuracy and completeness.

The qualitative information was obtained by focus group discussions (FGDs) held with both female and male students and key informants interview among health care providers. These generated more qualitative information that might be unforeseen by the researcher and the open ended format allowed the participants to raise new issues to enrich the quantitative survey.

Eight female students from each institute were recruited randomly from each year of study for the two FGDs held at each college on March 2008 moderated by the principal investigator and similarly it was done for the male students FGDs. The guiding issues of the FGDs were classified as premarital sex, contraception practices and prevention of unintended pregnancy and the knowledge and attitude towards ECs.

The key informants' interview was carried out among seven purposively selected health care providers from the selected MCH/FP service outlets, FGAE Awassa branch, Marie Stops International Clinic Awassa branch and Awassa Health Center two from each and one from ACTE students' clinic on March 2008. The interview was carried out by the principal investigator using open ended and responsive questioning and the information obtained was recorded on notebook. The interview was focused on the knowledge and attitude of health care providers towards ECs and their regimens.

3.6 Data Processing and Analysis

Information generated through focus group discussions and in-depth interview were qualitatively analyzed and enriched the quantitative survey results.

The data collected from the survey were entered into computer for analysis mainly using Statistical Package for Social Sciences (SPSS). Then, data were edited, coded, cleaned and some consistency checks were made to assess the quality. It was done by running frequencies and cross tabulation among various reported cases or variables.

The analysis part consisted of descriptive statistics (frequency and cross tabulation) and the gross effect of each predictor (independent) variable on the dependent variables was tested by crude odds ratio resulted after each individual variable has been fitted in the binary logistic regression with out controlling all the other variables. Selecting the important variables, logistic regression model (multivariate analysis) was used to test the net effect of each selected predictor variable on the dependent one controlling all the other variables.

Logistic regression is a more appropriate technique to analyze and test a hypothesis about the relationship between a set of predictor variables (either categorical or interval) and a dependent variable, which is dichotomous. The model assumes that the probability of occurrence of an event (P) is related to the independent variables in the form of logistic function- the natural logarithm (ln).

The logit is the natural logarithm of odds of the dependent Y, where odds of the dependent are ratios of probabilities that the dependent occurring or not.

Then the logistic regression model is given by:

$$\mathbf{P(event)} = \frac{e^{\beta_0 - \beta_1 x}}{1 + e^{\beta_0 - \beta_1 x}} \quad \Leftrightarrow \quad \mathbf{P(event)} = \frac{1}{1 + e^{-(\beta_0 - \beta_1 x)}}$$

Where β_0 and β_1 are the regression coefficients (constants), and e (approximately = 2.718) is the base of the system of natural logarithms. X is the independent variable. Since there are more than one independent variables,

$$\text{Let } \mathbf{Z} = \beta_0 + \beta_1 \mathbf{X_1} + \beta_2 \mathbf{X_2} + \ldots + \beta_n \mathbf{Xn}$$

Therefore the relation could be extended as:

$$\mathbf{P(event)} = \frac{e^Z}{1 + e^Z} = \frac{1}{1 + e^{-Z}}$$

and the probability of the event not occurring is estimated as:

$$\mathbf{P(no\text{-}event) = 1 - P(event)}$$

The logistic model can be rewritten in terms of the odds of an event occurring. The odds of an event occurring are defined as the ratio of the probability that it will occur to the probability that it will not.

Then the logit model (log of odds) is:

$$\mathbf{log}\left(\frac{P(event)}{P(no-event)}\right) = \beta_0 + \beta_1 \mathbf{X_1} + \beta_2 \mathbf{X_2} + \ldots + \beta_n \mathbf{Xn}$$

$$\frac{P(event)}{P(no-event)} = e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n}$$

In our case, P(event) would be the probability of ever heard about EC in case of analysis of awareness and having favorable attitude in case of analysis of attitude towards EC. Whereas P(no-event) would be the probability of never heard about EC and having unfavorable attitude towards EC for the corresponding similar cases.

3.7 Ethical Considerations

The research permission was obtained from the Institute of Population Studies, AAU and each of the selected institutions respectively before the data collection process started.

The study participants were informed about the purpose of the study and the importance of their participation in the study. The study subjects were informed as they can skip question/s that they did not want to answer fully or partly and also to quite the process at any time if they wanted to do so and their participation was voluntary. After assuring the confidentiality nature of responses and obtaining informed consent from the study subject, the questionnaires were distributed among the selected female students only by the enumerators in collaboration with the instructors in their respective classes of the last 15 minutes to be filled with a strict privacy.

CHAPTER FOUR

BACKGROUND CHARACTERISTICS OF THE STUDY POPULATION

A total of five hundred ninety six female students of the selected two non-health colleges of Awassa town have participated in the study with a non response rate of zero percent. 452(75.84 percent) were from Awassa college of Teacher Education (ACTE) and the remaining 144 (24.16 percent) were from Africa Beza University College. The socio-demographic, family background, partner and peer related characteristics, sexual experience, knowledge of family planning and practices and history of pregnancy and abortion were considered and summarized under this chapter as background characteristics of the respondents.

4.1 Socio- Demographic Characteristics of Respondents

According to the survey findings, age of the study subjects range from 15-29 years with mean and median age of 19.82 and 19 respectively and SD of 2.38. As shown in Table 4.1, more than half (53 percent) of the respondents were age 15-19 and the remaining were age 20 and above.

Majority of the study subjects 65.8 percent had urban background prior to their entry to the colleges, with the rest being from rural. The married respondents account only 13.4 percent and those who never married about 86.6 percent. With regard to their religion, about 48.5 percent were Protestant, followed by Orthodox Christian 37.2 percent, Muslim 11.6 percent and Catholic 2.7 percent. Also, about 48.8 percent of the respondents were attending their respective religious institutions more than once in a week and about 41.1 percent only once.

The distribution of the study subjects on the bases of their year of study shows that the majority (56.4 percent) were first year students and the rest 22.3 percent and 21.3 percent were second year and third year students respectively. About 75.8 percent of the respondents were studying teaching and the remaining Business and Law.

Table 4.1 The Socio- Demographic Characteristics of Female Students of ACTE and ABUC, March, 2008

Socio- Demographic Characteristics	Number (n = 596)	Percent
Age (years)		
15-19	316	53.0
20-24	248	41.8
25+	32	5.4
Previous Place of Residence		
Urban	392	65.8
Rural	204	34.2
Religion		
Orthodox Christian	222	37.2
Muslim	69	11.6
Catholic	16	2.7
Protestant	289	48.5
Religiosity		
Daily	118	19.8
More than once in a week (2-3 days)	173	29.0
Once in a week	245	41.1
Occasionally	45	7.6
Accidentally	15	2.5
Marital status		
Never Married	516	86.6
Ever Married	80	13.4
Field of Study		
Education	452	75.8
Business	61	10.2
Law	83	13.9
Year of Study		
First Year	336	56.4
Second Year	133	22.3
Third Year	127	21.3

4.2 Family Background, Partner and Peer Related Characteristics of the Respondents

As the result shown in Table 4.2, about 51.2 percent of the respondents' fathers were educated secondary and above, 20.5 percent primary and those 18.1 percent respondents' fathers were not educated. Compared to their fathers only 39.7 percent of respondents' mothers were educated secondary and above, where as 27.3 percent of respondents' mothers were in the primary level and 26.3 percent not educated.

Concerning with communication of study subjects with their parents, the respondents were discussing about reproductive health matters better with their mothers (68.8 percent) than their fathers (37.6 percent).

Table 4.2 Percentage Distribution of Female Students of ACTE and ABUC by Family, Partner and Peer Related Factors, March, 2008

Family, Partner and Peer Related Factors	Number (n = 596)	Percent
Respondents' fathers level of education		
Illiterate	108	18.1
Primary education	122	20.5
Secondary education	109	18.3
Above secondary education	196	32.9
Father not alive	61	10.2
Respondents' mothers level of education		
Illiterate	157	26.3
Primary education	163	27.3
Secondary education	139	23.3
Above secondary education	98	16.4
Mother not alive	39	6.5
Discussion about reproductive health issues with father (n= 535)		
Yes	201	37.6
No	334	62.4
Discussion about reproductive health issues with mother(n= 557)		
Yes	383	68.8
No	174	31.2
Discussion about reproductive health issues with boyfriend/husband		
Yes	248	41.6
No	348	58.4
Discussion about reproductive health issues with peers		
Yes	459	77.0
No	137	23.0

As Table 4.2 shows, about 41.6 percent of female students were discussing about sexual and reproductive health issues with their boyfriends or husbands. Moreover, more than three fourth of the respondents (77.0 percent) were also discussing about reproductive health matters with their friends.

4.3 Sexual Experience, Family Planning Knowledge and Practices of the Respondents

Under this section the reproductive health issues such as sexual experience and knowledge of family planning and utilization were considered as background characteristic of the study subjects.

As the survey result shown in Table 4.3, out of the total 596 female students of the two colleges 38.4 percent ever had sexual intercourse in their life time within mean age 18.24 and median 18

at their first intercourse. This agreed with the study finding at Jimma and Bahir Dar Universities where one-third and 40.8 percent of the respondents respectively were sexually active (Ameha and Nebreed, 2006 and Atsede, 2007).

Of those who had sexual intercourse experience 28.0 percent began sexual intercourse before age 18, 53.7 percent at age 18 and above and the rest did not remember or knew the actual age they started sexual intercourse. This is consistent with the study finding of Temesgen (2007) that 47 percent of female students of ACTE had first sexual intercourse at age 16-18. Consequently, the number of partners of 69 percent of the respondents who had sexual experience was one and 26.6 percent had two and above during the study time; while 4.4 percent did not remember or knew their life time number of partners.

Concerning the family planning knowledge of the respondents Table 4.3 shows that, 99.7 percent of female students in the study have ever known at least one modern regular contraceptive method. While only 2 students (0.3 percent of the respondents) never heard about any family planning method in their life time. This result shows the existence of better awareness towards the regular contraceptives compared with the study result at Jimma University where 93.9 percent of the respondents had ever heard about regular contraceptives (Ameha and Nebreed, 2006).

Accordingly, oral contraceptive pills (73.3 percent), injectables (68.8 percent), condoms (64.9 percent) and the calendar/rhythm (56.9 percent) were the methods most frequently mentioned by the majority of students. These findings agreed with the survey findings of Atsede (2007) and Ameha and Nebreed (2006) in which oral contraceptives, condoms and injectables were the most familiar methods by the respondents of their studies. Further more, the result also consistent with the survey finding of the Ethiopian DHS 2005 which shown that oral pills, injectables and condoms were the most widely known regular contraceptives both by women and men (CSA and ORC Macro, 2006).

Of the total respondents, 99.2 percent approved that family planning methods prevent unwanted pregnancy and space child birth. Due to moral and religious reasons only 0.8 percent of the respondents refused to approve the modern family planning methods. The survey finding also showed that 65.4 percent of female students heard about family planning information for the last six months prior to the survey.

Table 4.3 Percentage Distribution of Female Students of ACTE and ABUC by Sexual Experience, Family Planning Knowledge and Practices, March, 2008

Background characteristics	Number	Percent
Sexual Experience		
Ever had sexual intercourse	229	38.4
Never had sexual intercourse	367	61.6
Total	596	100.0
Age at first sexual intercourse		
Below 18	64	28.0
18 and above	123	53.7
Do not remember/know	42	18.3
Total	229	100.0
Number of life time partner/s		
One	158	69.0
Two	27	11.8
Three	20	8.7
More than three	14	6.1
Do not remember/know	10	4.4
Total	229	100.0
Family planning Knowledge by methods*		
Oral pills	437	73.3
Injectables	410	68.8
Condoms	387	64.9
Calendar/rhythm	339	56.9
Norplant	251	42.1
IUD	206	34.6
Withdrawal	194	32.6
Others**	15	2.5
Knowing at least one method	**594**	**99.7**
Approval of Family planning methods		
Yes	591	99.2
No	5	0.8
Total	596	100.0
Exposure to family planning methods information		
Yes	390	65.4
No	206	34.6
Total	596	100.0
Ever use of contraceptive		
Yes	200	87.3
No	29	12.7
Total	229	100.0
Ever used contraceptives by methods		
Oral pills	41	20.5
Injectables	43	21.5
Condoms	62	31.0
Calendar/rhythm	41	20.5
Others***	13	6.5
Total	200	100.0
Intention to use modern contraception in the future		
Yes	425	71.3
No	65	10.9
Not sure	106	17.8
Total	596	100.0

*More than one method was responded **Others include vasectomy, jellies, female condom
***Others include IUD, Norplant and Withdrawal methods

Moreover, in the study those sexually experienced female students were asked about their contraceptive use. As shown in Table 4.3 above, out of the 229 sexually experienced respondents 83.7 percent had ever used one of the contraceptive methods. Condoms (31.0 percent), injectables (21.5 percent) and calendar methods (20.5 percent) were the most commonly used regular contraception by the female students in the study. Except the injectables, condoms and calendar methods were similarly mentioned as commonly used contraception by Bahir Dar University students as reported in the study by Atsede (2007). Similarly, condom (64.3 percent) was the most popular method used by post-secondary school students in south west Nigeria (Arowojolu & Adekunle, 2000).

Finally the study finding shows that out of all the respondents 71.3 percent intended to use modern regular contraception in the future and significant number of respondents (17.8 percent) were not sure about their future use. 10.9 percent of the remaining female students in the study were not interested to use any regular contraceptive method in the future because of the most commonly stated reasons, religious or moral motives (50.8 percent) and fear of side effects (32.3 percent) (Not shown in the table).

4.4 History of Pregnancy and Abortion

The respondents' history of pregnancy and induced abortion were summarized as additional sexual experience related background characteristics under this section.

The survey result in Table 4.4 below shows that, 49.3 percent of those sexually experienced female students in the study ever had pregnancy and the majorities 69.9 percent reported that their pregnancies were unplanned. Of those reported having unplanned pregnancy, 29.5 percent failed to prevent pregnancy due to miscalculation in calendar method, 12.8 percent condom slippage or rupture, 56.3 percent never used any method because of forced sexual intercourse (12.8 percent), forgot to take contraception (12.8 percent),casual sex(19.2 percent) and unavailability of contraceptives(11.5 percent).

Furthermore, out of those respondents who ever had pregnancy, 40.7 percent had an induced abortion while 9.7 percent did not response about their abortion history. Of those unplanned pregnancies 58.2 percent were terminated by induced abortion, 30.4 percent end with unwanted live births and the situation of the rest (11.4 percent) remain unknown (Not shown in the table).

Table 4.4 Percentage Distribution of Female Students of ACTE and ABUC by their History of Pregnancy and Induced Abortion, March, 2008

History of Pregnancy and Abortion	Number	Percent
Ever had pregnancy (n=229)		
Yes	113	49.3
No	116	50.7
Ever had unplanned pregnancy (n=113)		
Yes	79	69.9
No	34	30.1
Reason for unplanned pregnancy (n=79)		
Forced sexual intercourse	10	12.8
Calendar method was not correct	23	29.5
Condom slippage/ rupture	10	12.8
Forgot to take contraception	10	12.8
Casual sex	15	19.2
Other*	11	13.9
Ever had induced abortion(n=113)		
Yes	46	40.7
No	56	49.6
No response	11	9.7

* Other includes unavailability of contraceptives and contraceptive failure

CHAPTER FIVE

EMERGENCY CONTRACEPTIVE KNOWLEDGE, ATTITUDE AND PRACTICES AMONG ACTE AND ABUC FEMALE STUDENTS

5.1 Awareness and Knowledge of Emergency Contraceptive

This study examined the awareness of respondents about EC prior to the assessment of their knowledge about EC.

According to the survey findings, as shown in Table 5.1a, 212 (35.6 percent) of the whole respondents only ever heard about EC; 73.6 percent were from ACTE and the remaining 26.4 percent from ABUC. In addition, majority of the respondents (63.7 percent) who heard about EC were in the age group 20 – 24 (Not shown). This result looks better as compared with the study findings at Jimma University on female students (22.2 percent) and among post abortion service seeking women of selected hospitals in Addis Ababa (14.1 percent), while nearly similar with the study result on female students of Bahir Dar University (34.8 percent) (Ameha & Nebreed, 2006, Berhanu, 2006 and Atsede, 2007).

The female students' awareness on emergency contraception is far less than the figures for some developing nations, 75.7 percent among South West Nigerian post-secondary school female students and 50 percent among the Kenyan female and male university students (Arowojolu & Adekunle, 2000 & Muia et al, 2000).

In the two focus group discussions conducted among female students of both ACTE and ABC only five students had ever heard about ECs. The rest vast majority of the discussants were unaware of any modern product which could be taken after unprotected intercourse in order to prevent unplanned pregnancy. Whereas majority of the participants were mentioned induced abortion as the best mechanism to prevent unwanted pregnancy.

Furthermore, respondents those who had ever heard about EC were asked about their first source of information about EC. As shown in table 5.1b, 40.1 percent of those female students who had ever heard about EC mentioned female friends as their first source of information about EC Significant number of respondents also mentioned television/radio and health care provide (each 38.2 percent) as their first source of information besides reproductive health clubs (

percent), magazines and newspapers (21.2 percent), College clinic (17.9 percent) and boyfriend or partner (14.6 percent).

Table 5.1a Percentage Distribution of Female students of ACTE and ABUC by Emergency Contraception Awareness, March, 2008

Emergency Contraceptive Awareness	Number	Percent
Ever heard about emergency contraception	212	35.6
Never heard about emergency contraception	384	64.4
Total	596	100.0

In the focus group discussions among female students also explained that female friends were their first source of information about EC for the majority of the discussants who had ever heard about EC. While one of the discussants obtained the message about EC for the first time from a displayed poster and the other gained the information from training for female students facilitated by gender club of ACTE on various reproductive health issues.

Besides the role of mass medias, reproductive health clubs and health care providers, the study result indicated that discussion within female friends about sexual matters had significant role in the promotion of modern contraception in general and emergency contraception in particular. Correspondingly, survey findings of studies on post –secondary school female students in Nigeria and university students in Kenya cited that communication with friends was the commonest source of information about EC (33 percent and 17 percent of the respondents respectively) (Aziken et al, 2003 and Muia et al, 2000). And also a study on KAP of EC among urban family planning clients in Honduras indicated that friends/family; television/video and radio were the leading sources of information for the method (Garcia et al, 2006). While a study result among female students of Bahir Dar University reported that television and radio as the most popular first sources of information (26.7 percent) followed by female friends (24.4 percent) (Atsede, 2007). Moreover, contrarily, health institutions were mentioned as the first source of information about EC among post abortion service seeking women in Addis Ababa (40.8 percent) whil followed by friends or relatives (33.9 percent) (Berihanu, 2006).

Table 5.1b Percentage Distribution of Female students of ACTE and ABUC by their First Source of Information about EC, March, 2008

First Source of Information about EC*	Number (n=212)	Percent
Television / Radio	81	38.2
Magazines / Newspapers	45	21.2
Relatives	20	9.4
Internet webpage	2	0.9
From course / formal lecture	2	0.9
Boyfriend / Partner	31	14.6
Female friends	85	40.1
Health care providers	81	38.2
Campus / College clinic	38	17.9
Reproductive health clubs	52	24.5
Parents	13	6.1
Other sources**	4	1.9

* Some respondents have multiple responses ** Others include leaflets and posters

To ascertain the level of female students' knowledge about EC, six knowledge assessment questions on the identification of method types, drug composition, correct timing to be taken after unprotected intercourse, its mechanism of action, its effectiveness and appropriate situation for use were asked for those respondents who have heard about EC. These respective series of questions were adopted from previous similar studies concerning knowledge about EC (Arowojolu & Adekunle, 2000, Aziken et al, 2003, Ameha & Nebreed, 2006, Berhanu, 2006, Atsede, 2007).

To obtain the summarized extent of knowledge of female students of ACTE and ABUC, each knowledge assessment question responses were recoded into the value 1 for correct answers and the value 0 for the incorrect answers in the first place. The respondents' correct responses to the questions were aggregated and ranged from 0 – 6 (0-100 percent) with mean of 0.76 and SD of 1.34. Based on the cumulated correct responses score, the study subjects who have awareness of EC were classified as having poor, fair and good knowledge about EC. Respondents who have no any information about EC or those who scored zero (0 percent) classified as having poor knowledge, those who scored 1–3 (16.7 percent - 50 percent) considered as having fair knowledge and those who scored more than 3(50 percent) classified as having good knowledge about EC (similar approach has been exercised by Berhanu (2006) and Atsede (2007)).

Given a list of seven drugs and traditional practices related with pregnancy prevention, 34.4 percent of respondents who had heard of emergency contraceptives correctly identified combined oral contraceptive pills, 26.9 percent also identified progestin only pills and only 3.8 percent identified IUD as emergency contraceptive methods. As shown in Table 5.1c, 60.8 percent of female students who had heard about EC knew at least one correct method of EC. Furthermore, the listed traditional practices such as bitter medications and home remedies and herbal vaginal passaries were also unexpectedly mentioned as emergency contraception by 6.1 percent and 3.8 percent of respondents respectively.

Similarly, in the focus group discussions among female students different traditional practices and home made remedies were also raised as unintended pregnancy prevention mechanisms. Students of urban background mentioned that "*each 500mg of 20 tablets of Ampicillin with Coca-Cola and a high dose of Quinine tablets*" as the most commonly used home remedies to prevent unintended pregnancy and also those students from rural stated that "*taking a drink prepared from different herbs and inserting unknown objects through the vulva*" as commonly and traditionally practiced attempts of abortion for unwanted pregnancy prevention.

Of the 212 female students who were aware of emergency contraception, about 31.6 percent correctly identified 72 hours as the time limit for the method's use. An additional 18.4 percent and 15.1 percent thought that emergency contraceptives were effective only when used within 24 hours and immediately after sex of unprotected sexual intercourse respectively. Although these responses were within the 72-hour limit, such misinformation might inhibit someone who could still prevent a pregnancy from taking emergency contraceptives because they thought they had missed their "window" of effectiveness (Aziken et al, 2003). The finding also shows that significant number of respondents (32.5 percent) completely did not know the correct time limit for the method's use.

Concerning the correct time for method use, the finding of this study is better than the result obtained in the study among Jimma University students (11.7 percent). Whereas, lower than 49.2 percent found in Addis Ababa among post abortion care service seeking women (Berhanu, 2006) and 35 percent in Bahir Dar University (Astede, 2007). Compared with some other developing nations, the finding is better than 18 percent found in Nigeria among female undergraduates (Aziken et al, 2003) and 13 percent in Kenya among university students (Muia et al, 2000).

In the focus group discussion of female students, all discussants those who had awareness of EC stated the correct timing of method use. No discussant knew the appropriate name of ECs rather they all called it as "*the 72 hour's*". This was ascertained in the interview among the health care providers that their clients also called it similarly.

Regarding the drug composition of EC, majority of the respondents (56.1 percent) mentioned that they did know nothing about the drug composition of ECs. While 13.2 percent of respondents who had heard about EC only correctly cited that it is similar with the regular contraception but in a high dose of the same hormones. About 10.9 percent of respondents also thought that it is completely different from the regular contraception.

Only 27.4 percent of the respondents who had awareness about EC thought that ECs inhibits ovulation and prevent implantation or conception and those 18.4 percent understood as induced abortion. Moreover, 15.6 percent of the respondents cited that ECs are 75 percent effective in preventing pregnancy.

Awareness of the circumstances under which EC might be needed vary among respondents as shown in Table 5.1c. Sexual assault (58 percent) and accidental breakage or slippage of condom (57 percent) were the most cited situations followed by missed pills (43.9 percent), miscalculation in calendar method (25.5 percent) and failure of contraception (17.5 percent) under which EC should be taken to prevent pregnancy.

In the focus group discussion of female students' issues concerning drug composition, mechanism of action, effectiveness, side effects and situations for EC need were also raised.

In the discussion it was observed that there was misunderstanding about the drug composition of ECs that majority of those who had heard about EC thought that it is completely different from the regular contraceptives hormonal composition. With regard to the mechanism of action of ECs four of those heard about EC agreed that it dislodge the embryo after the implantation has been taking place and considered it as an induced abortion. Only one student from ACTE stated that it inhibit ovulation and prevent implantation.

Table 5.1c Percentage Distribution of female students of ACTE and ABUC, who had heard of EC and gave responses to knowledge assessment questions regarding EC, March, 2008

knowledge assessment questions	Number (n=212)	Percent
Which can be used as emergency contraception?*		
Combined oral pills	73	34.4
Progestin only pills/Postinor	57	26.9
Estrogen only pills	32	15.1
IUCD	8	3.8
Herbal Vaginal Passaries	8	3.8
Bitter medications (e.g. Qunine, Lemmon, Potash)	13	6.1
Monthly injectable	20	9.4
I do not know	48	22.6
Know at least one correct method	129	60.8
When should be EC taken after unprotected sexual intercourse?		
Immediately after sex	32	15.1
Within 24 hours after sex	39	18.4
Within 72 hours after sex	67	31.6
Within 4-6 days after sex	5	2.4
I do not know	69	32.5
Drug compositions in ECPs compared to the regular contraceptives		
The same as in the regular contraceptives	42	19.8
The same but a high doss in the same hormones	28	13.2
Completely different from the drug of regular contraceptives	23	10.9
I do not know	119	56.1
The mechanism of action of EC		
Prevent pregnancy from occurring	58	27.4
Induced abortion	39	18.4
Prevent pregnancy and induced abortion	22	10.4
I do not know	93	43.8
Effectiveness of ECPs in preventing pregnancy		
Highly effective (99%)	45	21.2
Three-fourth (75%)	33	15.6
Half (50%)	29	13.7
Below one third (30%)	3	1.4
Uncertain	59	27.8
I do not know	43	20.3
Situation(s) that EC should be taken to prevent unintended pregnancy *		
When forced to have sex	123	58.0
When condom slipped or broken	121	57.1
When there is missed pills	93	43.9
When there is failure of contraception	37	17.5
When there is infrequent sex	21	9.9
When there is miscalculation in calendar method	54	25.5
I do not know	52	24.5
Other**	1	0.5
Know at least two situations	140	66.0
Knowledge of Emergency Contraceptive (Summary index)		
Poor /No/ knowledge	24	11.3
Fair knowledge	152	71.7
Good knowledge	36	17.0

* Some respondents have multiple responses

** Other includes when contraceptive used irregularly.

In relation to its effectiveness, majority of the discussants were in doubt of its effective prevention, while two students, one from ACTE and the other from ABUC explained that it is 50 percent to 75 percent effective to prevent pregnancy if it has been taken in time. Most of the discussants had no information about its side effect but worry about it. Majority of the discussants also agreed about the availability of the method to overcome problems of students under situations like: sexually assaulted, who forgot taking the regular contraception, exposed to accidental sexual intercourse with out any barrier method used, for those miscalculated their safe period and in case of condom slippage.

The overall summary index for knowledge of respondents about EC disclosed that, out of the 212 respondents who had heard about EC, only 17.0 percent had good knowledge and 11.3 percent had no specific knowledge about the method. The remaining 71.7 percent of the respondents were included under the fair knowledge category. This finding reveals that detail knowledge about EC methods is lacking among college female students.

5.2 Attitude towards Emergency Contraception and Willingness for Future Use

Female students of ACTE and ABUC those who had heard about EC were asked four standard questions to assess their opinion and concerns towards EC. The four attitude indicator items were adopted from previous similar studies concerned on attitude towards EC (Arowojolu & Adekunle, 2000, Berhanu, 2006 and Atsede, 2007).

The questions were made to be responded either "Yes", "No" or "Do not know". For positively worded statements (having positive implication for EC use) those who responded "Yes" were considered as having positive attitude and those who responded "No" were categorized to have negative attitude. On the other hand, for negatively worded statements (having negative implication for EC use) those who responded "No" were considered as having positive attitude and those who responded "Yes" were grouped to have negative attitude. In both cases those who responded "Do not know" were included under the category of those having negative attitude. The respondents attitudinal scores were aggregated and ranged 0 – 4 (0 - 100 percent) with mean 0.60 and SD 1.04. Based on the cumulated score, respondents scored 50 percent and above of the total were considered as having 'favorable attitude'; while those scored below 50 percent of the total were considered as having 'unfavorable attitude'(Similar approach has been employed by Atsede, 2007 and Dereje, 2006).

According to the survey findings shown in Table 5.2a, 63.2 percent of the 212 respondents thought that EC may hurt the baby in case it fails to work. It is a finding greater than 53.3 percent found in Bahir Dar University among female students (Atsede, 2007).

In the focus group discussion also most participants voiced about its side effect not only on the baby but also on the mother when it failed to work. Significant number of discussants feared potential long-term side effects that it might cause infertility if used over a long period of time.

> *If it affects my reproductive system, then I do not want to use it* (A student of ABUC).
>
> *In my opinion, in case it failed to prevent the pregnancy, the baby may be born deformed* (A student of ACTE).

Considering the side effects of ECs enlighten in the review of related literature, the responses of some of the participants indicated the impact of rumors on their positive attitude towards ECs.

Majority of the respondents (64.2 percent) approved that EC is necessary to overcome the need for induced abortion and its complications. In contrary, 60.4 percent of the respondents worry about that if men knew the existence of the method, they might impose or encourage women to use it regularly and hence women might be exposed to STDs including HIV/AIDS. Similar concerns about EC also raised in the study about KAP of EC among urban FP clients in Honduras (Garcia et al, 2006).

During the focus group discussion, following a short description of the method by the moderator, most students reacted positively to the concept of EC. The participants immediately perceived a potential benefit of the method for students. They welcomed an alternative to unplanned child bearing or abortion that could result from unprotected sex, and they noted that EC would be ideal for college students, playing a key role in decreasing not only both pregnancies and abortion but also the resulting consequences like drop outs of schooling and the lives end with tragedies.

> *My friend had an accidental intercourse with her classmate when they were studying together and became pregnant. After months later she tried to abort and felt sick for long period and finally she dropped out of her college study for two years....there are also similar tragedies which are yet not told* (A student from ABUC).

While most participants approved the availability of EC at college level, some participants expressed their concerns behind loose access.

> *Some of the youth will not engage in sex because they fear getting pregnant; so they find that there is a way to prevent whatever is taking over this fear. Then they will say, 'I am free' and go on having unprotected sex* (A student from ABUC).

Some of the discussants also felt that EC might encourage unprotected sex and consequently lead to increased exposure to STDs, including HIV.

> *Once male partners know the availability of the method, they may persuade or impose their female partners to use it frequently and may expose them to STDs, even HIV/AIDS* (A student from ACTE).

Moreover, this group of participants worried that the availability of EC might undermine the use of other regular contraceptive methods, including condom. They stressed that all women should be encouraged to use a more regular method of contraception and to rely on EC only when the regular method fails.

As shown in Table 5.2a, far more than half of the respondents (80.2 percent) who heard about EC shown their willingness to use EC or recommend others in case of need in the future. This result is not far less than the study finding (86.1 percent) on female students of Bahir Dar University, while much better than 42.9 percent found in Addis Ababa among post abortion care service seeking women and also 37 percent found in South West Nigeria among post secondary school students (Atsede,2007, Berhanu, 2007 and Arowojolu & Adekunle, 2000).

Table 5.2a Percentage Distribution of Female Students of ACTE and ABUC by Attitude towards EC, March, 2008 (n=212)

Indicators of Attitude		Yes	No	Do not know/ not sure	Total
EC may hurt the baby in case it does not work	№ (%)	134(63.2)	62(29.2)	16(7.6)	212(100)
EC is necessary to prevent abortion and its complications	№ (%)	136(64.2)	68(32.1)	8(3.7)	212(100)
Worry about that if men knew the existence of the method, they might encourage or impose women to use it	№ (%)	128(60.4)	73(34.4)	11(5.2)	212(100)
Willingness to use EC or recommend others in case of need in the future	№ (%)	170(80.2)	33(15.6)	9(4.2)	212(100)
Attitude towards EC (Summary index)					
Favorable		139(65.6)			212(100)
Unfavorable		73(34.4)			

Most of the participants of the focus group discussions accepted the availability of EC particularly for the youth at college level and also willing to use or recommend others in case of method need in the future.

As the overall summarized finding indicated, far more than half (65.6 percent) of the respondents who had ever heard about EC had favorable attitude towards EC.

Table 5.2b ACTE and ABUC Female Students' Willingness to Use EC in the Future, March, 2008

Reasons	Number	Percent
Reasons given by the respondents who were aware of EC and planned to use it in the future (n= 170/80.2%)*		
It is safer than the regular contraceptives	74	43.5
It is more convenient than the regular contraceptives	122	71.8
It is more effective than the regular contraceptives	46	27.1
Other**	5	2.9
Reasons given by the respondents who were aware about EC but do not wish to use it in the future (n=33/15.6%)*		
It is against my religion	11	33.3
It is not effective	4	12.1
It is dangerous to ones health	16	48.5
I am using a regular contraceptive method	9	27.3
My partner does not like it	0	0.0
It causes abortion	2	6.1
Other***	2	6.1
Respondents who have awareness about EC but not sure to use in the future	9	4.2

* Some respondents have multiple responses

** Other includes 'It gives second chance to prevent unwanted pregnancy', 'It is necessary for sexually assaulted women/girls'

*** Other includes 'parents are against it' and 'no plan to have sexual intercourse in the future'

About 80 percent of female students of ACTE and ABUC who had heard about EC would like to use emergency contraceptives in the future, 15.6 percent would not, while 4.2 percent were unsure. The frequency of the reasons given for each desire is shown in Table 5.2b. The commonest reason given by those intending to use ECs in future was that it is more convenient than the regular contraceptives (71.8 percent). On the other hand, the commonest reason (48.5 percent) for those without such intention was that it is dangerous to one's health. These findings agree with findings obtained in South West Nigeria in which similarly convenience of ECs cited by 58.5 percent of the respondents as the main reason for their willingness to future use, while 46.8 percent those having no intention to use cited as best reason as it is dangerous to one's health (Arowojolu & Adekunle, 2000).

5.3 Emergency Contraceptive Practices among ACTE and ABUC Female Students

In order to assess the regular and appropriate utilization of barrier methods among female college students, those sexually active respondents were asked about their experience of failure to use condom or any other contraceptive method during sexual intercourse. Out of all 229 sexually experienced respondents 176 (76.9 percent) reported that they ever had sexual intercourse without using condom or any contraceptive method. Of those 158 sexually experienced female students who had ever heard of EC 74.1 percent also responded similarly that they ever had sexual intercourse without any barrier method. This is an overwhelming result which signifies how greatly the college students are exposed of unintended pregnancy as well as STDs including HIV/AIDS. Furthermore, it indicates that sexual relationship among youths is usually unplanned and it tends to occur during unstable relationships as also stated by Arowojolu & Adekunle (2000).

Concerning the utilization of ECs in case of method need, those who had ever heard about EC and sexually experienced respondents were asked whether they ever used EC or not. Only 11(about 7 percent) female students ever used EC to prevent unplanned pregnancy. Four are from the age group 15 – 19, more than half (six) from 20 – 24 and the remaining one from 25 and above. In relation to their previous residence, ten of them (90.9 percent) were from urban and only one had rural background.

Not using any contraceptive method (54.5 percent), miscalculation in using calendar method (27.3 percent) and forced to have sex (18.2 percent) were the reasons for using EC raised by ever user respondents. The health care providers in the in-depth interview also assured that not using any contraceptive method was the main reason for those who requested EC service.

54.5 percent of the ever users recommended by their partners or boyfriends and 45.5 percent by their female friends. Reproductive health clinics (45.5 percent) and public hospitals (27.3 percent) were the most commonly cited sources of EC by ever user respondents.

In the focus group discussions among female students, several students claimed that they preferred to buy their contraception from a pharmacy rather than face disapproval at the reproductive health and public health clinics, where contraception is free.

Of those 165 respondents having an experience of sexual intercourse without using any barrier method and never used EC, 73 (44.2 percent) ever had unintended pregnancy which might be

terminated by induced abortion or resulted unwanted live births. More over, out of 106 respondents who had EC awareness but ever had an experience of sexual intercourse without using condom or any contraceptive, 48 (45.3 percent) ever had unplanned pregnancy too. This finding also suggests that significant number of female college students were highly exposed to unintended pregnancy which paves the way to an induced abortion and its complications.

CHAPTER SIX

DETERMINANTS OF AWARENESS AND ATTITUDE TOWARDS EMERGENCY CONTRACEPTIVE (Multivariate Analysis)

6.1 Determinant Factors of Awareness of Emergency Contraceptives

The gross effect of each of the socio-demographic and other variables was explained by the crude odds ratio resulted after each individual variable has been fitted in the binary logistic regression with out controlling all the other variables.

Besides, to assess the relative net effect of each of the predictor variable on the out come variable controlling the others, the logistic regression model has been employed to reveal the direction of the statistically significant association between the independent variables and the dependent variable, awareness of EC.

To validate the binary logistic regression model assumptions, the dependent variable was dichotomous and have been coded the dependent category of greatest interest (ever heard about EC) as 1 and the other category (those who never heard about EC) as 0. And also those categorical independent variables were coded meaningfully. All important variables were included so that the error term might not be inflated and any unimportant variable was not included in the model. The variable ever use of contraception, which was highly correlated with sexual experience (R= 0.900), was not included in the model to overcome the multicollinearity effect. In addition, the variables life time number of sexual partners and ever had induced abortion were excluded from the net effect testing model because of few number of cases. Further more, the multicollinearity effect among the included variables was tested and the variance inflation factor (VIF) was found to be far less than the cut off value (five). Except for five of the categorical covariates the first group for each categorical variable has been selected as reference category, overriding the default because reference group should have reasonable number of observation. The Hosmer and Lemeshow goodness-of-fit test insignificance (P greater than 0.05) assured that the model adequately fit the data. Finally, both the gross and net effect tests indicated that the variables age, previous place of residence, year of study, exposure to FP information, sexual experience, and discussion about RH issues among partners and peers found to be the

statistically determinant factors of awareness of EC among female students of the to selected colleges. Table 6.1 shows the over all summarized out come of the analysis.

Age: As it is shown in Table 6.1 age of respondents was found to be statistically significant factor for EC awareness. According to the multivariate analysis result the likelihood of EC awareness increased as the age of the study subjects increased. Respondents of the age group 20-24 were found 1.92 times more likely to be aware of EC relatively compared with the lower age group (15-19). Similarly those in the age group of 25 and above were found 4.034 times more likely to be aware of EC. Similar finding also cited by Atsede (2007), that EC awareness increases as age of the respondents increase. A study on knowledge and attitude about EC in a military population of the United States Air Force revealed that older age (over 21 years) correlated with better knowledge about EC (Van Royen, 2000).

This finding verified the first hypothesis that female students' awareness towards EC increases with an increase in their age.

Previous Place of Residence: Respondents who resided in the rural prior to their entry to the colleges were negatively associated with EC awareness. The likelihood of EC awareness among respondents of rural background was less by 74.5 percent relatively compared with those from urban (OR = 0.255, P < 0.001). This out put assured the fifth hypothesis that; female students having urban background are more likely to be aware of EC than their counter parts.

Religion: The crude odds ratio result indicated that respondents following the Orthodox Christian religion were found to be 1.72 times more likely to be aware of EC than those who follow Protestant Church. While it's net effect was found to be insignificant.

Religiosity: The crude odds ratio revealed that religiosity has a significant effect on awareness of EC with out controlling the other variables. The odds of awareness of EC among respondents attending religious institutions some times were 2.44 times for those who attend regularly. While the net effect of religiosity was found insignificant.

Marital Status: Marital status was found to be statistically significant factor of awareness of EC among female students with out controlling other variables. Ever married female students were found to be 6.67 times more likely to be aware of EC than those who never married. Whereas the net effect of religiosity on awareness of EC was found insignificant when the other variables controlled. A consistent finding also cited in the study about knowledge and attitude of military

population of the US Air Force as marital status had a statistically significant association with awareness of EC (Van Royen, 2000).

Table 6.1 The Socio-Demographic and Other Determinant Variables of Awareness of EC among Female Students of ACTE and ABUC, March, 2008 (n = 596)

Predictor variables	Gross Effect		Net Effect (Model)	
	SE	Exp(B)	SE	Exp(B)
Age (years)				
15-19 (RC)		1.000		1.000
20-24	0.198	6.065***	0.322	1.920*
25+	0.454	18.132***	0.673	4.034*
Previous Place of Residence				
Urban (RC)		1.000		1.000
Rural	0.225	0.189***	0.334	0.255***
Religion				
Protestant (RC)		1.000		1.000
Orthodox Christian	0.185	1.723**	0.293	1.218
Others♣	0.281	0.703	0.435	1.351
Religiosity				
Attending Regularly (RC) @		1.000		1.000
Attending Some times	0.275	2.438***	0.442	0.809
Marital status				
Never Married (RC)		1.000		1.000
Ever Married	0.272	6.666***	0.474	2.358
Year of Study				
First Year (RC)		1.000		1.000
Second Year	0.223	4.672***	0.321	2.292**
Third Year	0.231	7.376***	0.391	6.295***
Exposure to FP methods information				
Yes (RC)		1.000		1.000
No	0.304	0.069***	0.370	0.255***
Sexual Experience				
Ever had sexual intercourse	0.205	12.899***	0.372	7.345***
Never had sexual intercourse (RC)		1.000		1.000
Number of life time sexual partners				
One (RC)		1.000		
Multiple	0.323	0.735		
Do not remember/know	0.669	0.257	NI	NI
Ever used contraception (n=229)				
Yes	0.205	11.889***		
No (RC)		1.000	NI	NI
Ever been pregnant (n=229)				
Yes	0.223	4.985***	0.437	0.297**
No (RC)		1.000		1.000
Ever had induced abortion (n=113)				
Yes	0.340	5.261***		
No (RC)		1.000	NI	NI

Table 6.1 Continued				
Respondents' fathers level of education (n = 535)				
Literate (RC) ⌖		1.000		1.000
Illiterate	0.232	0.734	0.424	0.965
Respondents' mothers level of education (n= 557)				
Literate (RC)		1.000		1.000
Illiterate	0.206	0.548**	0.380	0.685
Discussion about reproductive health issues with father (n = 535)				
Yes	0.185	1.384	0.294	0.963
No (RC)		1.000		1.000
Discussion about reproductive health issues with mother (n= 557)				
Yes (RC)		1.000		1.000
No	0.209	0.374***	0.334	0.575
Discussion about reproductive health issues with boyfriend /husband				
Yes	0.199	9.944***	0.284	2.158**
No (RC)		1.000		1.000
Discussion about reproductive health issues with peers				
Yes (RC)		1.000		1.000
No	0.306	0.137***	0.409	0.288**

*** Significant at P < 0.001 ** Significant at P<0.01 *Significant at P< 0.05

RC= Reference Category NI= Not included ♣Others include Muslim and Catholic religions.
@ Once in a week, 2-6 days in a week and daily ⌖ Primary and above

Year of study: Year of study in the multivariate analysis was found to be a significant factor affecting awareness of EC among female post-secondary students. The number of years that respondents stayed in the colleges was positively associated with EC awareness such that the likelihood of EC awareness increased as year of study increased. Respondents who were in their second year of study were found 2.29 times more likely to be aware of EC. Likewise, female students who were in their third year of study were also found 6.30 times more likely to be aware of EC. This finding also ascertained the first hypothesis that female students awareness about EC increases with an increase in their level of education (year of study).

Exposure to FP methods information: Exposure to FP methods information was found to be a significant factor associated with awareness of EC and had a positive relationship. As the analysis result indicated, the likelihood of EC awareness among respondents of those who had never heard or seen information about FP methods was less by 74.5 percent as relatively compared with those who exposed to FP messages controlling the other variables (OR = 0.255, P

< 0.001). This finding ascertained the fourth hypothesis that female students those who exposed to different media are more likely to be aware about EC.

Sexual intercourse experience: The multivariate analysis also ascertained sexual intercourse experience of respondents as a statistically significant affecting factor of awareness of EC. As the result indicated, being ever sexually experienced had a positive effect on the likelihood of awareness of EC as compared with being never sexually experienced. Female students who ever had sexual intercourse were found 7.35 times more likely to be aware of EC than their counter parts. This finding is consistent with the result obtained in the study about knowledge and attitude towards EC among teenagers in the United States that teenaged girls who are sexually experienced were more likely to have heard of ECPs than other teenaged girls (Delbanco et al, 1998).

This out put assured the second hypothesis that sexually active female post- secondary students are more likely to be aware of EC than those who are not.

Ever use of contraception: Regular contraceptives experience of students found to be a highly significant factor of awareness of EC when the other variables were not controlled. Respondents those who had ever used the regular contraceptives were found to be 11.89 times more likely to be aware of EC than those who had no experience of contraceptives.

History of pregnancy: The crude odds ratio indicated that experience of pregnancy has a statistically significant positive effect on the awareness of EC among female students while the net odds ratio explained its negative association.

History of induced abortion: Experience of induced abortion was found to be highly significant factor of awareness of EC when all the other variables were not controlled. Female students who had an experience of induced abortion were 5.26 times more likely to be aware of EC than their counter parts.

Respondents' mothers level of education: The analysis result showed that respondents' mothers level of education has a significant gross effect on awareness of EC (OR=0.848, P<0.01). While the other variables controlled, it was found to be insignificant factor of awareness of EC.

Discussion about reproductive health issues with mother: There was also a statistically significant association between discussion with mothers about sexual matters and awareness of

EC without controlling the other variables. According to the analysis out come of the crude odds ratio, lack of experience of communication with mothers about sexual issues had a negative impact on EC awareness. As shown in Table 6.1, the likelihood of awareness of EC among respondents who had no experience of communicating with their respective mother was lower by 62.6 percent as compared with those who had experience of discussion about reproductive health issues with their mothers (OR = 0.374, P < 0.001). Whereas when the other variables controlled, its net effect was found to be insignificant.

Discussion about reproductive health issues with boyfriend/husband: The multivariate analysis in both gross and net effect tests assured that partner communication about reproductive health matters had a statistically significant impact on awareness towards EC. As the result shown in Table 6.1, experience of discussion with husband or boyfriend had a positive effect on EC awareness. Female college students who ever had an experience of communicating with their boyfriends or husbands on the issue of sexual matters were found 2.16 times more likely to be aware of EC than their counter parts. The third hypothesis that female students who had an experience of discussion with their partner (boyfriend or husband) are more likely to be aware about EC was also ascertained with this finding.

Discussion about reproductive health issues with peers: In this study peer communication on sexual and related matters was found to be one of the significant determinant factors of EC awareness. The out come of the analysis in Table 6.1 revealed that lack of experience of communication with friends about sexual issues had a negative impact on EC awareness. The likelihood of awareness of EC among respondents who had no experience of communicating with their respective partner was less by 71.2 percent as compared with those who had experience of discussion about reproductive health issues with their boyfriends or husbands (OR= 0.288, P < 0.01). This out put also verified the third hypothesis that those female students who had an experience of communication with their friends (peers) about reproductive health issues are more likely to be aware about EC than their counter parts.

6.2 Determinant Factors of Attitude towards EC

As in the analysis about EC awareness, the multivariate analysis had been similarly employed in order to describe both the gross and net effect of each of the predictor variable on the attitude of female students towards EC and also to describe the direction of relationship too.

Similarly the necessary assumptions which validate the model have been fulfilled and the same procedure also followed in the multivariate analysis regarding attitude towards EC. The dependent variable, attitude towards EC, was dichotomous and have been coded the dependent category of greatest interest (favorable attitude) as 1 and the counter category (unfavorable attitude) as 0. The variable ever use of contraception, which was highly correlated with sexual experience (R= 0.842), was not included in the model to overcome the multicollinearity effect. In addition, the variables life time number of sexual partners and ever had induced abortion were excluded from the net effect testing model because of few number of cases. Further more, the multicollinearity effect among the included variables was tested and the variance inflation factor (VIF) was found to be far less than the cut off value (five). Except for five of the categorical covariates the first group for each categorical variable has been selected as reference category, overriding the default because reference group should have reasonable number of observation. The Hosmer and Lemeshow goodness- of-fit test significance (P greater than 0.05) also assured that the model adequately fit the data. The predictor variables religion, sexual experience, intention to use modern contraceptives in the future and the extent of knowledge of EC were found to be the statistically significant factor of the attitude towards EC among female students of ACTE and ABUC. Table 6.2 shows the summarized result of the logistic regression model.

Religion: In the multivariate analysis religion was found to be the statistically significant factor of attitude towards EC. As the result shown in Table 6.2, following the Orthodox Christian religion has both gross and net effect on the favorable attitude towards EC while following Catholic and Muslim religions had only the net effect. Female students following Orthodox Christian religion were found to be 2.41 times more likely to have favorable attitude towards EC than those who follow the Protestant religion. Respondents who follow the Catholic and Muslim religions were found to be 6.58 times more likely to have favorable attitude towards EC than those who follow Protestant religion.

Marital status: The analysis result indicated that marital status has a significant gross effect on the favorable attitude towards EC. The ever married respondents were found to be 2.02 times more likely to have favorable attitude towards EC as compared with the never married one without controlling the other variables. While the other variables controlled, it was found to be insignificant factor of the attitude towards EC.

Table 6.2 The Socio-Demographic and Other Determinant Variables of Attitude towards EC among Female Students of ACTE and ABUC, March, 2008 (n = 596)

Predictor variables	Gross Effect		Net Effect (Model)	
	SE	Exp(B)	SE	Exp(B)
***Age** (years)*				
15-19 (RC)		1.000		1.000
20-24	0.337	1.401	0.569	0.535
25+	0.514	1.440	0.826	0.403
Previous Place of Residence				
Urban (RC)		1.000		1.000
Rural	0.408	0.708	0.547	0.788
Religion				
Protestant (RC)		1.000		1.000
Orthodox Christian	0.307	1.866*	0.432	2.411*
Others♣	0.527	1.840	0.778	6.584*
Religiosity				
Attending Regularly (RC)@		1.000		1.000
Attending Some times	0.453	2.169	0.573	1.380
Marital status				
Never Married (RC)		1.000		1.000
Ever Married	0.348	2.017*	0.601	0.936
Year of Study				
First Year	0.348	0.924	0.549	0.951
Second Year	0.353	1.393	0.480	2.127
Third Year (RC)		1.000		1.000
Exposure to FP methods information				
Yes (RC)		1.000		1.000
No	0.590	0.303*	0.804	1.027
Sexual Experience				
Ever had sexual intercourse (RC)		1.000		1.000
Never had sexual intercourse	0.334	0.216***	0.564	0.286*
Number of life time sexual partners				
One (RC)		1.000		
Multiple	0.416	0.858		
Do not remember/know	1.175	0.997	NI	NI
Ever used contraception (n=229)				
Yes (RC)		1.000		
No	0.319	0.178***	NI	NI
Ever been pregnant (n=229)				
Yes	0.331	2.627**	0.563	1.824
No (RC)		1.000		1.000
Ever had induced abortion (n=113)				
Yes	0.555	4.548**		
No (RC)		1.000	NI	NI
Respondents' fathers level of education (n = 535)				
Literate (RC) ⌖		1.000		1.000
Illiterate	0.388	0.611	0.572	0.585

Table 6.2 Continued				
Respondents' mothers level of education (n= 557)				
Literate (RC) ⌖		1.000		1.000
Illiterate	0.354	0.737	0.543	0.671
Discussion about reproductive health issues with father (n = 535)				
Yes	0.301	1.335	0.419	1.584
No (RC)		1.000		1.000
Discussion about reproductive health issues with mother (n= 557)				
Yes (RC)		1.000		1.000
No	0.343	0.409**	0.484	0.408
Discussion about reproductive health issues with boyfriend /husband				
Yes (RC)		1.000		1.000
No	0.327	0.352***	0.480	0.822
Discussion about reproductive health issues with peers				
Yes (RC)		1.000		1.000
No	0.676	0.139**	0.849	0.469
Intention to use modern contraception in the future				
Yes (RC)		1.000		1.000
No	0.503	0.227**	0.649	0.272*
Knowledge towards EC				
Poor/No knowledge	0.502	0.168***	0.634	0.194**
Fair knowledge (RC)		1.000		1.000
Good knowledge	0.557	4.040*	0.653	4.024*

*** Significant at P < 0.001 ** Significant at P < 0.01 *P Significant at < 0.05

RC= Reference Category NI= Not included ♣Others include Muslim and Catholic religions.

@ Once in a week, 2-6 days in a week and daily ⌖ Primary and above

Exposure to FP methods information: Exposure to FP methods information was found to be a significant factor associated with favorable attitude towards EC when the other variables were not controlled (OR = 0.303, P < 0.05). While other variables were controlled, it has insignificant net effect on the favorable attitude towards EC.

Sexual experience: The multivariate analysis odds ratios for both gross and net effect tests explained sexual experience of respondents to be statistically determinant factor of attitude towards EC. According to the result shown in Table 6.2, being not sexually experienced had a negative impact on the likelihood of favorable attitude towards EC. The likelihood of favorable attitude towards EC among those female students who never had sexual intercourse was less by 71.4 percent as compared with their counter parts (OR= 0.286, P < 0.05). This finding ascertained

the second hypothesis that sexually active female post- secondary students are more likely to intend to use EC than those who are not.

Ever use of contraception: Regular contraceptives experience of female students found to be a highly significant factor of attitude towards EC when the other variables were not controlled. The likely hood of favorable attitude towards EC among the respondents those who had never used the regular contraceptives were less by 82.2 percent as compared with those who had an experience of contraceptives without controlling the other variables.

History of pregnancy: The gross effect of experience of pregnancy was found to be statistically significant when the other variables were not controlled. The odds of favorable attitude towards EC among the respondents who had an experience of pregnancy was found to be 2.63 times those who had no the experience. Whereas, controlling the other variables, the net effect of experience of pregnancy was found to be insignificant.

History of induced abortion: The experience of induced abortion among the respondents has a significant gross effect on the favorable attitude of female students towards EC. Without controlling other variables, the odds of favorable attitude towards EC among those respondents who had an experience of induced abortion were found to be 4.55 times their counter parts.

Discussion about reproductive health issues with mother: The multivariate analysis gross effect test also indicated that the likelihood of attitude towards EC was statistically associated with discussion with mothers about reproductive health issues. As the result shown in Table 6.2, lack of experience of communication with mother on the issues of sexual matters had negative effect on the favorable attitude of students towards EC. The likelihood of favorable attitude towards EC among respondents who had no experience of discussion with their respective mothers were found less by 59.1 percent as relatively compared with their counter parts without controlling the other variables (OR= 0.409, $P < 0.01$). While other variables controlled, the net effect of experience of communication with mother about sexuality issues was found to be insignificant.

Discussion about reproductive health issues with boyfriend/husband: The experience of communication on sexuality matters with boyfriend or husband was found to have a statistically significant gross effect on the favorable attitude towards EC among female students of ACTE and ABUC. Controlling all the other variables, the odds of respondents who had no experience of

discussion with sexual partner was less by 64.8 percent than their counter parts (OR= 0.352, P< 0.001). Whereas, as all the other variables were controlled, its net effect has been found statistically insignificant.

Discussion about reproductive health issues with peers: Respondents experience of communication with peers on the RH issues was also found to have a significant association with the favorable attitude towards EC when all the other variables were not controlled. Without controlling all the other variables, the odds of female students who had no experience of discussion about RH matters with their peers was less by 86.1 percent than their counter parts (OR= 0.139, P < 0.01). Whereas, it has no significant net effect on attitude of respondents as all the other variables were controlled.

Intention to use modern contraception in the future: Intention to use regular contraception in the future was also found to be another determinant factor affecting attitude of respondents towards EC in both the gross and net effect tests. As it is shown in the multivariate analysis lack of intention to use modern contraceptives in the future has an indirect impact on favorable attitude towards EC. As it is shown in Table 6.2, the likelihood of favorable attitude towards EC among respondents who have no intention to use modern contraceptives was less by 72.8 percent as relatively compared with those who have plan to use regular contraception in the future when all the other variables were controlled (OR= 0.272, P < 0.05).

Knowledge towards EC: The multivariate analysis also disclosed that the extent of knowledge of respondents towards EC was a statistically significant factor for favorable attitude towards EC and had a positive relation. The result in both the gross and net effect tests showed that the likelihood of favorable attitude increased as the extent of Knowledge of EC increased. Controlling all the other variables, respondents who had good knowledge of EC were found 4.024 times more likely to have favorable attitude towards EC as compared with those who had fair knowledge of EC. Correspondingly, the likelihood to have favorable attitude towards EC among those who had poor knowledge of EC was less by 80.6 percent as compared with those who had fair knowledge of EC (OR= 0.194, P < 0.01). This out come verified the sixth hypothesis that the better the knowledge of EC associated with the better the positive attitude towards EC among female students.

6.5 Male Students Perspective towards EC

The power dynamics in relationship and pressure to have sex may be associated with a woman's decision to use emergency contraception. Women with partners who had a strong desire to avoid pregnancy and those in a relationship in which the male partner dominated decision-making were more likely to use EC than their counter parts (Tamkins, 2004). Thus, it is essential to consider males awareness and attitude towards the method when studying about females' perspective towards modern contraceptives in general and ECs in particular.

To enrich the findings of this study on female students, the male students' awareness and attitude towards EC have been assessed through focus group discussions conducted at each of the selected sample colleges on March 2008. Each focus group discussion consisted of eight participants from different field and year of study selected randomly and the guiding issues were classified as concerning premarital sex, contraception practices, prevention of unintended pregnancy, and the knowledge and attitude towards EC.

Majority of the discussants explained that premarital sex among college students was prevalent whereas their attention to prevent unintended pregnancy as well as STDs including HIV/AIDS was very less. Accidental sexual intercourse was very common as stated by most of the participants and some of them also added that multiple sexual intercourses among students were also significant.

> *For the fact that students are living out of campus, for the purpose of study either female or male student is invited to one's room and exposed to accidental sex which is a common story heard particularly from male students* (A student from ABUC).
>
> *I knew that my two male classmates who had sexual intercourse with number of female college students who were talking to their friends as an adventure* (A student of ACTE).

The focus group discussion revealed that half of the participants (five from ACTE and three from ABUC) had heard of EC while the remaining students were completely unaware of the method. Most of the students who aware of EC mentioned friends and the medias as their primary source of information about the method. Two students had heard of the method through youth counseling service of FGAE Awassa branch.

Few students (n=2) believed that EC can be taken no later than the day after intercourse and one student thought that EC acted primarily as a spermicide, stating " *it is a family planning pill taken just before sexual intercourse. I guess it kills sperms in one way or another.*" Some other students

also mentioned that it is a form of contraception taken after intercourse and considered the method as an "*act of abortion*". Only two participants said that it must be taken within 72 hours after intercourse to inhibit ovulation and prevent implantation. As it was observed among female students, the focus group discussion ascertained that detail knowledge of EC among male students was also very less.

Most of the discussants approved the availability of the method and valued the potential benefit of the method for students in particular. The students talked freely about the risk of unprotected sex among college students and noted that EC would be crucial for them, playing a significant role in reducing unintended pregnancy as well as induced abortion among female students. Some of the participants also agreed that this method would be highly beneficial to many married students who do not want children while they gave focal attention on their studies. As one student emphasized, EC would help to prevent not only unwanted pregnancies, but other dire consequences:

> *It would give to girls who would have to drop out of their college study, a second chance in life.* (A student from ABUC)

As female students expressed their concern about EC, male students also concerned with similar issues. Few students worried about its side effects and stated that young women should not use any form of hormonal contraception, as they believed it could cause infertility. Two students expressed that the availability of EC would encourage promiscuity among girls in colleges as well as secondary schools who are not engaged in sex because of fear of getting pregnant. While another student countered that since other forms of barriers are readily available, EC will not encourage promiscuity.

> *If it is a matter of increasing immorality, the availability of condoms is enough to increase it.*

Some other discussants also felt that frequent use of EC might weaken the interest of youths on other regular methods, including condom and might encourage unprotected sex and as a result lead to increased exposure to STDs in general and HIV/AIDS in particular. Furthermore, other participants also stated that the availability of EC might insist men to convince or impose female partners to use EC than the other barriers, which also increased exposure to STDs, including HIV. A question about method failure was raised as one of the concerns of male students during

the discussion. Majority of the students thought that it might hurt either the fetus or the mother in one way or another. Some of the participants also felt that it might cause abortion.

Almost all the participants approved the method availability and showed their willingness to use EC or recommend others in case of need in the future. They all stressed that women, especially female college students should be encouraged to use the regular methods of contraception and to rely on EC only when the regular method fails or sexual assaults occur. Moreover, they recommended that the service of FP methods in general and ECs in particular should be available in the colleges' clinics.

6.6 Health Care Providers Perspectives towards EC

As described in the review of related literature, heath care providers require to counsel adolescents about ECPs during visits to health care facilities. Counseling about EC should include: description of the methods, mechanism of action, indication for use, efficacy, safety ,common side effects, time limit for use, where and how to obtain the method and also information about other effective methods of contraception (ICEC, 2004). Since the health care providers play a pivotal role in disseminating information about new reproductive technologies and providing family planning methods, conducting a survey to asses their knowledge and attitude regarding EC is significant to define the best strategies and programs to improve access and utilization to this method (Galvao,et al, 1999).

In this study key informants interview had been conducted among the health care providers of the selected three MCH/FP service outlets in the town and ACTE clinic to asses their attitude towards EC. Two from each MCH/FP service outlets (FGAE clinic, Marie Stops clinic and Awassa health center) and one health care provider from ACTE clinic were participants for the key informants' interview. The interview had two parts: the first part concerned with the knowledge and attitude of the individual health care provider while the second part focused on provision of EC in their respective institution.

All the participants from MCH/FP outlets were working on family planning. The participant from ACTE clinic did not work on FP because FP service is not included in the duty list of the clinic as one of its purpose. Though FP service was not part of college clinic service, the clinic nurse was trying to distribute condoms and EC with her own initiative in collaboration with FGAE clinic of Awassa branch.

> *Because of that I observed students who terminated their college study due to pregnancy which may end with live birth or an induced abortion, the number of students who require counseling in relation with sexual matters and believing that the service is necessary at college level, I initiated and made contact with FGAE clinic and began distributing condom and EC.* (ACTE clinic nurse)

Although most providers knew the concept, Levonorgestrel-only (Postinor-II) was the most commonly mentioned EC regimen among some of the participants (n=3). Most lack comprehensive knowledge on the different methods available and their regimen. Majority of the participants also stated that they often provide by cutting the regular contraceptive pills as EC.

All the participants explained the appropriate time for method use and majority (n = 5) stated that it is effective if it has taken within 72 hours after unprotected intercourse. Respondents from FGAE, Marie Stops and ACTE clinics ascertained that there was no complain of failure of the method among those clients who used EC so far. Majority of the respondents described that the mechanism of action of EC is hormonal which disturbs the uterus to prevent the beginning of implantation and the appropriate situation to take EC.

Most of the participants revealed that it had no serious side effects on the embryo when it failed to prevent the pregnancy or taken late. With regard to ECs role towards reduction of maternal mortality caused by induced abortion, significant number of participants explained that it can reduce if it has been taken appropriately. Some others were not sure about its role except one respondent who did not think that ECs reduce maternal mortalities due to abortion.

> *Now a day the youth are observed to lie on ECs and refuse to use condom and other contraceptives. Due to this fact it exacerbate the transmission of STDs specially the current challenge of the world HIV/AIDS and in my opinion rather reducing maternal death it may increase the death due to HIV/AIDS* (FGAE clinic nurse).

The MCH/FP outlets and the college clinic except Awassa health center have enough supply of EC pills as learned from response of the care providers. Levonorgestrel-only regimen was the most commonly used method type in the institutions and those midwife and clinical nurses were providing the method for those who need EC service. The service is provided through out the working days in the week in each of the clinics while considering the time sensitive nature of EC the FGAE clinic providing the method even by the week end through their youth counseling center. Most of the participants had no in-service training about EC regimens and did not know that EC is part of the FP method mix they provide and they did not know any service guideline on EC and also their colleagues too.

With regard to their clients knowledge towards EC the respondents explained that most of the clients were lacking the adequate information about EC particularly its appropriate situation to be taken, side effect, the consequence of its frequent use and also the correct time to be taken. Majority of the clients were unmarried youths of age 15–30 and some times those married adults requested the method. According to the response of the care providers not using any barrier method to prevent pregnancy was the most commonly mentioned situation by their clients which led them to seek EC service and accidental sex, forgetting taking oral contraceptive pills, condom slippage and forced sex were also of the mentioned circumstances.

The participants noted that as the awareness of availability of EC among the society was limited the number of clients who sought EC service was not as significant as those who required abortion service.

> *Lacking information about the availability of EC, number of the clients who require EC are very few as compared with those who seek abortion service in each day* (Marie Stop's nurse).
>
> *These days the number of clients who seek EC service is moderately increasing; particularly the male youth number and more clients request a day after a holyday. In the past years the number of clients was 5-8 per month while currently 10 -15 both male and female students, non-student youths and some times married women clients appear seeking EC service* (FGAE's nurse).
>
> *With the exception of few students who want to use EC frequently as a regular contraceptive, the numbers of students who require EC service are not more than 5 per year* (ACTE's nurse).

Some of the respondents were giving counseling for clients those who sought EC and the rest providing the service only. The institutions also had no continuous education and promotion program about EC in the society and particularly at college and university levels. ACTE's nurse explained that information was given for those female students who participated the training on reproductive health issues facilitated by the college gender club as a trial of promotion of EC.

However almost all the participants worried about the exacerbation of transmission of STDs particularly HIV/AIDS due to frequent use of EC; they all agreed that an extensive awareness creating education about EC should be practiced by the responsible governmental and non-governmental organizations including their institutions in order to reduce unintended pregnancy and its consequences. Moreover most of them suggested that the service should be expanded within public and private health centers and also at colleges and university clinics too.

In general the key informants' interview confirmed that awareness of the concept of EC was virtually universal among the participants. However, the extent of knowledge and attitude towards EC among the health care providers vary individually. Those who had training were better in their knowledge of EC methods than those who had no training. Majority of them had also a positive attitude towards EC and the enhancement of the service. Although all the participants stressed on the society in general and the youths in particular, should be encouraged to practice the regular contraceptives including condom rather than frequently using EC.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMENDATIONS

7.1 Summary of the Main Findings

Although EC is not recommended as routine family planning method, it plays a vital role in preventing unwanted pregnancies after unplanned or unprotected sexual intercourse and would serve as a back up to other family planning methods.

Post- secondary school students form an important high-risk group for unplanned pregnancy. It has been revealed from previous studies that increased adolescent premarital sexuality would be responsible for increased number of unwanted pregnancies and subsequent illegal abortion with its consequence (Arowojolu & Adekunle, 2000).

In this study, out of the total 596 female college students 38.4 percent of them ever had sexual intercourse with mean age 18.24 and median 18 at their first intercourse. 28.0 percent began sexual intercourse before age 18, 53.7 percent at age 18 and above and the rest did not remember or know the actual age at their first sexual intercourse. Consequently, 69 percent of the respondents had single partner and the rest had multiple partners during the study time. This findings of the study explained that premarital sex among the female college students is prevalent and significant number of students also exposed to sex at early ages even with multiple partners.

Out of the total respondents who ever had sexual experience 83.7 percent had ever used one of the contraceptive methods and also mentioned condoms as the most commonly used method. 49.3 percent of those sexually experienced respondents ever had pregnancy and the majority (69.9 percent) reported that their pregnancy was unplanned and 58.2 percent end with induced abortion.

According to the survey findings of this study, only 35.6 percent of the whole respondents heard about EC of which the majorities (63.7 percent) were in the age group 20-24. This is far less than the figures for some developing nations, 75.7 percent among South West Nigerian post-secondary school female students and 50 percent among the Kenyan female and male university students (Arowojolu & Adekunle, 2000 & Muia et al, 2000). In the survey as well as the focus group discussion, female friends (40.1 percent) were mentioned as their main first source of information about EC followed by Television/radio and health care providers (each 38.2 percent).

60.8 percent of female students who had ever heard about EC knew at least one correct method of EC while unexpectedly traditional practices and the home remedies were also mentioned as emergency contraception. Only 31.6 percent of the respondents correctly identified 72 hours as the time limit for the method use whereas 32.5 percent did not know completely. Around 36 percent of those who heard about EC were misinformed that EC were effective only when taken within 24 hours of unprotected sexual intercourse and immediately after sex which might inhibit some one who could still prevent pregnancy from taking ECs.

Only 13.2 percent of respondents who had heard about EC correctly cited that the drug composition of ECs is similar with the regular contraception but in a high dose of the same hormones. Merely 27.4 percent of the respondents who had awareness about EC thought that ECs inhibit ovulation and prevent implantation/ conception and those 18.4 percent understood it as a form of induced abortion. ECs were considered similarly as an act of abortificient in the focus group discussion

Furthermore, only 15.6 percent of the respondents who ever heard about EC stated that ECs are 75 percent effective in preventing pregnancy. Sexual assault (58 percent) and accidental breakage or slippage of condom (57 percent) were the most repeatedly mentioned indications for method use followed by missed pills (43.9 percent), miscalculation in calendar method (25.5 percent) and failure of contraception (17.5 percent).

The findings of this study revealed that detail knowledge of EC methods is lacking among female college students as observed from their responses during the survey and the focus group discussion about correct method of EC, correct time for method use, mechanism of action, effectiveness, drug composition and indications for the use of ECs.

Even though the extent of specific knowledge of EC among female students of ACTE and ABUC was found at lower level, the vast majority (80.2 percent) of the respondents had been shown their willingness to use the method or recommend others in case of need in the future. 64.2 percent of the respondents also approved that EC is necessary to overcome the need for induced abortion and its complications too. Similar intentions were also observed in the focus group discussions. In contrary, 60.4 percent of the respondents worry about that if men knew the existence of the method, they might impose or persuade women to use it regularly and might expose women to STDs including HIV/AIDS. 63.2 percent of the students also expressed their

fear that EC may hurt the baby in case it fails to work. In addition to these concerns, frequent use of EC and its consequences were raised among the focus group discussion participants.

Despite the prevailing concerns about EC, majority (65.6 percent) of the students who ever heard about EC had favorable attitude towards EC.

The findings of this study revealed that the utilization of EC was too limited (4.8 percent) as compared with the number of unintended pregnancies (34.5 percent) as well as induced abortions (20.1 percent) occurred among sexually experienced female students.

The study out put of the gross effect test ascertained that awareness about EC was significantly associated with the variables age, previous place of residence, religion, religiosity, marital status, year of study, exposure to FP methods information, sexual experience, ever use of contraception, history of pregnancy and induced abortion, respondents' mothers level of education, discussion about reproductive health issues with mother, friends, and boyfriend /husband. Of these differentials in awareness of EC age, previous place of residence, year of study, exposure to FP methods information, sexual experience and discussion about reproductive health issues with peers, and boyfriend /husband were found as the major determinant factors to be aware of EC in the multivariate analysis.

Furthermore, this study gross effect test found a statistically significant association between attitude towards EC and the background characteristics of the female students such as religion, marital status, exposure to FP methods information, sexual experience, ever use of regular contraception, history of pregnancy and induced abortion, discussion about reproductive health matters with mothers, peers and also boyfriend/husband, intention to use modern contraception in the future, and the extent of knowledge about EC of the respondents. The binary logistic regression model net effect test also indicated religion, sexual intercourse experience, intention to use modern contraception in the future and respondents' level of knowledge on EC as the most determinant factors of attitude towards EC among the respondents.

The focus group discussions of male students of ACTE and ABUC revealed that precise knowledge of EC methods is also lacking among male college students. Moreover, most of the participants approved the availability of EC to reduce unplanned pregnancies and induced abortions as well as their impact on the academic performance of female students. Majority of

them confirmed their willingness for future use or to recommend others in cases of the method need even though they raised the common concerns towards EC.

In this study, even though almost all of the service providers were aware of the concept of EC, majorities were lacking adequate knowledge on the method regimen for the different products and also had no in-service training. Most of the participants of the key informants' interview did not know any service guideline on EC and some also said EC is not part of the FP method mix they provide. Majority of them had also a positive attitude towards EC and the enhancement of the service.

7.2 Conclusion

Post- Secondary level students are expected to have greater knowledge of EC than most youth with no or less educational attainment. In this study only 35.6 percent of the female students have the awareness about EC and of these 17 percent only had good knowledge of EC. Consequently, the findings of this study ascertained that awareness and precise knowledge of EC among ACTE and ABUC female students is far less than from the anticipated. Lack of adequate knowledge on the method among most of the female students in this study suggests that the situation is more likely to be the worst for majority of teenagers and young adults with no or less educational attainment. Furthermore, the study findings indicate that, the promotion of emergency contraceptive methods through programs aimed at reducing unintended pregnancy and its adverse consequences among youths in general and post-secondary students in particular is very limited.

Although the respondents raised their concern towards EC, majority of them (65.6 percent) had favorable attitude towards the method. The female students' attitude towards EC was significantly associated with their level of knowledge about the method (OR=4.04, $P<0.05$) as stated by the crude odds ratio. Moreover, the extent of knowledge about EC was also found to be a highly determinant factor for favorable attitude towards the method ($P<0.05$). The finding revealed that the likelihood of favorable attitude increased as the extent of knowledge of EC increased. Respondents those who had good knowledge of EC were found 4.024 times more likely to have favorable attitude towards EC than those who had fair knowledge on EC.

On the other hand, utilization of EC is very low despite the significant proportion of unplanned pregnancies and induced abortions as well as favorable attitude towards it. This finding strongly suggests that adequate knowledge of the method and its availability is lacking among the female

students. Hence, there is a need to educate post- secondary students in particular and adolescents in general about ECs, with emphasis on the methods available, the correct time limit for use and accurate message about its effect on health.

The study findings also realized that male students played a significant role in the dissemination of information about EC methods and in the decision of females to use the method. Whereas, in the focus group discussions it had been ascertained that male students were also lacking adequate knowledge of ECs even though they expressed their approval of the method availability and positive attitude for future use in need. Hence, every intervention program to enhance the current level of awareness and knowledge of EC should make male adolescents particularly students as part of it.

Majority of the health service providers in this study lack a comprehensive knowledge about EC regimens. Therefore, there is also a need for building providers' capacity through in-service and pre- service trainings with emphasis on methods regimen available for different products and method of teaching and counseling of clients according to the method guideline.

7.3 Recommendations

Based on the findings of this study and the experiences of some other countries the following recommendations are forwarded.

1. As the finding of this study declared the female students' awareness on EC is far less than the figure among South West Nigerian post-secondary school female students (75.7 percent) (Arowojolu & Adekunle, 2000). Therefore, strategies and programs should be specifically designed to provide appropriate information and access to EC should be improved in the country in general and in post- secondary institutions in particular to enhance the appropriate awareness of EC among adolescents.
2. It is observed that a very wide difference between this study finding on female students' awareness on EC and findings from countries where there are a school sex educational programs, 98 percent among Princeton University students (Harper and Ellerston , 1995). This imposes to suggest the responsible bodies of the country to design sex education programs at both high school and higher institution levels.

3. The study result indicated that discussion within female friends about sexual matters has significant role in the promotion of modern contraception in general and emergency contraception in particular. In Kenya the well-informed students had heard of the method through peer counselor training too (Muia et al, 2000). Thus, the academic institutions and those organizations working on RH matters should work on the promotion and enhancement of peer education or counseling among students of post-secondary institutions.

4. Besides the role of peer counseling and education, the medias have a significant role in the dissemination of appropriate information about FP methods as stated in this study and also a study in South West Nigeria by Arowojolu & Adekunle, (2000). Therefore, interventions aiming at adolescents' RH issues including EC should use different medias as the main means to broadcast appropriate information and address the target population.

5. However, because condoms are the only contraceptive method available that also protects against the transmission of HIV and other sexually transmitted diseases, efforts at counseling and education need to teach skills for proper condom use, to reduce the likelihood of failure particularly for college students and generally for the other youth group.

6. Some studies done in USA also indicated, knowledge of emergency contraception among providers increased by 53 percent; which was 13.2 percent prior to the implementation of training programs of emergency contraception for providers and clients (Gold et al, 2004). Therefore, there is also a need for an intervention of building providers' capacity through in-service and pre- service trainings with emphasis on methods regimen available for different products and enhancement of their skill of teaching and counseling of clients according to the method guideline.

7. Use of EC among participants of this study is far less than findings of studies done in communities where awareness for EC is widespread and service is widely available, 31.4 percent among secondary school students in Lothian, South-east Scotland (Anna et al, 1996 in Amaha & Nebreed, 2006). 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 post- secondary studen

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Annex I. Questionnaire

Addis Ababa University
College of Development Studies
Institute of Population Studies
Structured questionnaire for the study

Post-secondary female students' and health care providers' perspective towards EC

(Awassa, 2008)

Good morning/ afternoon?
My name is _____. Currently I am a graduate student at Addis Ababa University, Institute of Population Studies (IPS). I am conducting a survey to asses the awareness, attitude and practices of contraceptives particularly ECs among post-secondary school female students in Awassa town.

The main purpose of the survey is to collect information necessary for developing appropriate strategies and programs to prevent unwanted /unplanned pregnancies and its consequences. To attain this purpose your honest and genuine participation is very important and highly appreciable. I, therefore, kindly request you to fill this questionnaire as accurately and carefully as possible.

Please be assured that all the information gathered will be kept strictly confidential and you do not need to write your name on any of the questionnaire page. Only the researcher has the access of the information and used it for the study purpose only. You have a full right and decision to not respond all the questions or partly. Are you willing to participate? Yes No (Please, encircle or write your answer accordingly)

Thank you, have a nice day.
Data Collector
Name _____ Signature _____ Date _____
Supervisor
Name _____ Signature _____ Date _____

№	Questions	Responses	Skip to
	Section I Socio-demographic Back Ground Characteristics of the Respondents		
Q 101	How old are you?	Age in completed years _____	
Q 102	Where did you come from	Urban 1 Rural 2	
Q 103	What is your Religion	Orthodox Christian 1 Muslim 2 Catholic 3 Protestant 4 Other, specify_____ 99	
Q 104	How often you go to the church	Daily 1 Once in a week 2 Occasionally 3 Accidentally 4	

	/ mosque?	More than once in a week (specify)_____5	
Q 105	What is your department / stream?	_____	
Q 106	What year of study are you now?	First year 1 Second year 2 Third year 3 Fourth year 4	
Q 107	What is your current marital status?	Never Married 1 Married 2 Divorced 3 Separated 4 Widowed 5 Living with boyfriend 6	
Q108	Have you ever discuss/ talk about reproductive health issues with your boyfriend/ husband?	Yes 1 No 2	
Q109	Is your father alive?	Yes 1 No 2	If No go to Q 112
Q110	If 'Yes' what is the educational status of your father?	Illiterate 1 Primary education 2 Secondary education 3 Above secondary 4	
Q111	Do you talk/discuss about reproductive health issues with your father?	Yes 1 No 2	
Q112	Is your mother alive?	Yes 1 No 2	If No go to Q 201
Q113	If 'Yes' what is the educational status of your mother?	Illiterate 1 Primary education 2 Secondary education 3 Above secondary 4	
Q114	Do you talk/discuss about reproductive health issues with your mother?	Yes 1 No 2	
Section II. Sexual experience and knowledge and practices of contraception			
Q 201	Have you ever heard about Family Planning Methods?	Yes 1 No 2	If No go to Q205
Q 202	If 'Yes', which one do you know? (more than one response is possible)	Oral pills 1 IUD 2 Injectables 3 Condoms 4 Norplant 5 Withdrawal 6 Calendar/ Rhythm 7 Other, specify _____ 99	
Q 203	Do you accept/approve that family planning methods prevent pregnancy?	Yes 1 No 2	

Q 204	Have you ever heard/seen information regarding family planning in the last six months?	Yes 1 No 2	
Q 205	Have you ever discuss about reproductive health issues with your friends?	Yes 1 No 2	
Q206	If 'Yes', is there any one who has an experience of sexual intercourse?	Yes 1 No 2	
Q 207	Have you ever had sexual intercourse?	Yes 1 No 2	If No go to Q 220
Q 208	At what age were you had the first sexual intercourse?	Age in complete years _____ I do not remember 96 I do not know 98	
Q 209	How many partners have you ever had for sexual intercourse in your life time?	One 1 Two 2 Three 3 More than three 4 I do not remember 96 I do not know 98	
Q 210	If your answer for question 207 is 'Yes', have you ever used contraceptive methods?	Yes 1 No 2	
Q 211	If 'Yes', which method have you ever used?	Oral pills 1 IUD 2 Injectables 3 Condoms 4 Norplant 5 Withdrawal 6 Calendar/ Rhythm 7 Other, specify _____ 99	
Q212	For how many years you use the regular contraception (duration)?	For less than 1 year 1 For 1 year 2 For more than 1 year (specify)_____ 3	
Q 213	If your answer for question 210 is 'No' what was your reason? (more than one response is possible)	Contraceptive not available 1 Cost of contraceptive not affordable 2 Lack of Knowledge about Contraceptive 3 Partner opposed 4 Religious/moral reasons 5 Fear of side effect 6 Wanted to be pregnant 7 Infrequent sex 8 Had forced sex 9 Other specify _____ 99	
Q214	Have you ever been pregnant?	Yes 1 No 2	
Q215	If 'Yes' how many times?	_____	
Q216	Is there a pregnancy which was unplanned?	Yes 1 No 2	

Q217	If 'Yes', how did you fail to prevent pregnancy?	Forced sexual intercourse 1 Unavailability of contraceptives 2 Calendar method was not correct 3 Contraceptive failure 4 Condom slippage/ broken 5 Forget to take contraception 6 Religious/ moral reasons 7 Infrequent sex 8 Wanted to be pregnant 9 Other, specify _____ 99	
Q218	Have you ever had induced abortion?	Yes 1 No 2 No response 3	
Q219	If 'Yes', how many times?	_____	
Q220	Do you intend to use any modern contraceptive method to delay or avoid pregnancy at any time in the future?	Yes 1 No 2 Not sure 96	
Q221	If 'No', what is /are the main reason/reasons?(More than one response is possible)	Contraceptive not available 1 Cost of contraceptive not affordable 2 Partner opposed 3 Religious/ moral reasons 4 Fear of side effects 5 No plan to have sex in the future 6 Infrequent sex 7 Other specify _____ 99	

Section III Knowledge About Emergency Contraception (for all respondents)			
Q301	Is there any method that could be taken to prevent unwanted pregnancy after unprotected sex?	Yes 1 No 2	
Q302	If 'Yes', mention all the methods you know that could be used to prevent pregnancy after unprotected pregnancy?	_____ _____ _____ _____	
Q303	Have you ever heard about emergency contraceptives?	Yes 1 No 2	
Q304	What was your first source of information?	Television/Radio 1 Magazines/ news papers 2 Relatives 3 Internet webpage 4 From course/formal lecture 5 Boyfriend/partner 6 Female friends 7 Health care providers 8 At campus/college clinic 9 Reproductive Health clubs 10 Parents 11 Other, specify _____ 99	
Q305	Of the listed, which can be used	combined oral pills 1	

	as emergency contraception? (More than one response is possible)	Progestin only pills/postinor-II 2 Estrogen only pills 3 IUD 4 Herbal vaginal pessaries 5 Bitter medications,quinine,lemon, potash 6 Monthly injectable 7 Others (Specify)_____ 99 I do not know 98	
Q306	How do you see the composition of drugs in ECPs compared to other regular modern contraceptive methods?	The same as in the regular contraceptive pills1 The same but a high does in the same hormones 2 completely different from the drug of regular contraceptives 3 Don't know 98	
Q307	To prevent pregnancy effectively, how long the first dose of ECPs should be taken after unprotected sexual intercourse?	Immediately after sex 1 With in 24 hours after sex 2 With in 72 hours after sex 3 With in 4-6 days after sex 4 Even after a missed period 5 Don't know 98 Other, specify_____ 99	
Q308	What is the mechanism of action of EC?	Prevent pregnancy from occurring 1 Induced abortion 2 Prevent pregnancy and induced abortion 3 Don't know 98 other, specify _____ 99	
Q 309	How effective are emergency contraceptive pills in preventing pregnancy?	Highly effective (99%) 1 Three-fourth (75%) 2 Half (50%) 3 Below one–third (30%) 4 Uncertain 96 Don't Know 98	
Q310	In what situations that EC should be taken to prevent pregnancy? (More than one response is possible)	When forced to have sex 1 When condom slipped or broken 2 When there is missed pills 3 When there is failure of contraception 4 When there is infrequent sex 5 When there miscalculation of calendar method 6 Don't know 98 Other (specify) _____ 99	
Section IV. Attitude towards EC (For respondents who have heard about EC)			
Q401	Based on the awareness you have about EC, do you believe that you will use EC or recommend others in case of need in the future?	Yes 1 No 2 Not sure 96	
Q402	If 'Yes', what is your reason to use EC in the future? (More than one response is possible)	It is safer than the regular contraceptives 1 It is more convenient than the regular contraceptives 2 It is more effective than the regular	

		contraceptives 3 Other reason, specify _____ 99	
Q403	If 'No', what is your reason to not use EC in the future? (More than one response is possible)	It is against my religion 1 It is not effective 2 It is dangerous to ones health 3 I am using regular contraceptive methods 4 My partner does not like it 5 It causes abortion 6 Other reason, specify _____ 99	
Q404	EC may hurt the baby in case it does not work.	Yes 1 No 2 Don't know 98	
Q405	EC is necessary to prevent abortion and its complications.	Yes 1 No 2 Don't know 98	
Q406	Worry about that if men knew the existence of this method, they may encourage or exert pressure on women to use it and may exposed to STDs (HIV/AIDS).	Yes 1 No 2 Don't know 98	
Q501	Have you ever had sexual intercourse with out using condom or other contraceptive methods?	Yes 1 No 2	
Q502	If 'Yes', have you ever use EC methods to prevent pregnancy?	Yes 1 No 2	If No go to Q507
Q503	If 'Yes' for question 502 which method of EC have you used?	Combined oral pills 1 Progestin only pills (postinor-II) 2 Estrogen only pills 3 IUD 4 Do not remember 96 Other method (specify) _____ 99	
Q504	Why did you use it during that time?	Timing was miscalculated 1 Did not use any contraceptive 2 Condom slipped/broken 3 Missed pills 4 Forced to had sex 5 Contraceptive failure 6 Other, specify _____ 99	
Q505	Who recommended you to use it?	A friend 1 Partner/ boyfriend 2 Health care provider 3 Internet webpage 4 Parents 5 Don't remember 96 Other, specify _____ 99	
Q506	Where did you get it?	Public hospitals 1 Private clinics/hospitals 2 Reproductive Health Clinics 3 Pharmacies 4	

		School/campus clinics 5 Partner/ boy friend 6 Female friends 7 Other, specify _____ 99	
Q507	If your answer for question 502 is 'No' what is your main reason?	I used regular contraceptives correctly and consistently 1 Used safe period correctly 2 Had no enough information about EC 3 Had no access to EC 4 Cost of EC is not affordable 5 Religious/moral reasons 6 Partner oppose 7 Other, specify _____ 99	
Q508	Have you ever had unwanted pregnancy because of not taking EC?	Yes 1 No 2	

Thank you!

Annex II. Focus Group Discussions Guiding Questions for both Female and Male

1. What do you think about the premarital sex of youth in the present time and their responsibility to prevent unwanted pregnancy and STDs?
2. Do you think any method that could be taken to prevent unwanted pregnancy after unprotected sexual intercourse?
3. Do you ever heard about EC methods?
4. What is your opinion or attitude about the availability of EC in our country?
5. Do you have any concern or questions about EC methods?
6. How do you think about the difference between abortion and EC methods?
7. Who and where EC should be obtained or provided?
8. From what you know about EC do you think that you would ever use/ recommend it to a friend or relatives in case of need?
9. (For males only) What should be the role of males in the promotion and utilization of EC?

(***Adopted and modified from Atsede(2007) and Muia et al (2000)***)

Annex III. Questions Raised for in-depth interview with health care providers

Section I. Concerning health care providers' knowledge about EC

1. Have you ever work on family planning?
2. Have you ever heard about emergency contraceptive? Can you mention any of EC methods you know?
3. Is the health center you work in now providing family planning services? If so does it provide EC for clients in case of need?
4. When EC should be taken to be effective after unprotected sexual intercourse? What is its mechanism of action, its effectiveness compared with the regular contraceptive methods, appropriate situation to take EC? Do you think that EC may hurt the embryo or the mother if it is taken not on time or fail to work?
5. Do you think EC is advantageous to overcome the prevalence of maternal mortality related to induced abortion in our country?
6. Is EC legal in Ethiopia? Are ECs included in the national FP method mix? Have you seen/read the guideline of EC?

Section II. Concerning the provision of EC in the selected MCH/FP service outlets

1. Are EC methods and equipments available sufficiently in your health institution? If so what is your source and how is the continuity of the EC supply?
2. Can you mention the type of EC methods do you have? Which type of EC methods is used mostly?
3. Who provide the service of EC in this health institution?
4. When does the service of EC provided?
5. Do you provide EC service? Do you take any training on EC? How many of EC service providers are trained in your institution?
6. At what age group does your most of clients are belonging? For what reasons that most of your clients ask for EC?
7. Based on your institution data how many clients were provided EC services in average per month?
8. How do you evaluate your clients' knowledge regarding EC?
9. Does the institution take any effort to create awareness on EC among clients? If no why? What should be done to enhance the service?

(Adopted and modified from Astede (2007), Berhanu (2006) and Amaha and Nebred (2006))

Annex IV. List of Non-Health Science Post- Secondary Institutions in Awassa Town

1. Africa Beza University College (Private)
2. Awassa College of Teacher Education (Governmental)
3. Awassa Technical and Vocational College (Governmental)
4. Awassa Water Technology College (Governmental)
5. Debub Ethiopia Teacher Education College (Private)
6. Furra College (Private)
7. Info-Link College (Private)
8. Union Teacher Education College (Private)
9. Zion Technology and Business College (Private)

Annex V. Profile of Sample institutions

i. Awassa College of Teacher Education

Awassa College of Teacher Education (ACTE) found in Awassa town was established and began training on July 1996 to satisfy the demand of qualified second cycle primary school teachers of the SNNPR. The college trains candidate teachers through its three programs- regular, evening (extension) and summer. Since its establishment, the college has graduated 14,678 (2395 females) trainees. In the 2007/2008 academic year 1710 (963 females) regular students have registered in five streams (Language, Mathematics and Physical science, Natural science, and Aesthetics), and it has 190 staff members of which the 102 are academic members (3 Ph. D, 50 M.A/M.Sc, 36 B.A/B.Sc, and 13 Diploma levels) (source: Temesgen, 2007 and ACTE Registry).

Table i. Distribution of ACTE Regular Students by Sex and Stream for 2007/2008 Academic Year

Stream	Year	№ of Students		
		Male	Female	Total
Language	I	32	150	182
	II	16	33	49
	III	12	44	56
Mathematics & Physical Science	I	74	12	86
	II	43	11	54
	III	55	25	80
Natural Science	I	188	101	289
	II	24	17	41
	III	40	16	56
Social Science	I	113	162	275
	II	15	30	45
	III	18	42	60
Aesthetics	I	26	127	153
	II	57	115	172
	III	34	78	112
Total		**747**	**963**	**1760**

Source: ACTE Registrar Office

ii. Africa Beza University College Awassa Campus

Africa Beza University College (ABUC) Awassa campus is a privately owned institution found in Awassa town was established and began training in 1998 basically in the areas of Business and Law. The college trains students through its three programs- regular, evening (extension) and weekend for diploma and degree levels. Since its establishment, the college has graduated 2,549 (1,193 female) trainees in diploma level. In the 2007/2008 academic year 783 (308 females) regular students have registered in five field of studies (Accounting, Business Management, Secretarial Science and office management, Human resource management and Law), and it has around 76 staff members of which the 36 are academic members (1 Ph.D, 5 M.A/M.Sc, 26 B.A/B.Sc, and 4 Diploma levels) (source: ABUC administration and registrar offices).

Table ii. Distribution of ABUC Awassa Campus Regular Students by Sex and Department for 2007/2008 Academic Year

Department	Program	Year	№ of Students		
			Male	Female	Total
Accounting	*Diploma*	I	22	28	50
		II	18	15	33
		III	14	15	29
	Degree	I	8	12	20
		II	3	5	8
		III	-	-	-
Business Management	*Degree*	I	8	25	33
		II	13	14	27
		III	16	11	27
Secretarial Science and Office Management	*Diploma*	I	-	15	15
		II	1	11	12
		III	-	-	-
Human Resource Management	*Diploma*	I	36	9	45
Law	*Diploma*	I	187	95	282
		II	76	23	99
		III	73	30	103
Total			**475**	**308**	**783**

Source: *ABUC Awassa campus registrar*

Declaration

The thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

Wondimu Bekele	Bekele	July 10, 2008
Student	Signature	Date

I confirm that this thesis has been submitted with my approval as the supervisor of the same.

Advisor	Signature	Date