ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

DEPARTMENT OF NURSING AND MIDWIFERY

ASSESSMENT OF DETERMINANTS OF INDUCED ABORTION AMONG CHILD BEARING AGE WOMEN ATTENDING MATERNAL AND CHILD HEALTH CLINIC IN MEKELLE TOWN, TIGRAY, ETHIOPIA.

BY:

GEREZGIHER BURUH (BSC)

A thesis submitted to the School of Graduate Studies, Addis Ababa University, in partial fulfillment of the requirements for the Degree of Master of Science in Maternity and Reproductive Health Nursing.

June- 2011

Addis Ababa, Ethiopia

ASSESSMENT OF DETERMINANTS OF INDUCED ABORTION AMONG CHILD BEARING AGE WOMEN ATTENDING MATERNAL AND CHILD HEALTH CLINIC IN MEKELLE TOWN, TIGRAY, ETHIOPIA.

BY: GEREZGIHER BURUH (BSC)

E-mail- loveingo@yahoo.com

Addis Ababa, Ethiopia.

ADVISOR: BALCHA BERHANU (RN, BSN, MSC)

June- 2011

Addis Ababa, Ethiopia

APPROVED BY THE BOARD OF EXAMINERS.

THIS THESIS BY GEREZGIHER BURUH IS ACCEPTED IN ITS PRESENT FORM BY THE BOAD OF EXAMINERS AS SATISFYING THESIS REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN MATERNITY AND REPRODUCTIVE HEALTH NURSING.

Internal examiner:

_____	_____	_____	____/____/____
Full name	Rank	Signature	Date

Research advisor:

_____	_____	_____	____/____/____
Full name	Rank	Signature	Date

June- 2011

Addis Ababa, Ethiopia

Acknowledgement

This is, in fact, a great moment to raise my deepest gratitude and appreciation to my dear advisor Mr. Balcha Berhanu, for his unreserved support and constructive comments including timely communication throughout the preparation of this thesis. Moreover, those experiences and constructive ideas were marvelous.

I would like to thank Mr. Fekadu Aga for unreserved constructive and timely comments.

My great thank also goes to Mr. Haftu Berhe and Mr. Alemayehu Bayray for their assistance and valuable comments from the inception of thesis up to completion.

My special appreciation extends to Addis Ababa University for sponsoring this research and the staff of nursing department for material supports. I would like also to acknowledge all Mekelle University, Nursing department staffs for their unforgettable and friendly assistance.

My gratitude goes to the librarian of the school of nursing, public health, and ESOG office staffs in providing necessary references for the success of this study.

I am also greatly indebted to all those who participated in the study, all data collectors, supervisors and my friends for their all rounded support in the completion of this thesis.

Finally, had it been without the keen participation of reproductive age women attending MCH clinics in Mekelle town, the study would have not been proceeded a step forward. My sincere thank also goes to those participants.

TABLE OF CONTENT **Pages**

List of tables:

List of figures

Acronym

ANC- Antenatal care

DHS- Demographic Health Survey

ESOG- Ethiopian Society of Obstetricians and Gynecologists

IA- Induced abortion

MCH- Maternal and Child health

MMR- Maternal mortality ratio

MSI- Marie Stopes International

RHB- Regional health bureau

SAC- Safe abortion care

SES– Socioeconomic status

THB- Tigray Health Bureau

WHO- World health organization

Abstract

Background: Different studies imply that post-abortion care was not only traumatic for women and men but also a costly and time consuming endeavor for health care facilities, providers and families. Nationally cross sectional study on women aged 15 to 49 was carried out at northwest Ethiopia, implies that abortion rate was 19%. Limited access to contraceptives for all groups of women has been clearly identified as a determinant of induced and spontaneous abortion in some studies in Ethiopia.

Objectives: To assess determinants of induced abortion among child bearing age women attending maternal and child health clinic in Mekelle town, Tigray, 2011.

Methods: Institution based cross sectional study on assessment of determinants of induced abortion was conducted in February 2011. Study subjects were the women in childbearing age, attending maternal and child health clinic in Mekelle town, among induced abortion survivors by convenience sampling. The data was collected by interview using structured questionnaire, and cleaned and analyzed using SPSS V 16.0. Crude and adjusted odds ratio was used to see the association with p value < = 0.05 as significant. Results were interpreted and presented in the form of figures, tables and texts. The result will be disseminated timely and contributes to the control of induced abortion.

Results: A total of 260 women of reproductive age group were interviewed. The main determinants of induced abortion were health problem 56 (21.5%) and child spacing39 (15%). The younger the women, the higher the risk of induced abortion. The mean age of health institution based induced abortion was 25.19 years. Contraceptive failure was also substantial determinant among the respondents. Marital status and occupation were some of the influential demographic factors.

Conclusions and recommendations: Majority of women who experience induced abortion 120(46.1%) were less than 25 years age. The most frequent determinant of induced abortion reported was health problems 56 (121.5%). When educational level and economy of the women increases, their interest to induce in health institution also increased. It was recommended that health professional, policy makers and leaders should create awareness in the community that the unwanted pregnancy would have cultural, economical and psychological impacts secondary to induced abortion.

Key words: number of induced abortion and order of pregnancy aborted.

CHAPTER I: INTRODUCTION

1.1 Background

Abortion is the termination of a pregnancy by the expulsion of a fetus or embryo from the uterus. An abortion can occur spontaneously due to complications during pregnancy or can be induced. In the context of human pregnancies, an abortion induced to preserve the health of the pregnant female is termed as therapeutic abortion, while an abortion induced for any other reason is termed as elective abortion. By convention, induced abortion is usually defined as pregnancy termination prior to 20 weeks (for developed countries) and 28weeks (for developing countries) gestation or less than 500-gm birth weight; it can be safe or unsafe abortion. The term abortion most commonly refers to the induced abortion of a human pregnancy, while spontaneous abortions are usually termed miscarriages (1).

In Ethiopia, abortion has been contributing to the high maternal mortality rate (MMR). The risk groups, (mothers and children) have priority in health service implementation. Worldwide, the plan to achieve the Millennium Development Goal 5 is focusing on maternal and child health as a primary goal in health program. To achieve the Millennium Development Goal 5 of reducing maternal deaths by three-fourths by 2015, particularly in sub-Saharan Africa, like Ethiopia, the issue of abortion has to be systematically addressed (2).

The demand for abortion in this poor and predominantly rural country is rooted in low contraceptive use and high levels of unintended pregnancy. Indeed, only 14 % of Ethiopian women of reproductive age use contraception and more than 40% of pregnancies are unintended (3). Substantial progress has been made in providing legal, safe abortion services in the short time since legal reform. Ipas and the Guttmacher Institute, in collaboration with Ethiopian Society of Obstetricians and Gynecologists (ESOG) were organizations playing effective role.

Expansion of contraceptive services is crucial if unintended pregnancy and abortion-related mortality and morbidity are to be reduced (3).

Legality of abortion, introduction of long acting contraceptives, and cooperation with NGOs are some of the country's health activities to reduce maternal mortality. Marie Stopes International (MSI) is one of the most dynamic NGO works to reduce the number of unsafe abortions globally by rapidly expanding access to comprehensive sexual and reproductive health services, including safe abortion and post abortion care (4**).**

1.2 Statement of the problem

Long ago abortion was with high incidence; approximately 26 million legal and 20 million illegal abortions were performed in 1995. Approximately 44% of abortions worldwide were performed illegally (of which many, though not all, are unsafe). The proportion of abortions that are illegal ranges from almost none in Eastern Asia, Western Europe and Northern America to almost all in Africa, Central America and South America among women aged 15–44 (5).

. Unsafe abortion accounted for 14% of all maternal deaths in sub-Saharan Africa, where half of the world maternal deaths occurred. Many women with unintended pregnancies resort to clandestine abortions that are not safe. According to the World Health Organization, around 1.5 million abortions in Middle East and North Africa in 2003 were performed in unsanitary settings, by unskilled providers, or both. Complications from those abortions accounted for 11% of maternal deaths in the region (6*).*

Ethiopia has a community with poor health service supply that delays health service coverage. Nowadays, health service facilities expansion is one basic need to fulfill community health demands. In Ethiopia as elsewhere in developing countries maternal health problem predominate. Different studies imply that Post-abortion care is not only traumatic for women and

men but also a costly and time-consuming endeavor for health care facilities, providers and families. One hospital-based study in Addis Ababa reported an average stay of 4 days for abortion admissions, and 6 days for complications of induced abortion (7).

According to the World Health Organization, Ethiopia has the fifth largest number of maternal deaths. The maternal mortality ratio (MMR) in Ethiopia was estimated at 673 deaths per 100 000 live births in the year 2005, and unsafe abortion was estimated to account for 32% of all maternal deaths in Ethiopia. The restrictive laws on abortion before May 2005, in Ethiopia have been revised to include four legal grounds in which abortion can be made available, (rape and incest, lethal congenital malformation, physical health and mental health), which contributes to an increase in induced abortion, even though it is not as expected (8).

Recently in 2008, an estimated 382,000 induced abortions were performed in Ethiopia, and 52,600 women were treated for complications of such abortions. There were an estimated 103,000 legal procedures in health facilities nationwide 27% of all abortions. Nationally, the annual abortion rate was 23 per 1,000 women aged 15-44; the abortion ratio was 13 per 100 live births. Unsafe abortion is still common and exacts a heavy toll on women in Ethiopia. It also shows that almost 58,000 women sought care for complications of induced or spontaneous abortion. Forty-one percent had moderate or severe morbidity, such as signs of infection that were likely related to unsafe abortion. (9).

After legalization of abortion in Ethiopia, decreased trends of abortion ratio and the abortion related MMR were identified; the MMR is reduced to 470 deaths per 100,000 live births in (2008), but the severity of abortion complications and the case fatality rate increased during the transition of legal revision; the case fatality rate of abortion increased from 1.1% in 2003 to 3.6%

in 2007 and the case fatality rate among women seeking post abortion care in public hospitals were the most serious complications seen, (628 per 100,000), (9, 10*)*.

The possible cause of abortion is laying on unintended pregnancy, resort to clandestine abortions that are not safe. Rape or incest, potential health problems regarding the mother or child, is also considerable causes. In two studies, it was explained that rape was cited as the reason for seeking an abortion in 20-25% of the cases. In one review of maternal deaths conducted by a Maternal Mortality Review Committee, avoidable factors were found in 92% of the cases. Many of these deaths were attributed to poor post-abortion and delivery management. Limited access to contraceptives for all groups of women has been clearly identified as a determinant of unwanted pregnancy and subsequently, induced and even spontaneous abortion in some studies (7).

Studies conducted in Spain in 2004, levels of alcohol consumption, living conditions, and personal health and education influences the induced abortion rate. It is not out of consideration that sex before marriage also contributes to usually unsafe abortion; results in serious complications (11). The revision of restrict laws on abortion in Ethiopia was to reduce prevalence of unsafe abortion. Good supply of unmet contraceptive needs, restriction of underage marriage, and preventive policy of rape were some of the solutions to reduce unintended pregnancy. A study on legal rights to abortion are not yet access, in Ethiopia, 2006, making reports for which it clear that just legalizing abortion does not go far enough to guarantee women's health and rights (12).

Even after liberalization of the abortion law in Ethiopia, a number of reports indicate that the consequence of abortion is contributing factor for maternal death. One survey of 15-24 year-olds women, in Addis Ababa, half of the 976 young women interviewed reported having been

pregnant; 76% of these women told interviewers that they had a spontaneous (2%) or an induced abortion (74%). Another record review of Addis Ababa maternal deaths 35 of 36 abortion-related deaths were induced abortion cases; that impede rapid and high quality abortion care; and it is contradicting the liberalization of abortion law that was for the purpose of reducing maternal death (6).

From the above paragraphs it can be generalized that legalization of abortion law, and fulfilling of unmet need of contraceptive can't reduce abortion and maternal mortality rate as needed as possible; rather flow of abortion and related deaths are common. A cross sectional study conducted countrywide in 2000 indicates that Mekelle town is the second highest next to Gonder in abortion prevalence (15.7%). From 2007 until 2009, Ipas and the Tigray Health Bureau (THB) used the Safe Abortion Care (SAC) monitoring framework to assess progress to achieve positive results; end results illustrate that women treated for abortion complications declined, while the number of women using safe, induced abortions dramatically increased from 7.3 % of all abortion cases to almost 60 % two years later (6, 13).

Therefore, the research investigator hypothesize that there are number of factors that can determines induced abortion. Thus, the research investigator posed questions as:

- What is the distribution of induced abortion in the study area?
- What are the determinants that increase induced abortion in the study area?
- What are the association between the determinant factors and induced abortion in the study area?

The aim of this paper is to identify determinants of induced abortions among child bearing age women attending health institution in the study area, during the study period.

1.3 Significance of the study

Nowadays abortion predominates, despite a number of organizations striving to reduce it. The significance of the study is to describe the determinants of induced abortions in the study area that enables to reduce unwanted pregnancy, and contributes bases for reduction of maternal mortality. It can be used as a base line by policy makers and significant others to explore the way to reduce risks of induced abortion and prevention of determinants.

CHAPTER II: LITERATURE REVIEW

Abortion is the worldwide public health problems. After legalization of induced abortion, it persists being risk factor for maternal death, morbidity and economical burden. A large number of women diseased secondary to obstetric conditions like pregnancy, labor, and abortion. A study in Padesh, India in 2002, a symptom measure records indicates morbidity of 58% of those have abortion in rural, and morbidity of 46% of those have abortion in urban areas. The severity in abortion attempted mothers was high in rural areas than urban areas (14).

Every year, worldwide, about 42 million women with unintended pregnancies choose abortion, and nearly half of these procedures, 20 million, are unsafe. Some 68,000 women die of unsafe abortion annually, making it one of the leading causes of maternal mortality. An unsafe abortion showed exaggerated in developing countries. In Western nations, only 3% of abortions are unsafe, whereas in developing nations 55% are unsafe. Worldwide, some 5 million women are hospitalized each year for treatment of abortion-related complications; and abortion-related deaths leave 220,000 children motherless. The main causes of death from unsafe abortion are hemorrhage, infection, sepsis, genital trauma, and necrotic bowel. Poor wound healing, infertility, consequences of internal organ injury (urinary and stool incontinence from vesico-vaginal or recto-vaginal fistulas), and bowel resections are also not ignored (5, 15).

A study conducted in USA in 1982, indicates the order of main effects of abortion in numerical importance as marital status, metropolitan residence, age, education, parity, and race. The gross distribution indicates that 13% of pregnant nonmetropolitan women obtain an abortion compared with 32% of pregnant metropolitan women. The bivariate effects of education on pregnancy outcome indicate that the likelihood of abortion versus birth among women with less than 12 years of education is 90% birth that of women with at least 12 years of education. Pregnant

women with at least 12 years of education are more likely to abort than those with less education (16).

Data from the 1998-99 National Family Health Survey of India are used to examine the net effects of social and demographic characteristics of women on the likelihood of abortion. Results from logistic regression analyses show that literacy, type of work, belonging to a scheduled caste or tribe, urban residence, standard of living, parity, religion, age, have significant effects on the likelihood of abortion. Literate women are about twice as likely to get an abortion as illiterate women; similar to that of U.S.A study findings. Compared women with a low standard of living, women with middle and high standards are more likely to get abortions**.** Urban dwellers are also more likely to seek abortions than are others (17).

There is also a relationship between abortion and sexual practice before marriage and since it may be lack of conformity, it can predispose usually to unsafe abortion. Researches had been carried out in China on attendees' sexual activity, pregnancy and abortion before their marriages in 2004. A history of induced abortion was sought almost in seven urban studies, and ranged from 11 to 55%. Most women who had become pregnant had an induced abortion in three different studies, 86%, 90% and 96% respectively. These data show that for premarital sex, abortion is the main response (18).

In the same countries another study in 2003, on Determinants of Induced Abortion and their Policy Implications in Four Countries in North China indicates that the outcome of a pregnancy is strongly determined by the official birth policy according to the current number and sex of a couple's children, the woman's age at pregnancy, and the length of time between the index child's birth and the current pregnancy. The probability of a pregnancy's being terminated by abortion is significantly lower if the first child is a girl, the spacing from the previous birth is long, or the

mother is 28 or older. Individual and household socioeconomic status, as measured by the education of the wife and the husband plays no apparent role in determining whether a pregnancy is aborted; none of these variables is statistically significant (19).

Women usually did not need their pregnancy without any economical, medical or social problems, called unwanted pregnancies, can also contribute for induced abortion. A study in Turkey, 2002, indicates that the primary reason given for induced abortions did “want no more children" (64.6%). In about 63.54% of the induced abortions, both of the couples have decided to the induced abortion together. Most of the lifetime induced abortions take place at the private doctors’ consultant room (46.88%); almost 23.96% of them have begun to use ineffective methods. Intra uterine devices (IUD) (52.38%) took the first and condom (26.19%) took the second place among the effective family planning methods (20).

Women having more than one sexual partner may have induced abortion, usually to be safe guard of her husband. A study conducted in Latin American country in 20 cities in Peru, 2009, indicates that the risk factors for induced abortion were geographic region-highlands, having children, having more than 1 sexual partner in lifetime, and overall, 49.0% of the women who reported being currently sexually active were not using contraception. The provision of contraception and safer-sex education to those who require it needs to be greatly improved and could potentially reduce the rate of induced abortion (21).

Family income and education may associated with abortion, a study in Brazil 2006, on induced abortion during youth: social inequalities in the outcome of the first pregnancy, indicates that abortion is almost four times as frequent in girls with a monthly income greater than U$90.00 and three times as frequent in those with more schooling, as compared to those with lower family incomes and less schooling (29.5% versus 19.3%). Among women whose sexual debut was with

an occasional partner, 35.8% reported abortion in the first pregnancy. With those women reported that had used contraceptive method, abortion was the outcome of the pregnancy in 26.7% of cases. Neither self-reported race/color nor parents' separation was statistically associated with the target event (22).

Developing countries, like Africa, have not enough economies to afford the consequence of abortion (safe abortion); requires reducing the occurrence of abortion by controlling causing factors. The World Health Organization (WHO) estimates that every year, nearly 5.5 million African women have an unsafe abortion. As many as 36,000 of these women die from the procedure, while millions more experience short- or long term illness and disability.(8) The proportion of maternal deaths attributable to abortion ranged from 2% in Nigeria to 54% in Guinea. The Guinean study reported that 15% of the hospitals' maternal deaths, and an additional 54% of the maternal deaths in the community, were due to abortion complications. One study, from Zambia, found that 53% of women seeking an abortion were of low or middle socioeconomic status. Research on Nigerian adolescents with septic abortion found that over 50% of the young women had been expelled from school because of their pregnancy (23).

The major determinants of the high rate of mortality associated with induced abortion in developing countries include restrictive abortion laws, adverse socio-economic, cultural, and religious factors; which limit access to abortion and post-abortion care for women suffering complications of unsafe and induced abortion. In many developing countries, because of restrictive abortion laws, termination of pregnancy is undertaken either by women themselves using highly dangerous methods, or by "backstreet" abortionists lacking minimal training, skills, and experience (24).

Social stigma and economic variables may determine unsafe or safe abortion. Socially unacceptable pregnancies like rape, multi partner, incest is difficult to communicate with health professionals for the community. Many women, therefore, seek clandestine abortions, which places the woman at risk of complications and death. In India, for example, religious and social sentiments prevent women from seeking legal and safe abortion services in public health institutions. Despite the law that permits abortion on broad social grounds, women with unwanted pregnancy in India continue to patronize illegal abortionists. In Zambia and Ghana, two countries in Africa with liberal abortion laws, the lack of strong service delivery systems that integrate abortion and post-abortion care is the major reason that women in those countries still suffer complications of unsafe abortion (11, 24).

Like other developing countries, Ethiopia also has similar health problems that demands solution. One in 27 women died from complications of pregnancy or childbirth annually. Notwithstanding the new law, almost six in 10 abortions in Ethiopia are unsafe. In 2008, an estimated 382,500 induced abortions were performed in Ethiopia, for an annual rate of 23 abortions per 1,000 women aged 15–44. The abortion rate is considerably higher than the national average in urban areas: 49 per 1,000 in Addis Ababa, and 184 per 1,000 in the smaller urban regions of Dire Dawa and Harari. Women seeking induced abortion in 2008 had a mean age of 23, and the majority (54%) was single. The Ethiopian study found that complications of abortion were the leading cause of maternal mortality in the population surveyed, accounting for 54% of the direct obstetric deaths and 29% of all maternal deaths (9, 23).

A nationwide hospital based survey in 9 of the 11 administrative regions of Ethiopia was conducted from June to December 2000. About 58% of the cases were in the age range of 20-29 years, the majority of women (87%) were aware of contraceptive methods, but only about half of

them ever used a family planning method. Of those pregnancies that ended in abortion 50 % were unwanted. Among those with induced abortion, the most common reason for termination of pregnancy was contraceptive need. About 19% women reported that unwanted pregnancy occurred due to contraceptive failure, which has important implications for the provision of appropriate family planning services. Rape accounted only for 3% of all pregnancies that ended in unsafe abortion which was 2.5% of all the reasons for termination of pregnancies. Partner decision alone as a reason for termination of pregnancy accounted for 9.3% of all cases (25).

Most of the determinants of abortion in Ethiopia are avoidable, but still causes maternal death. From the fragmented studies conducted in Ethiopia, we can see that the prevalence of induced abortion and its negative consequences are increasing from time to time throughout the country. A cross sectional study on 1346 women aged 15 to 49 was carried out in six rural and four urban 'Kebeles' of northwest Ethiopia in March 2003. The abortion rate was 19% and among spontaneous and induced abortion were computed prevalence rates as 14.3% and 4.8%, respectively. A total of 573 (42.6%) women reported to be current users of contraceptives (26).

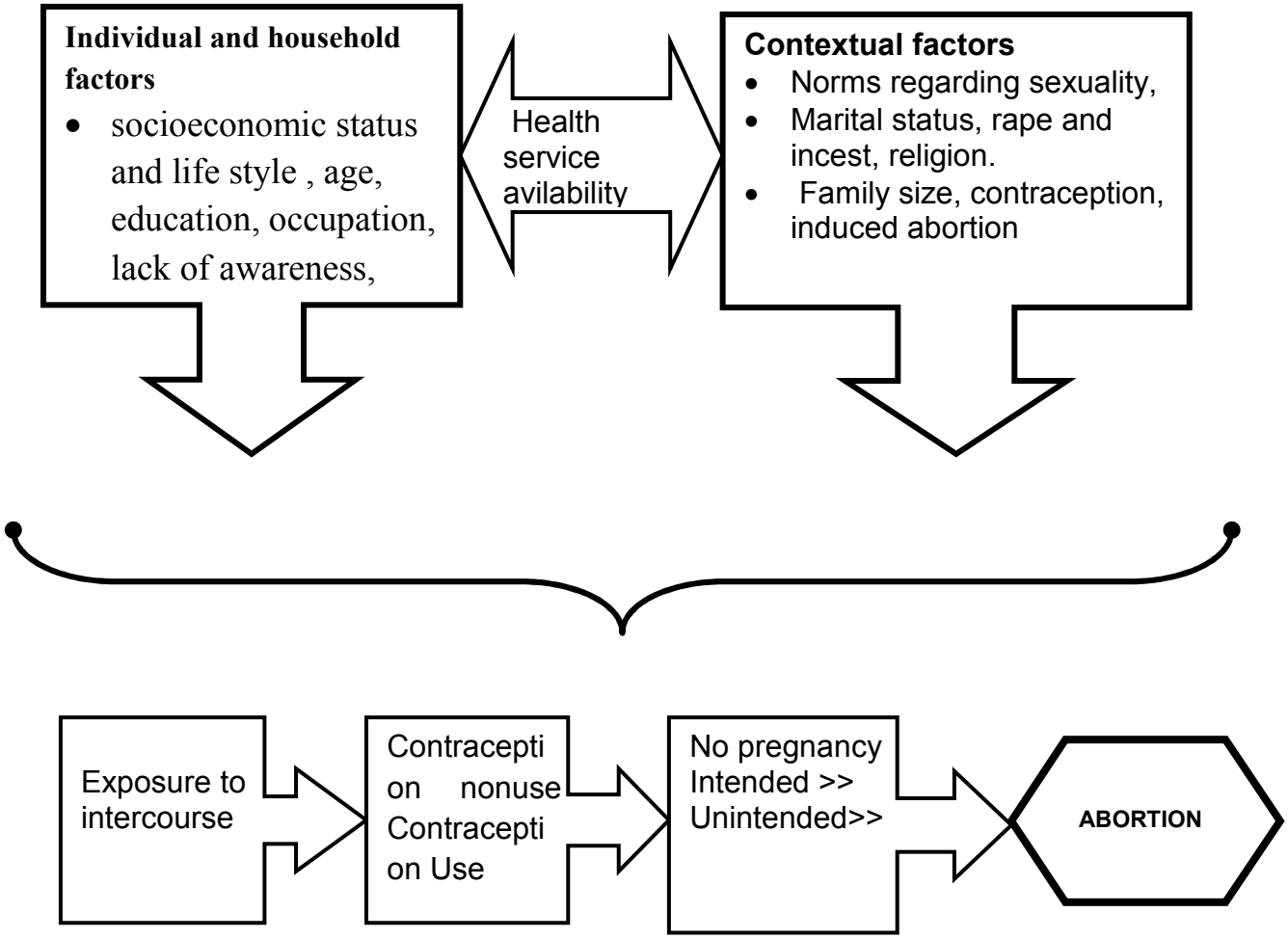
Among the determinant factors included in the multivariate logistic regression model, place of residence, marital status, contraceptive use, number of pregnancies and level of education attained by the women were found to be significantly and independently associated with induced abortion. As indicated in the study, other reasons for induced abortion were fear of the family and the community 20 (31.3%), not to interrupt school 17(26.6%) and financial problem 9 (14.1%). With the increase in age and number of pregnancies, there was a decrease in the number of mothers who had induced abortion. (28)

On the other hand, as the level of education of the study subjects increased, there was an increase in the number of mothers who had abortions accordingly; this is similar to that of China and U.S

study results. A cross-sectional study done in Agaro town, southern Ethiopia, in 2006, abortion was reported as associated about 17% with maternal education and marital states was significantly associated with post abortion care, but association decreases as educational level increases (26, 27). As indicated in the study conducted in 2000 indicates that Mekelle town is the second highest next to Gonder in abortion prevalence (15.7%). A prospective study in Adigrat, 2004, indicates that rape has significant role in abortion; within the study period, 181 victims have been reported. After three month follow up 16 patients become pregnant and 11 of them were aborted (28, 29).

Conceptual frame work

As it cannot found similar conceptual frameworks for the determinants of induced abortion in Ethiopia, a developing country model was adapted, as shown bellow. Two aspects of this model are important for guiding the current analysis. First the probability of abortion is decomposed into contextual factors, individual and household factors. Second the model assumes that intended and unintended pregnancies may end in induced abortion through different determinant factors. This can help to show the relation of independent variables and induced abortion (30).



Adapted from study conducted in the north-western Indian state of Rajasthan, in 2008, by Sutapa Agrawal (Assistant Professor).

***Source**: produced by the United States Agency for International Development. (30)*

Figure1. Conceptual frame work of the study variables of determinants of induced abortion.

CHAPTER III: Objective

3.1 General objective:

To describe determinants of induced abortion among women of child bearing age, attending MCH clinic who experienced abortion in Mekelle town, 2011.

3.2 Specific objectives:

- To describe induced abortion in the study area
- To identify the determinants of induced abortion in the study area
- To describe related factors associated with induced abortion.

CHAPTER IV: Methodology

4.1 Study area

This cross sectional survey was conducted in Mekelle town, Tigray. Tigray is the northern most regional State, one of the nine Regions in Ethiopia. Tigray is bordered by Sudan to the west, Eritrea to the north and the Amhara and Afar Regions of Ethiopia to the south and east respectively. The region covers 54,572.6 square kilometers, with a population estimated at 4.48 million in 2007. Tigray has a public health-care infrastructure of 12 public hospitals and 38 health centers.

The study was carried out in Mekelle town which is the capital of Tigray regional state. Mekelle is located 783km from Addis Ababa; Northern part of Ethiopia. Total population of the Mekelle town is estimated to be 227,505 (2008) and women of childbearing age group are 60, 998 (32.97%) of total population in 2007. Administratively the town is divided into seven sub administrative units; namely Hawelty, Hadnet, Ayder, Semean, Kedamay weyane, Adihaki, and Quiha. There are three general, one referral, governmental hospitals and four private hospitals rendering induced abortion. There are also eight health centers and 38 private clinics in Mekelle**.**

4.2 Study period:

The cross-sectional study was conducted in Mekelle town in February 2011.

4.3 Study design

Institution based cross sectional study design.

4.4 source population

All women of child bearing age that experienced induced abortion in the catchment area of the MCH clinic.

4.5 Study Population

All women of child bearing age, attending the MCH clinics at study period that experienced induced abortion.

4.6 Description of Variables

1. **Independent variable**

- ✓ Demographic variables
  - Age, education, marital status, income, occupation, residence.
- ✓ Determinant factors
  - Lack of contraceptives, contraceptive failure, lack of knowledge about contraception, child spacing, rape, incest, and health problems.

2. **Dependant variable:**

- ✓ Number of induced abortion.
- ✓ Order of pregnancies aborted.

4.7 Eligibility criteria

Inclusion criteria

Women aged between 15-49 years, attending MCH clinics, those who experienced induced abortion within 5 years past from the study period, live for about six month in the area and that were voluntary to participate was included in the study.

Exclusion criteria

Those women who did not experience induced abortion, those involuntary to participate or incapacitated, and women with history of miscarriage was excluded from the study.

4.8 Sample size determination

The Sample size determination had been used with the assumption of Confidence level = 95%, Critical value z = 1.96 (from significance level α = 5%) and Degree of precision, w = 0.05. Similar cross sectional study on women aged 15 to 49 was carried out in northwest Ethiopia in March 2003, the abortion prevalence was 19% (25). From the study, P was taken as 0.19 and non response rate 10%. The sample size was calculated using a formula for single population proportion. Using $n= \frac{((Z\alpha/2)\ 2(p\ (1-p))}{(d2)} = \frac{((\ 1.96]\ 2(0.19\ (1-0.19))}{((0.05)\ 2)}$ = **236**. With contingency 24 participants, the total sample size was 260.

4.9 Sampling technique:

The study sites were changed from previously proposed (to include governmental and private health institutions) for administrative purposes to health institution with almost similar flow of patients. Two governmental hospitals (Mekelle Hospital, & Ayder referral hospital), and two governmental health centers (Semyen and Mekelle health centers) were selected purpose fully, for that it is likely child bearing age mothers were found and usual abortion procedures performed in these institutions. Since many of the study subjects did not volunteer, not easily accessible and less flow of clients for all day's services interval of study subjects, convenient sampling method was used in the study sites to select the study subjects.

4.10 Method of data collection

The data was collected by interviewing the study subjects using structured questionnaire that was adapted from research done on post abortion quality of care questionnaire, by IPAS Ethiopia in Tigray, 2008. The questionnaire was distributed to the selected health institution, based on that

they have almost similar average daily intake of clients related to MCH service. Therefore the number of respondents selected from each institution was 65 each.

The tasks of supervisory was deploying data collectors by going with them, introducing the purpose of the study for clinic leaders, checking daily 10% of the filled questioners for completeness, accuracy at the closing of each day of data collection. Considering the definition of induced abortion used in the proposal, data was collected when confirmed participants' abortion status either from their registration or when voluntarily explained themselves.

4.11 Data quality Assurance

To achieve good data quality:

- ✓ Questionnaire was prepared in English and translated in to Tigrigna and back translated to English by different qualified individuals to keep consistency of the data.
- ✓ Nurse female data collectors were selected based on their ability to speak the local language for better communication on abortion.
- ✓ Training was provided to the selected data collectors and supervisors for two days about the process of data collection.
- ✓ Pre test was done with 10% of the questionnaires one week before actual data collection on similar community as the study population, in an area that was not included in the study.
- ✓ Checking 10% of the filled questioners for completeness and accuracy at the closing of each day, and closer supervision was undertaken during data collection.

4.12 Data analysis procedure

Data was entered, cleaned and analyzed using SPSS V 16.0 statistical software package. To see the relative determination of independent variable on the dependent variable, binary logistic

regression analysis was carried out. Results were presented in the form of texts, tables, figures, and graphs.

4.13 Ethical consideration

Ethical clearance and approval was obtained from Addis Ababa University-Department of Nursing Research Review Committee. The necessary permission to undertake the study was also obtained from Tigray RHB and specific health institution leaders. Leaders of the site and all participants were informed about the purpose, advantage and disadvantage of the study, being anonymity and the right to refuse at any stage of interview. Confidentiality of the responses was assured, and informed consent was obtained prior to each interview.

4.14 Dissemination and utilization of the Result

The study findings will be disseminated to Tigray RHB, Mekelle town health department. The results will be also submitted to Addis Ababa University Department of Nursing & Midwifery in the form of Master's thesis. The result will be presented in different related seminars or workshops, and at the end, it will be sent for publication on journal of high scientific repute.

4.15 Operational definitions

Abortion- the termination of pregnancy before 28weeks gestational age with apparent causes, in the way exist no viability of the fetus.

Child spacing- termination of pregnancy as contraceptive purpose

Contraceptive failure – used contraceptive gives no expected prevention.

Determinants - those factors contributing for the occurrence of abortion.

Incapacitated- women who mentally or physically unable to give their response during data collection period

Incest- sex between close relatives

Induced abortion - abortion performed by individuals for any perceived reason.

Induced abortion survivors- Women who experienced induced abortion, and able to survive.

Lack of awareness- when the participants do not know how, where, and when to prevent pregnancy.

Health problem- health related conditions that include congenital malformation, physical injury, medical condition, and mental health problem

Maternal and Child Health clinic- a clinic either in hospital or separate health institution comprises ANC, family planning and delivery services or abortion centers.

No formal education- those who did not have grade one or more certificate.

Rape - the crime of using force somebody to have sexual intercourse with somebody

Unwanted pregnancy- A pregnancy in which the woman usually did not need their pregnancy without any economical, medical or social problems.

CHAPTER V: Results

5.1 Socio-demographic characteristics

A total of 260 women of reproductive age group were interviewed, making the response rate of 100%. Most of the clients were inhabitants of Mekelle town, 243 (93.45%) and the rest were from other villages around the town, and more than one year period of residence were 84.6%. The majority of the women who had experienced induced abortion 138 (53.1%) were under the age of 25 years, with mean age 26.22 ±7.01years. In their ethnicity, about 230 (88.5) were Tigrian. Twenty seven (10.4%) were Amhara and the rest 3(1.2%) were Erob. Most of the respondents, 229 (88.1%) were followers of orthodox religion, and the rests few were Muslim, Catholic, and Protestant. Their marital status revealed that the largest number 103 (39.6%) were married, and the next largest were single 67(25.8%), out of which 64(95.5%) were aborted their first pregnancy.

Of the total 260 interviewed women, 117(45%) were housewives, and only 10.8% (28) were commercial sex worker. A large number of the respondents, 105 (40.4%) were with secondary school and above educational status, and about 93 (35.8%) of the respondents were with no formal education. Based on their monthly income, about 190 (73.1%) women had monthly income less than 500 Birr, and only 12, (34%) respondents had a monthly income of more than 1500 Birr. The distribution of socio-demographic characteristics of the respondents is shown below in table 1.

Table 1: Socio demographic characteristics among reproductive age women, in Mekelle town, Ethiopia, 2011 (n=260)

Characteristics		Frequency	Percent
Age	15-19	45	17.3
	20 -24	75	28.8
	25-29	60	23.1
	30-34	42	16.2
	35-39	23	8.8
	40-44	12	4.6
	45-49	3	1.2
Marital status	Single	67	25.8
	Married	103	39.6
	Divorced/widowed	46	17.7
	Co-habitant	44	16.9
Occupation	House wife	117	45.0
	Governmental Employee	35	13.5
	Commercial sex worker	13	5.0
	Daily worker	28	10.8
	Student	65	25.0
	Merchant	2	0.8
Educational level	No formal education	93	35.8
	primary	62	23.8
	Secondary and above	105	40.4
Monthly income	<500 Birr (low)	190	73.1
	500-1500 (medium)	58	22.3
	>1500 (high)	12	4.6

5.2 Obstetrics related variables

The women who had no child accounts 118 (45.4 %) and those who had three or more were 57(21.9%). Out of the total women, those who had only one pregnancy were 110 (42.3%) and almost all of the women 244(93.8%) had not experienced stillbirth. Those 213(81.9%) respondents were aborted in health institution, and 51(19.6%) were out of health institution. The mean age of institution based induced abortion was 25.19 years, and the mean age of non health institution based induced abortion those 30.89 years. Among the total induced abortion, those 215(82.7%) were induced by health professional, and 26(10.0%) were induced by the woman herself. Among those 48 (18.5%) admitted respondents, 6 (12.5%) had more than five day duration of admission. Among those 72 (27.7%) respondents who had complication, those 49 (68.1%) respondents had bleeding, and 18 (25.0%), had infection. One hundred sixty seven respondents, (64.2%) paid less than 50 Birr, and only 16(6.2%) paid more than 400 Birr for their induced abortion. All of those who had monthly income more than 1500 Birr, 100% (12) were institution based abortions. Among 59 (22.7%) contraceptive user respondents for their aborted pregnancy, the largest percent, 30 (50.8 %) had used oral contraceptives.

Table 2: Obstetric characteristics among reproductive age women, in Mekelle town, Ethiopia, 2011 (n=260)

Characteristics		Frequency	Percent
Number of children	No	118	45.4
	One-two	85	32.7
	Three or more	57	21.9
Number of abortion	One	240	92.3
	Two or more	20	7.7
Order of abortion	First pregnancy	149	57.3
	Second pregnancy	86	33.1
	Third pregnancy	45	17.3
determinants of abortion	Lack of contraceptive	4	1.5
	Contraceptive failure	43	16.5
	Lack of awareness	37	14.2
	Child spacing	39	15.0
	Rape	37	14.2
	Incest	22	8.5
	Health problem	56	21.5
	Others ♥	23	8.8
Place of abortion	Health institution	213	81.9
	Her home	40	15.4
	Traditional healer's house	11	4.2
Doer of abortion	Health professional	215	82.7
	Non health professional	49	18.3
Admission	Yes	48	18.5
	No	212	81.5
Duration of admission	One day	12	4.6
	Two-five days	30	11.5
	More than five days	6	2.3
Complication	Yes	72	27.7
	No	188	72.3
Amount of birr paid	Less than 50 Birr	167	64.2
	55-99 Birr	29	11.2
	100-199 Birr	26	10.0
	200-400 Birr	22	8.5
	Greater than 400 Birr	16	6.2

♥ = Religion issue, separation, Unwanted pregnancy, Lack of economies, not to interrupt school, sex before marriage, divorce.

5.3 Determinants of induced abortion related variables

From the total interviewed women, 56(21.5%) respondents were replied health problem as their determinants of induced abortion. Contraceptive failure and child spacing were the next most common determinants reported with 43(16.5%) and 39 (15%) respectively. Those women who had lack of awareness and rape had also significant number, (Figure-1 below). Among teenagers 33.5% respondents had raped when compared to higher age group, 25-29 years, only 8.3%. Rape with 14.2% and incest with 8.5% had significant numbers as determinants of induced abortion among those women who had never married; whereas married women had child spacing with higher percent (16.5%) as determinants of induced abortion. Contraceptive failure and lack of awareness were equally found as determinants of induced abortion among student respondents with 16.9% (11) each.

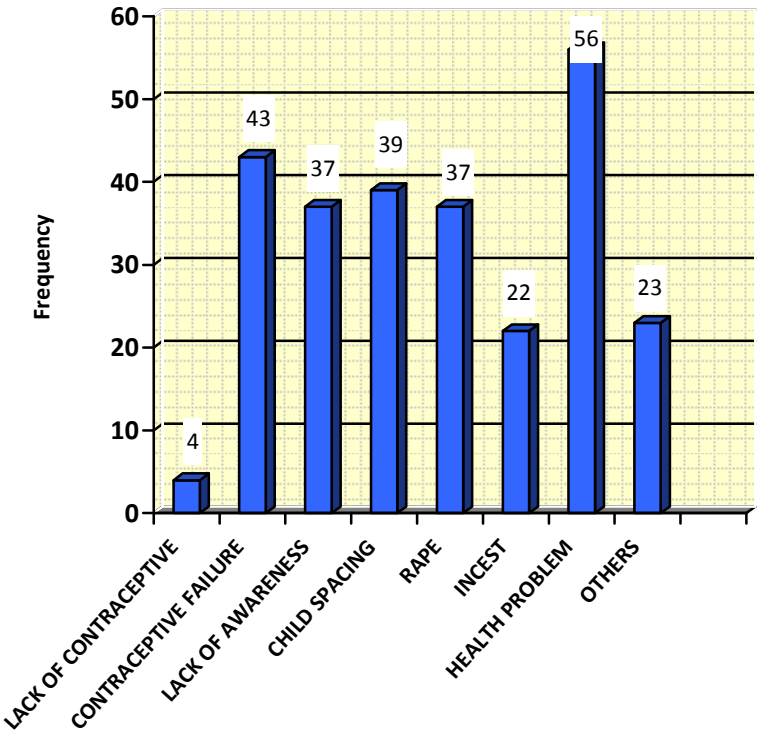


Figure.2. The determinants of induced abortion among reproductive age women, Mekelle, 2011.

NB: "others" in figure 2 include- Religion issue, separation, unwanted pregnancy, Lack of economies, not to interrupt school, sex before marriage, Divorce.

When described the outcome of induced abortion, among the total women, 240(92.3%) were experienced only one induced abortion, and 20(7.7%) were experienced more than one induced abortion; out of which 18 (90%) were experienced two times and 2(10%) had three times induced abortion. The order of pregnancies induced were also showed that first order of pregnancies induced covers larger percent 149(57.3%) than second and third or more, as shown in figure 3 below.

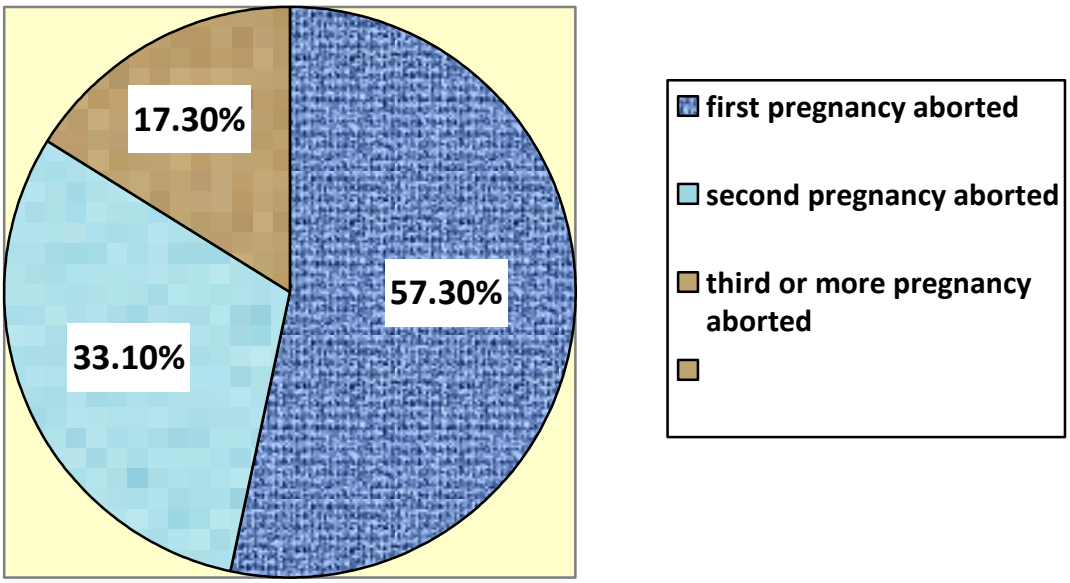


Figure.3. Frequency of order of pregnancies aborted among reproductive age women, Mekelle, 2011

At the end when the distribution of determinant variables of induced abortion had described, health problem had highest percent among only one induced abortion 48(20.0%) and with more than one induced abortion 8(40.0%). Child spacing and rape had the next higher proportion among respondents with one induced abortion 38(15.8%) and 36(15.0%) respectively. Lack of awareness 5(25.0%), was the next (to health problem) largest percent among more than one induced abortion, as shown in figure 4 below.

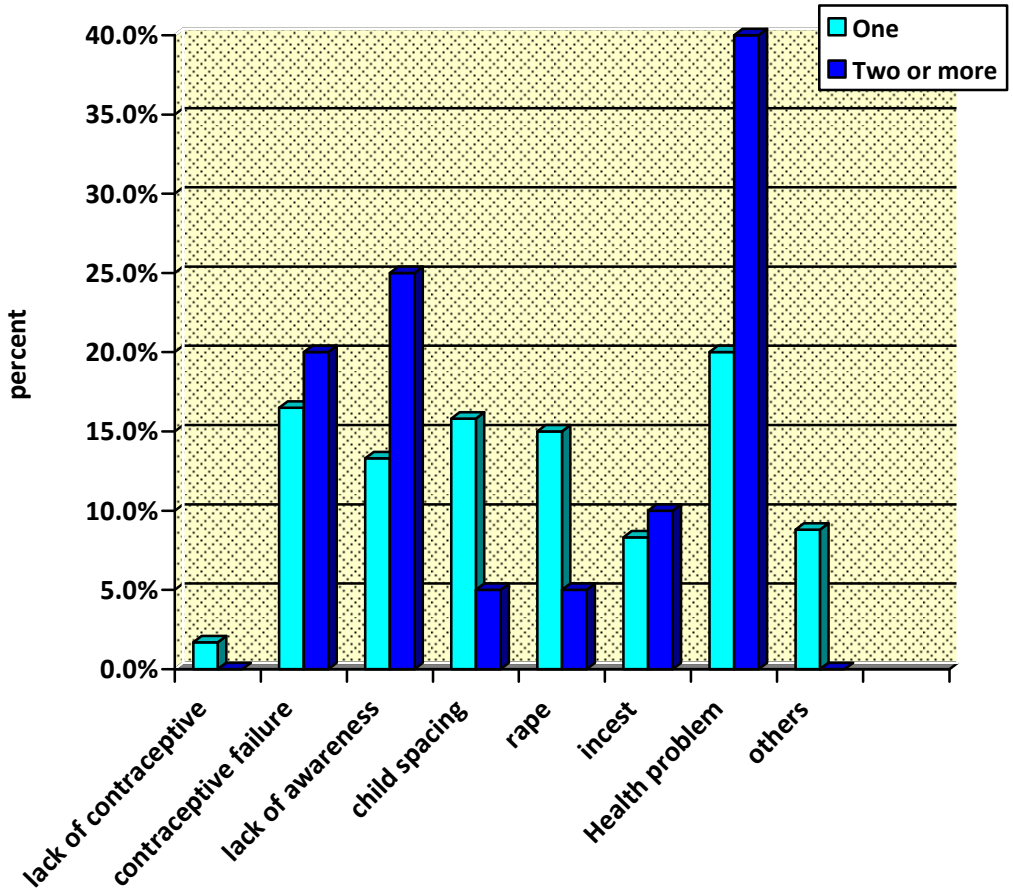


Figure.4. Determinants of induced abortion by number of abortion among reproductive age women, Mekelle, 2011.

NB: others include- Religion issue, separation, unwanted pregnancy, Lack of economies, not to interrupt school, sex before marriage, Divorce.

5.4. Association of variables with induced abortion

The assessment of association was calculated based on bivariate and multivariate binary logistic regression. The socio demographic status of respondents and determinants of induced abortion were compared their association with order and number of induced abortion. Most of the outcomes of socio demographic characteristics were not associated with the dependant variables. Some variables, like educational status, occupation, marital status, number of children, and determinants like health problem, child spacing, rape and incest, were associated with the order and number of induced abortion (Table 3).

As compared with students as occupational status, commercial sex workers were more likely to have more than one induced abortion, (COR=9.75, 95% C.I (1.45, 65.78). Women who had no children had less likely chance to have more than one induced abortions, (COR = 0.271, 95%, C.I (0.084, 0.870) than those with three or more children. When we compare with those who had not health problem as determinant, those women with health problem were more likely to hove more than one induced abortion (COR=2.667, 95%, C.I (1.032, 6.887); and also, those who had admitted had high chance to have more than one induced abortion (COR=3.333, 95%, C.I (1.280, 8.678), than those did not admitted. Contraceptive related variables, lack of awareness, rape, incest, and child spacing did not show association in the crude odds ratio with number of induced abortion.

The association using multivariate binary logistic regressions showed that most of independent variables had no association with number of induced abortion. Those daily worker women had less likely possibility to have more than one induced abortion (AOR =0.003, 95% C.I (0.000, 0.600), than students. As compared to those who had three or more pregnancy, those with one to two number of pregnancy had less likely chance to have more than one induced abortion, (AOR=

0.013, 95% C.I (0.001, 0.325). Those women who were admitted for their induced abortion were more likely to have more than one induced abortion (AOR =3.34, 95% C.I (1.07, 10.39), as compared to those did not admitted. The age, marital status and educational status were not associated with number of induced abortion. Variables like health problem, lack of awareness, child spacing, rape and incest had also not associated with induced abortion when calculated the adjusted odds ratio.

Table 3: Demographic and determinant variables by number of induced abortion in Mekelle town, Ethiopia, 2011. (n=260).

Characteristics	Number of induced abortion			
	One No (%)	More than one No (%)	COR (95% C.I.)	AOR (95% C.I.)
Occupation				
Housewife	107(44.6)	10(50.0)	3.037(0.645, 14.298)	0 .267(0.011, 6.22)
Gove employed	31(12.9)	4(20.0)	4.194(0.728, 24.143)	5.481(0.05, 648.5)
Commercialsex work	10(4.2)	3(15.0)	9.75(1.445, 65.780)*	0.482(0.014, 16.25)
Daily worker	27(11.3)	1(5.0)	1.20(0.105, 13.838)	0.003(0.000, 0.600)*
Students	63(26.3)	2(10.0)	1	1
Number of children				
No	113(95.8)	5(4.2%)	0.27(0.084, 0.87)*	27062.9(25.70,2848)
One to two	78(91.8%)	7(8.2%)	0.55(0.188,1.611)	5.047(0.281, 90.525)
Three or more	49(86.0%)	8(14.0%)	1	1
Number of pregnancy				
One	110(45.8)	0(0.0)	0.000(0.000 .)	0.000(0.000,----)
two- three	80(33.3)	9(45.0)	0.511(0.198, 0.321)	0.013(0.001, 0.325)
four or more	50(20.8)	11(55.0)	1	1
Contraceptive failure				
Yes	34(14.2)	4(20.0)	1.515(0.478, 4.804)	1.631(0.412, 6.46)
No	206(85.8)	16(80.0)	1	1
Lack of awareness				
Yes	32(13.3)	5(25.0)	2.167(0.737, 6.37)	2.063(0.56, 7.58)
No	208(86.7)	15(75.0)	1	1
Child spacing				
Yes	38(15.8)	1(5.0)	0.28(0.036, 2.15)	0.139(0.016, 1.197)
No	202(84.2)	19(95.0)	1	1
Rape				
Yes	36(15.0)	1(5.0)	0.298(0.039, 2.3)	0.75(0.07, 7.17)
No	204(85.0)	19(95.0)	1	1
Incest				
Yes	20(8.3)	2(10.0)	1.222(0.264, 5.65)	4.774(0.70,32.55)
No	220(91.7)	18(90.0)	1	1
Health problem				
Yes	48(20.0)	8(40.0)	2.667(1.032, 6.887)*	0.823(0.142, 4.77)
No	192(80.0)	12(60.0)	1	1
Admission				
Yes	40(16.7)	8(40.0)	3.333(1.280, 8.68)*	3.505(1.202,10.226)*
No	200(83.3)	12(60.0)	1	1

NB: *= p-value < 0.05, ** = p-value < 0.01, *** = p-value < 0.001

Binary logistic had been also used to assess the association of independent variables with order of pregnancies aborted. Those who were married and those who were divorced/widowed had less likely chance to have first pregnancy induced abortions, (COR = 0.058, 95%, CI (0.021, 0.160) and (COR = 0.056, 95%, CI (0.018, 0.172) than co-habitants. When compared with those, secondary school and above, those who had no formal education had less likely chance to have first pregnancy induced abortion, with COR = 0.27, 95%, C.I (0.153, 0.49); that is, those with educational level secondary school and above were 3.636 times more likely to induce their first pregnancy. As compared to the students, all other occupations had negatively associated with first pregnancy induced abortion, as shown in table 4 below. This showed that students were 26.6 times more likely to induce their first pregnancy than others, (COR=26.667, 95% C.I. (7.9, 89.77).

Women with health problem as determinants were more likely to induce their first pregnancy (COR= 2.53, 95%, C.I (1.34, 4.79), than those did not have health problem. Those who had rape and incest were also more likely to have first pregnancy induced abortion, with (COR=3.745, 95%, C.I (1.579, 8.88) and (COR= 5.262, 95%, C.I (1.52, 18.26) respectively. Other determinants did not have association with first pregnancy induced abortion.

As indicated in the outcomes of multivariate binary logistic regression, married and divorced/widowed had less likely chance to have first induced abortion, (AOR=0.14, 95% C.I (0.04, 0.49) and (AOR =0.15, 95% C.I (0.04, 0.6) respectively than co-habitants. Among occupational status, commercial sex workers had less likely to have first pregnancy induced abortion (AOR =0.111, 95% C.I (0.01, 0.89), than students. Rape and incest had not associated in the multivariate binary logistic regression.

Table 4. Determinant variables by First pregnancy induced abortion of respondents in Mekelle town, Ethiopia, 2011. (n=260).

Characteristics	First pregnancy induced abortion			
	yes	No	COR (95% C.I.)	AOR (95% C.I.)
Marital status				
Single	64(43.0)	3(2.7)	2.73(0.61, 12.08)	2.8(0.54, 15.0)
Married	32(21.5)	71(64.0)	0.058(0.021, 0.160)***	0.14(0.04,0.49)**
Divorced/Widowed	14(9.4)	32(28.8)	0.056(0.018,0.172)***	0.15(0.04, 0.6)**
Co-habitant	39(26.2)	5(4.5)	1	1
Level of education				
No formal education	33(22.1)	60(54.1)	0.27(0.153,0.49) ***	0.36(0.12,1.11)
Primary	46(30.9)	16(14.4)	1.44(0.71, 2.89)	0.50(0.16,1.64)
Secondary & above	70(47.0)	35(31.5)	1	1
occupation				
housewife	65(58.6)	52(34.9)	0.038(0.01, 0.126)***	0.222(0.04,1.12)
Govt. employed	22(19.8)	13(8.7)	0.028(0.007, 0.12) ***	0.172(0.027,1.11)
Commercial sex work	7(6.3)	6(4.0)	0.040(0.008, 0.19) ***	0.111(0.01,0.89)*
daily worker	14(12.6)	14(9.4)	0.047(0.012, 0.18) ***	0.195(0.03,1.21)
student	3(2.7)	64(43.0)	1	1
Economical status				
Less 500 Birr	120(80.5)	70(63.1)	3.42(0.996,11.79)	7.142(1.01,50.4)
500-1500 Birr	25(16.8)	33(29.7)	1.51(0.41, 5.604)	4.72(0.69,32.14)
Morethan1500 Birr	4(2.7)	8(7.2)	1	1
Lack of contraceptive				
Yes	3(2.0)	1(0.9)	2.260(0.23, 22.024)	3.38(0.22,51.15)
No	146(98.0)	110(99.1)	1	1
Contraceptive failure				
Yes	22(14.8)	16(14.4)	1.029(0.512, 2.064)	0.66(0.15, 2.98)
No	127(85.2)	95(85.6)	1	1
Lack of awareness				
Yes	23(15.4)	14(12.6)	1.265(0.619, 2.58)	1.040(0.234, 4.6)
No	126(84.6)	97(87.4)	1	1
Rape				
Yes	30(20.1)	7(6.3)	3.745(1.579, 8.88)**	0.804(0.15, 4.19)
No	119(79.9)	104(93.7)	1	1
Incest				
Yes	19(86.4)	3(13.6)	5.262(1.52, 18.26)**	1.98(0.32, 12.18)
No	130(54.6)	108(45.4)	1	1
Health problem				
Yes	22(14.8)	34(30.6)	0.392(0.214, 0.71)**	0.50(0.12, 2.02)
No	127(85.2)	77(69.4)	1	1

NB: ****= p-value < 0.05, ** = p-value < 0.01, *** = p-value < 0.001***

The independent variables were calculated their association with second pregnancy induced abortion to see the crude and adjusted odds ratio. Compared with students, commercial sex workers were more likely to induced their second pregnancy, (COR=25.20, 95% C.I (5.6, 113.7). Those who had child spacing as determinants had significantly higher chance to have second pregnancy induced abortion (COR=3.175, 95% C.I (1.582, 6.37) than those did not have child spacing. Those with health problem were also more likely to induce their second pregnancy (COR=2.080, 95% C.I (1.135, 3.810). But those who had rape as their determinants had less likely chance to have second pregnancy induced abortion, (COR=0.149, 95% C.I (0.044, 0.50).

The AOR outcome of those variables had also shown association. Commercial sex workers had significantly higher chance to induce their second pregnancy (AOR= 14.37, 95% C.I (2.30, 89.53) than students. Women with less than 500 Birr monthly income were less likely to induce their second pregnancy than those with 1500 or more Birr, (AOR= 0.12, 95% C.I (0.021, 0.67). This implies that even though the governmental institutions render cost free induced abortion, clients prefer clandestine procedures which might be due to lack of social acceptance. Child spacing as determinants had shown more chance to have second pregnancy induced abortion, (AOR= 10.27, 95% C.I (2.76, 38.25), than others. Women with health problem as determinants of induced abortion, were also more likely to induce their second pregnancy (AOR= 6.876, 95% C.I ((1.93, 24.41), as compared with those did not have health problem as determinants.

Table 5: Determinant variables by Second pregnancy induced abortion of respondents in Mekelle town, Ethiopia, 2011. (n=260).

Characteristics	Second pregnancy induced abortion			
	yes	No	COR (95% C.I.)	AOR (95% C.I.)
Marital status				
single	5(5.8)	62(35.6)	0.43(0.12,1.44)	0.60(0.15, 2.505)
married	54(62.8)	49(28.2)	5.8(2.379,14.26)***	1.26(0.39,4.062)
divorced/widowed	20(23.3)	26(14.9)	4.06(1.501,11.01)**	0.86(0.245,3.016)
co-habitant	7(8.1)	37(21.3)	1	1
Occupation				
housewife	50(58.1)	67(38.5)	11.75(4.01,34.4)***	2.82(0.69,11.45)
Govt. employed	18(20.9)	17(9.8)	16.67(4.98,55.8)***	1.36(0.27, 6.93)
Commercial sex work	8(9.3)	5(2.90	25.20(5.6,113.7)***	14.37(2.30,89.5)**
daily worker	6(7.0)	22(12.6)	4.29(1.10, 16.65)*	0.95(0.17, 5.228)
student	4(4.7)	63(36.2)	1	1
Economical status				
Less 500 Birr	49(57.0)	141(81.0)	0.17(0.05,0.60)**	0.12(0.021, 0.677*
500-1500 Birr	29(33.7)	29(16.7)	0.5(0.14,1.85)	0.28(0.05, 1.56)
Morethan1500 Birr	8(9.3)	4(2.3)	1	1
Contraceptive failure				
Yes	16(18.6)	22(12.6)	1.579(0.782, 3.19)	5.77(1.54, 21.61)
No	70(81.4)	152(87.4)	1	1
Child spacing				
Yes	22(25.6)	17(9.8)	3.175(1.582,6.37)**	10.27(2.7, 38.3) **
No	64(74.4)	157(90.2)	1	1
Rape				
Yes	3(3.5)	34(19.5)	0.149(0.04,0.50)**	0.686(0.136, 3.463)
No	83(96.5)	140(80.5)	1	1
Health problem				
Yes	26(30.2)	30(17.2)	2.080(1.14, 3.81)*	6.876(1.9,24.4) **
No	60(69.8)	144(82.8)	1	1

NB: ****= p-value < 0.05, ** = p-value < 0.01, *** = p-value < 0.001***

The third or more pregnancies induced abortion were also calculated related to independent variables of induced abortion, married and those divorced/widowed were more likely to induced their third or more pregnancies, (COR= 13.06, 95% C.I (1.70, 99.92) and (COR= 30.25 95% C.I ((3.82, 239.2) respectively than cohabitants. Respondents with health problems as their determinants had significantly higher chance to have induced abortion for their third or more pregnancies, with COR= 2.122, 95% C.I (1.05, 4.303) and (AOR= 4.553, 95% C.I (1.008, 20.57), than those with other determinants of their induced abortion. Divorced/widowed women had also significant association with third or more pregnancies abortion with AOR= 17.7, 95% C.I (1.7, 182.16). The rest variables did not have association with third or more pregnancies induced abortion, shown below table 6.

Table 6. Determinant variables by Third or more pregnancy induced abortion of respondents in Mekelle town, Ethiopia, 2011. (n=260).

Characteristics	Third or more pregnancy induced abortion			
	yes	No	COR (95% C.I.)	AOR (95% C.I.)
Marital status				
single	1(2.2)	66(30.7)	0.65(0.04, 10.69)	0.79(0.04, 15.91)
married	24(53.3)	79(36.7)	13.06(1.70, 99.92)*	6.05(0.59, 62.1)
divorced/widowed	19(42.2)	27(12.6)	30.25(3.8,239.2)**	17.7(1.7, 182.16)*
co-habitant	1(2.2)	43(20.0)	1	1
Contraceptive failure				
Yes	4(8.9)	34(15.8)	0.519(0.175, 1.55)	(3.433(0.69,16.88)
No	41(91.1)	181(84.2)	1	1
Lack of awareness				
Yes	8(17.8)	29(13.5)	1.387(0.588, 3.27)	4.291(0.9, 20.47)
No	37(82.2)	186(86.5)	1	1
Child spacing				
Yes	10(22.2)	29(13.5)	1.833(0.82, 4.096)	1.969(0.37, 10.35)
No	35(77.8)	186(86.5)	1	1
Rape				
Yes	5(11.1)	32(14.9)	0.715(0.26, 1.948)	0.569(0.05, 6.15)
No	40(88.9)	183(85.1)	1	1
Incest				
Yes	1(2.2)	21(9.8)	0.210(0.028, 1.60)	4.553(1.008, 20.57)
No	44(97.8)	194(90.2)	1	1
Health problem				
Yes	15(33.3)	41(19.1)	2.122(1.05, 4.303)*	4.553(1.01, 20.6)*
No	30(66.7)	174(80.9)	1	1

NB: ****= p-value < 0.05, ** = p-value < 0.01, *** = p-value < 0.001***

CHAPTER VI: Discussion

The aim of this study is to assess the determinants of induced abortion among reproductive age mothers. A decline in desired family size and lack of awareness to control unwanted pregnancy leads to an increase in risk of induced abortion and its consequences. A study of this type is thus; very important to assess the type and description of the determinant factors that influence induced abortion.

6.1 Demographic factors

Though the determinants might require to be investigated in detail, demographic characteristics are also likely contributing factor for induced abortion. The mean age of respondents who experienced induced abortion was 26.22±7.01, which is greater than the mean age of women seeking induced abortion in Ethiopia, in 2008 annual report (9, 23) that was 23 years. Even though there may be delay in first sex in this study, young women are still at risk for induced abortion.

Being unmarried and co-habitants contribute to first pregnancy induced abortion. Similar to a study conducted in China on sexually active attendees (18) that was the main response, single women had higher proportion (43.0%) to induce their first pregnancy than married women, (21.5%), and married women were 0.021 times less likely to induce their first pregnancy, than single in its crude odds ratio. Married women were also 0.14 times less likely to induce their first pregnancy in the adjusted odds ratio, than cohabitants. It is also true in this study that divorced/widowed women were less likely to induce their first pregnancy than cohabitant (AOR =0.15). This might indicates that cohabitant and single women may not be in stable parenthood when become pregnant, and could be lack of conformity one to have child before marriage.

Commercial sex worker were 14.37 times more likely to induce their second pregnancy than students, (AOR=14.37), but daily laborer had 0.003 times less likely to have more than induced abortion, than students. This is similar to the study done in North West Ethiopia, in 2003(28), that being student was the reason to induce abortion. This study showed that commercial sex workers were more exposed to unprotected sex than students. Students might have difficulty to give birth not to interrupt school, and have economical and social burden.

Unlike to the cross-sectional study done in Agaro town, Ethiopia, in 2006, (28, 29), that as educational status increases, the likelihood of induced abortion decreases, respondents with no formal education had 0.27 times less likely to induce their first pregnancy. This is also in line with that of U.S, study on reproductive age women (16), that the likelihood of induced abortion was decreased among less than 12 grades than greater than 12 grades. It could be the first pregnancy that occurred during school time that they prefer to complete their education.

The women with low monthly income were 7.142 times more likely to induce their first pregnancies than more income. This is unlike the study in Brazil, in 2006 (22), that the likelihood of induced abortion was 4 times higher among high income than low income. This might be related to that the induced abortion done in this study area is cost free and the need for reducing economical burden on their family. Women with a few numbers of pregnancies were 0.013 times less likely to have more than one induced abortion, than more pregnancies; which might be related to the want for reducing economical burden on the family. This is unlike to the study in North West Ethiopia, (2003), that the number of pregnancies was negatively associated with induced abortion.

Respondents that were admitted secondary to induced abortion were also more likely to have more than one induced abortion, (AOR =3.505). One third of the respondents 33.07% were either not in institution or not by health professionals (unsafe abortion), which is less than that of study in developing nations of Africa, 2003(5, 15), that 55% were unsafe abortion. Among those who had complications, the non institution based induced abortions had higher proportion, (Traditionalist's house 40.0% and her home 35.0%) than those with institution based abortion 25.7%. In this study, no one reports male disapproval as determinants of induced abortion; which implies women are independent of males to decide their pregnancies. This is unlike the study in Ethiopia, in 2008(25) that the partner decision for induced abortion was 9.3%.

6.2 Other determinants of induced abortion

The most frequent determinant mentioned by the participants of this study for induced abortion was health problem. Health problem covers 56(21.5%), respondents that were 6.87 times more likely to induce second pregnancy, and 4.50 times more likely to induce their third pregnancy in the AOR. It might be the life style that pregnant mothers did not use optimal nutrition during pregnancy; and the distribution and capacity of health institutions to address maternal health problem as early as possible might be also poor. This result is similar to a study conducted in Spain in 2004(11), that living conditions and personal health influences the induced abortion rate.

Child spacing was the next determinant, showed significant association with second pregnancy induced abortion, (AOR=10.27) and it was with highest proportion among married and commercial sex workers. This result showed that, those respondents might engage to continuous sexual contact, and could have lack of knowledge to prevent unwanted pregnancies.

Women with contraceptive failure were also 5.77(AOR) times more likely to induce their second pregnancy and it was 14.6%, among respondents that decreases from the nationwide hospital based survey in Ethiopia in 2000(25), which was 19%. Even though there is good supply of contraceptives, respondents did not have enough knowledge about timing, and use of contraceptives; and this might also indicates the need of long term contraceptive which reduces failure.

Unlike the nationwide hospital based survey in Ethiopia (25), in which 3% of the abortion survivors reported rape, 14. 2% of the respondents in this study had rape as determinants of induced abortion. Even though it had no association in the AOR, rape had 3.74 times higher chance to have first pregnancy induced abortion. Incest was 8.45%, with significantly higher chance to have first pregnancy induced abortion (COR=5.26). This might be related to the negative impact of unrestricted law of abortion in Ethiopia 2006; rape and incest are criteria to induce abortion legally.

Lack of contraceptives (only 1.5%) and lack of awareness were not associated with induced abortion in the multivariate binary logistic regression out come. Lack of contraceptives was unlike to the nationwide hospital based survey in Ethiopia (25) that was the most common reason for termination of pregnancy. This result showed that the supply of contraceptives is relatively good.

Unlike to a study in Turky, in 2002(25), which was 64.6% unwanted pregnancy; 2.7% determinants of induced abortion in this study were unwanted pregnancy, that significantly reduced from the previous nationwide hospital based survey in Ethiopia, which was 50%. The unmarried reason to induce abortion (0.7%) was not similar to the cross sectional study in

northwest Ethiopia in 2003(28), which was 31.3%. In general, Religion issue, separation, unwanted pregnancy, lack of economies, not to interrupt school, and Sex before marriage, had also appreciable contribution on induced abortion.

6.3 Strength and limitation of the study

Strength of the study:

- It is primary data, which can be used as base-line information for intervention programs and further study.
- Non response rate were absent.

Limitation of the study:

- There may be mothers in the community with other determinants who do not visit the MCH clinic during data collection period.
- Study is less representative since it uses convenient sampling.

CHAPTER VII: Conclusion and Recommendation

7.1 Conclusion

The study tried to assess the determinants of induced abortion among survivors in the reproductive age mothers in Mekelle town. Participants in this study were women who experienced induced abortion that attends MCH clinic in the selected Mekelle town health institutions. From the study findings, the following conclusions are drawn.

Firstly, most of the respondents, experienced induced abortion were under the age of 25 years; and more than half (57.3%) of respondents were induced only their first pregnancy. Unmarried and co-habitant women were more likely to induce their first pregnancies. It is also true in this study that being commercial sex workers and low monthly income were influential factors for induced abortion.

The most common determinants of induced abortion reported were health problems and child spacing. Contraceptive failure, rape and incest had also substantial contribution among determinants of induced abortion. Other determinants like lack of awareness, lack of contraceptive were not associated with the induced abortion. Had it been avoided all those determinants, dramatic reduction in induced abortion and its complications would be succeeded.

At the end, these findings highlight the need for greater understanding of the determinants of induced abortion among reproductive age women in Mekelle town. Besides, elaborating the meaning of determinants of induced abortion is another importance of this study.

7.2 Recommendation

To reduce number of induced abortion and its determinants & complications of reproductive age women, the following recommendations are made based on the above findings:

1. In a high number of induced abortion communities, the concern that immediately comes to mind would be the expansion of health education related to information about how and when to control unwanted pregnancies.
2. It is recommended that health professionals and community health workers should help the reproductive age women to develop strategies for social, psychological and financial readiness to conceive child in their families with appropriate size.
3. Policy makers and community leaders should condemn that rape and incest have moral, physical, and religious trauma on the victim, which is legally, ethically and socially unacceptable.
4. Notwithstanding the unrestricted law of abortion; a number of women perform unsafe abortion. Health professional should give attention to maternal health during pregnancy and abortion by advising institution based abortion, health follow up, and safeguards of accidents.
5. Another recommendation that require due consideration is the pre marital sex. Health professional, policy makers and leaders should create awareness in the community that the unwanted pregnancy would have cultural, economical and psychological impacts secondary to the outcome of the pregnancy.
6. To address the issue of financial constraints of performing the above all mentioned recommendations, personal, governmental and donor agencies role is mandatory.
7. Conducting further researches with triangulation of quantitative and qualitative designs including other areas of Ethiopia will be more helpful to better understand the determinants of induced abortion.

Reference:

1. Kenneth J. Steven L. John C. et al, McGraw-Hill Companies medical publishing division, Williams Obstetrics, twenty-second edition, Section III. Antepartum, Chapter 9. Abortion, 2007, P 232-251
2. Wirth M. Sacks E. Delamonica E. Storeygard A. MinujinA. and Balk D. delivering" on the MDGS: equity and maternal health in Ghana, Ethiopia and Kenya, East African Journal of Public Health, December 2008, 5(3):
3. Singh s. and Fetters T. Access to Abortion Step By Step, Ethiopia Pushes Back Unsafe Abortion, a report jointly authored by Ipas and the Guttmacher Institute, April 13, 2010
4. Marie Stopes International, Safe abortion and post abortion care, 17 October 2010 http://www.mariestopes.org/Health_programmes/Safe_abortion_%5e_post_abortion_care/Forced_to_use_unsafe_services.aspx**,** **[**accessed on 17/10/2010.]
5. Stanley K. Haw H. Singh S. and Haas T., The Incidence of Abortion, Supplement, International Family Planning Perspectives 1999, 25(Supplement):30–38
6. *Rasha Dabash and Farzaneh Roudi-Fahimi, Abortion in the Middle East and North Africa, 2009,* http://www.prb.org/Publications/PolicyBriefs/abortion-mena.aspx*, accessed on 17/10/201*
7. Eyob Berihun M.D.[1], Asheber Gaym M.D.,A Data Base on Abortion Literature Review, May*, 2007,* http://www.esog.org.et/A%20data%20base%20on%20abortion%20literature.htm, *[accessed on 17/10/2010.]*
8. Yirgu Gebrehiwot, and Tippawan Liabsuetrakul, Trends of abortion complications in a transition of abortion law revisions in Ethiopia, online-August 14, 2008, http://www.jpubhealth.oxfordjournals.org/content/31/1/81.full.pdf+html/, *accessed on 15/10/2010*
9. Singh S. Fetters T. Gebreselassie H., The estimated incidence of induced abortion in Ethiopia, International Perspectives on Sexual and Reproductive Health, J. of reproductive health, March 2010, 36,(1),pp16-25
10. Federal Democratic Republic of Ethiopia, Ministry of health, Health sector development program III, Annual performance report, 2009/2010. P 37-38

11. Abdella A. , Socio-Economic Determinants Of Abortion Rates, Oct 2004, http://ideas.repec.org/cgi-bin/ref.cgi?handle=RePEc:uam:wpaper:201002&output=0, *accessed on 16/10/2010*
12. Seltzer S. as thunder is not yet rain, in ethiopia, legal rights to abortion are not yet access, RH Reality Check report, April 21, 2009,
13. Karen O. Solomon T. Aregawi G et al. *Monitoring safe abortion care service provision* International J. of Gynecology and Obstetrics, 2007 (95): pp 209-220.
14. nyblade L. edmeades J. pearson .E., self reported abortion related morbidity, international perspectives on sexual and reproductive health, 2010, 36(3):140-148
15. Lisa B. Haddad, MD, MA,* Nawal M. Nour, Unsafe Abortion: Unnecessary Maternal Mortality, reviews in obstetrics & gynecology, *MedReviews®, LLC, 2009* VOL. 2 NO. 2, p. 122-126
16. Powell-Grinen E. Trent K., Socio demographic Determinants of Abortion in the United States, November 1987 24(4):pp. 553-561,
17. Bose S, Trent K., Socio-demographic determinants of abortion in India, J Biosoc Sci. 2006 Mar;38(2):261-82
18. Xu Qian, Tang S. and Garner P. Unintended pregnancy and induced abortion among unmarried women in China: BMC Health Services Research, 22 January 2004, 4:(1),
19. Tu Ping and Herbert L. Smith, Determinants of Induced Abortion and their Policy Implications in Four Countries in NorthChina, Studies in Family Planning, Sep. - Oct., 1995 26(5): pp. 278-286
20. Ali Ihsan Ali Bozkurt I. Özcirpici B. Ozgur S. Sahinoz S. Sahinoz T. Saka G. et al Induced abortion and effecting factors of ever married women, unpublished article BMC Public *Health* 2004 available from: http://www.biomedcentral.com/1471-2458/4/65
21. Bernabe A. White PJ, Carcamo CP, Hughes JP, Gonzales MA, Garcia PJ, et al. Clandestine induced abortion: prevalence, incidence and risk factors among women in a Latin American country. CMAJ 2009, Feb 3;180(3):298-304.
22. *Greice M. S. Menezes. E. M. L. Diorlene A. Silva O.* Induced abortion during youth, Cad Saude Publica., Jun, 14, 2006, 22(7): pp.1431-46,

23. Benson J. Nicholson L.A. Gaffucin L. and Kinotp S. N., complications of unsafe abortion in sub-saharan africa, health policy and planning; oxford university press 1996, 11(2): 117-131
24. Okonofua F. FMCOG, FWACS, FICS, Abortion and Maternal Mortality in the Developing World, J Obstet Gynaecol Can 2006;28(11):974–979)
25. NES--GLOBAL, Survey of unsafe abortion in selected health facilities in Ethiopia, Ethiopian j. of reproductive health may 2007, 1(1), 28-43
26. Elias Senbeto[1], Getu Degu Alene[1], Nuru Abesno[2], Hailu Yeneneh, Prevalence and associated risk factors of Induced Abortion in northwest Ethiopia, *Ethiop. J. Health Dev.* 2005;19(1) 37-44
27. Medhanit wube assessment of factors influencing utilization of post abortion care aau. None published article, 2006, p 19-46
28. Gessessew A. and Mesfin M. Rape and related health problem in Adigrat zone, Ethiopia J. health dev. 2004,18(3) : 140-144
29. ESOG, Survey of Unsafe Abortion in Selected Health Facilities in Ethiopia, from June 1, 2000 to Dec 31, 2000, http://www.esog.org.et/Projects.htm, *[accessed on 20/10/2010.]*
30. Elul B. determinants of induced abortion *J. Biosocial Science*, 2010, **00**, 1–17

ANNEXES

Annex I: Information sheet.

Information sheet: For study on assessment of determinants of induced abortion among child bearing women attending MCH clinic.

Greeting- Hello!

My name is _____, this study is conducting by Gerezgiher Buruh, he came from Addis Ababa University Nursing department, post graduate school, and he has permission from Wereda administration. The reason why he came here is to conduct a research on assessment of factors that influences induced abortion among reproductive age mothers who experience induced abortion. The purpose of this study is to identify determinants of induced abortion and fore ward some recommendation to concerned bodies that will help to improve the existing efforts in the area of maternal health services. If you have experienced induced abortion currently or in the past five years, your participation is very important to the outcome of the study. If so, I would like to ask you some very personal questions which may take about 30 minutes. All the information that you are going to provide me will remain confidential and you don't need to mention your name. For this reason, I kindly request you to give me your sincere and truthful answer. All this is completely on voluntary bases and you have the right to refuse from participation. Participation or non-participation and refusal to answer questions will have no effect on your life. If you have further questions or would like to know the results of this study, please feel free to contact the principal investigator; with the following address.

Gerezgiher Buruh Abera

Cell phone: +251 914 15 71 21, E-mail: **loveingo@yahoo.com**

Annex II: Informed consent form

Informed consent form: For study on assessment of determinants of induced abortion among child bearing women attending MCH clinic.

Read the following paragraph for the selected person.

I have been informed about the purpose, advantage, and disadvantage of this study titled "assessment of determinants of induced abortion among child bearing age women attending MCH clinic". I have understood the information given and the participation is completely voluntary based. I have been told that my answers to the questions will not be given to anyone and not expect to write my name. Now I am giving my consent to participate in the study voluntarily.

"Do you agree to participate in the interview? Thank you!"

Yes, _____ (continue the interview)

No, _____ (skip to the next respondent)

Name of interviewer _____sign _____Date of interview __/__/__

Name of supervisor _____Sign _____Date of interview __/__/__

Time started _____time end_____

Annex III: information sheet Tigrigna version

<u>መብርሂ ቅጥዒ : ኣብ ክልል ትግራይ ከተማ መቐለ ዝካየድ ንምኽንያታት ኪይዲ ምንፃል ጥንሲ ኣብ መንነ ክሊ ዕድመ ወሊድ ዘለዋ ኣዴታት ንዝግበር መፅናዕቲ ዝተዳለወ፡፡</u>

ሰላመታ- ጥዕና ይሃበለይ!

ሽመይ _____ይባሃል, እዚ መፅናዕቲ ዝካየድ ብ/ሄር ቡሩህ እዩ፡፡ ካብ ኣዲስኣበባ ዩኒቨረሲቲ ሕክምና ፋካሊቲ ነርሲንግ ክፍሊ ትምህርቲ ካልኣይ ዲግሪ ብጥዕና ኣዴታት እዩ መፂኡ፡፡ ካብ ወረዳ ምምሕዳር ፍቓድ ኣለዎ፣ ናብዚ ዝመፀሉ ዓላማ ኣዴታት ጥንሲ ኣብ ዘጋጥመን ጊዜ ምኽኒያት ምንፃል ጥንሲ ክኾኑ ዝኽእሉ ፀገማት ንምፍላይ ዘተኮረ ፅንዓት ንምክያድ እዩ፡፡ ኣብዚ ፅንዓት ዝተረኽበ ውፅኢት ዘመናዊ ኣገልግሎት ጥዕና ንኣዴታት ብዝሕግዘሉ መንገዲ ንዝምልከቶ ኣካል ከፍልጥ ምኺኑ ይሕብር፡፡ እንድሕር ደኣ ምንፃል ጥንሲ ሕዚ ይኹን ኣብ ዝሓለፉ ሓሙሽተ ዓመታት ኣጋጢሙክን ዝፈልጥ ኮይኑ ናሃትክን ተሳትፎ ንውፅኢት እዚ መፅናዕቲ ዕዙዝ ግድ ኣለዎ፡፡ , እንድሕር ደኣ ኣጋጢሙክን ዝፈልጥ ኮይኑ ዝተወሰነ ንዓኽን ዝምልከት 30 ደቒቓ ዘይውድእ ሕቶ ክሓተክን ደሌ ኣለኹ፡፡ እዚ እትህባኒ ሓበሬታ ብምስጢር ከም ዝታሓዝን ሽምክን ምዝራብ ከምዘየድሊ ክሕብር ይፈቱ ፤ ስለ ዝኾነ ቅኑዕ መልሲ ንክትባኒ ብትሕትና ይላቦ፡፡ ኣብዚ ምስታፍ ብድሌት ጥራሕ እንትኾን ናይ ዘይምስታፍ መበትክን ዝታሓለወ እዩ፡፡ ምስታፍክንን ዘይምስታፍክንን ኣብ ሂወትክን ዘምፀኦ ሰዓቤን ፈፂሙ ከምዘየለ ክረጋግፀልክን ይፈቱ፡፡ ተወሳኺ ሕቶ እንተደኣ ሃሊኡክን ወይ ድማ ናይዚ መፅናዕቲ ውፅኢት ንምፍላጥ እንተደሊኽን በዚ ዝስዕብ ኣድራሻ ተጠቒምክን ብቐሊሉ ንበዓል ዋና መፅናዕቲ ምሕታት ትኽእላ ኢኽን፡፡

ገ/ሄር ቡሩህ ኣበራ

ቁፅሪ ስልኪ: +251 914 15 71 21, ኢመይል: **<u>loveingo@yahoo.com</u>**

Annex IV: informed consent form Tigrigna version

ናይ ስምምዕነት ቅጥዒ :ኣብ ክልል ትግራይ ከተማ መቐለ ዝካየድ ን ምኽንያታት ከይዲ ምንፃል ጥንሲ ኣብ መንነ ክሊ ወሊድ ዘለዋ ኣዴታት ንዝግበር መፅናዕቲ ዝተዳለወ፡፡

ንቃለመሕትት ንዝታሓረያ ኣዴታት እዚ ዝስዕብ ዓንቀፅ ይነበበለን፡፡

ብዛዕባ መኽንያታት ከይዲ ምንፃል ጥንሲ ኣብ መንነ ክሊ ወሊድ ዘለዋ ኣዴታት ዝግበር መፅናዕቲ ዓላማ፣ጥቕሙን ጉድኣቱን መብሪሂ ተዋሂቡኒ እዩ፡፡ ዝተዋሃበኒ መብሪሂ ዝተረዳእኹ እንትኾን ክሳተፍ ዝኽእል ብድሌተይ ምኺኑ ተገንዚብ ኣለኹ፡፡ ኣነ ዝህቦ ሓበሬታ ብምስጢር ከም ዝታሓዝን ሽመይ ምዝራብ ከምዘየድሊ እውን ተነጊሩኒ እዩ፡፡ እዚ ምኺኑ ፈሊጠ ብድሌተይ ኣብዚ መፅናዕቲ ይሳተፍ ከምዘለኹ ከረጋግፅ ይፈቱ ፡፡

“በዚ ሓሳብ ተሰማዕሚዕኽን ኣብዚመፅናዕቲ ንምስታፍ ፈቓደኛ ዲኽን ? የቕንየለይ!”

ፈቓደኛ እየ----------ሕቶ ይቕፅል

ፈቓደኛ ኣይኮንኩን _____ ናብ ካሊእ ይሓልፍ፡፡

ናይ ሓታቲ ሽም _____ፊርማ _____ዝሓተተሉ ዕለት __/__/__

ናይ ተቐፃሪ ሽም _____ፊርማ _____ተቐፃፀረሉ ዕለት __/__/__

ዝተጀመረሉ ሰዓት _____ዝተወደአሉ ሰዓት_____

Annex V: questionnaire English version

Questionnaire form: developed to study assessment of determinants of induced abortion in Mekelle town, 2011.

Instruction:

This form should be completed for each client in front of them. Make sure all questions are asked and write the answer clearly. Repeat the response of clients if their answer is vague before recording. Use right marks (√) to fill the alternatives and write clearly to fill the space.

Questionnaire code___/____/2010

A. Socio-demographic background of respondent.

S. No.	Item	Response
1	Name of health institution	1. Mekele hospital ☐ 2. Yeha hospital ☐ 3. Marrystops international ☐ 4. Queha hospita ☐
2	Where did you come from?	1. Kebele _____
3	Age of client	(in year)_____
4	What is your ethnic group?	1. Tigray ☐ 2. Amhara ☐ 3. Others, specify _____
5	What is your religion?	1. Orthodox ☐ 2. Catholic ☐ 3. protestant ☐ 4. Others, specify _____
6	Marital status of the client	1. Single ☐ 2. Married ☐ 3. divorced/widowed ☐ 4. Co-habitation (lived together friendly) ☐ 5. Other, specify_____
7	What is your occupation?	1. House wife ☐

		2. governmental Employee ☐ 3. commercial sex worker ☐ 4. Daily worker ☐ 5. Student ☐ 6. Others, specify_____
8	Level of education attained by client	1. No formal education ☐ 2. Primary ☐ 3. Secondary and above ☐
9	Monthly income of the client	1. <500 Birr (low) ☐ 2. 500-1500 (medium) ☐ 3. >1500 (high) ☐
10	For how long have you been living in this area?	1. for 6month ☐ 2. 6month-1year ☐ **3.** >1yera ☐
11	How many children do you have?	1. No ☐ 2. One up to two ☐ 3. three or more ☐

B. Questionnaire regarding abortion.

12	Total number of pregnancy	1. one ☐ 2. two up to three ☐ 3. four or more ☐
13	Total number of live birth	1. No ☐ 2. one ☐ 3. two up to three ☐ 4. four or more ☐
14	Total number of Stile birth	1. No ☐ 2. one ☐

		3. two up to three ☐ 4. four or more ☐
15	How many abortion did you have experienced?	1. One ☐ 2. Two ☐ 3. Three ☐ 4. Four or more ☐
16	In which pregnancy did the abortion occur? (more than two answer is posible)	1. First pregnancy ☐ 2. Second pregnancy ☐ 3. Third pregnancy or more ☐
17	In which gestational ages did the first pregnancy abortion occur?	1. No ☐ 2. less than 8weeks ☐ 3. 8 up to 12 weeks ☐ 4. > 12 up to 28weeks ☐
18	In which gestational ages does the second pregnancy abortion occur?	1. No ☐ 2. less than 8weeks ☐ 3. 8 up to 12 weeks ☐ 4. > 12 up to 28weeks ☐
19	In which gestational ages does the third pregnancy abortion occur?	1. No ☐ 2. less than 8weeks ☐ 3. 8 up to 12 weeks ☐ 4. > 12 up to 28weeks ☐
20	In which gestational ages does the fourth or more pregnancy abortion occur?	1. No ☐ 2. less than 8weeks ☐ 3. 8 up to 12 weeks ☐ 4. > 12 up to 28weeks ☐
21	What was/were the cause/causes of abortion/s?	1. Lack of contraceptive ☐ 2. Contraceptive failure ☐ 3. Lack of awareness ☐ 4. Child spacing ☐

		5. Rape ☐ 6. incest ☐ 7. Health problem ☐ 8. Others, specify _____
22	Where did you do the abortion process?	1. Health institution ☐ 2. Her home ☐ 3. traditional healer's house ☐ 4. Other, specify _____
23	Who was performing the abortion?	1. professional person ☐ 2. Trained traditional birth attendant ☐ 3. traditional healer ☐ 4. client her self ☐ 5. Others, specify_____
24	Was there any admission secondary to abortion?	1. Yes ☐ 2. No ☐
25	If there was admission, how many days did you have admitted?	1. One day ☐ 2. Two up to five days ☐ 3. Greater than five ☐
26	Was there any complication related to abortion?	1. Yes ☐ 2. No ☐
27	If there was complication, what was the main complication?	1. bleeding ☐ 2. mechanical trauma ☐ 3. infection ☐ 4. others, specify_____
28	How much Birr did you pay for the management?	1. less than fifty Birr ☐ 2. fifty up to ninety-nine Birr ☐ 3. one up to two hundred Birr ☐ 4. Two up to four hundred Birr ☐ **5.** Greater than four hundred Birr ☐

29	Have you ever use contraceptive for which abortion occur?	1. Yes ☐ 2. No ☐
30	If you were using contraceptives, what type of contraceptive were you using?	1. Oral contraceptive ☐ 2. Injectable contraceptive ☐ 3. Implantable contraceptive ☐ 4. Physical barriers ☐ 5. Traditional methods ☐ 6. Other, Specify_____

Annex VI: questionnaire Tigrigna version

መሕተቲ - ቕጥዒ፡ ኣብ ክልል ትግራይ ከተማ መቐለ ዝካየድ ንምኽንያታት ከይዲ ምንፃል ጥንሲ ኣብ ከሊ ዕድመ ወሊድ ዘለዋ ኣዴታት ንዝግበር መፅናዕቲ ዝተዳለወ፡፡

መምርሒ

እዚ ቕጥዒ ነንሕድሕዱ ኣብ ቅድሚ ተጠያቒ ክምላእ ኣለዎ፡፡ ኩሎም ሕቶታት ተጠይቕም ምኽኖምን ብግልፂ ዝተፃሓፉ ምኽኖምን ምርግጋፅ የድሊ፤ እቲ ናይ መማረፂ መልሲ ንምቕማጥ ድማ ናይ ትኽክል ምልክት ይጠቕሙ (√) ፡፡ ዝተወሃበ መልሲ ግልፂ እንተዘይኮይኑ ነቲ መልሲ ቅድሚ ምምዝጋቦም ብቓሎም ይድገሙ ፤ ዝፃሓፍ ተኾይኑ ብትኽክል ይፅሓፉ፡፡

መፍለይ ቃለመሕትት _____/_____/2010

ሀ. ናይ ተጠየቕቲ ማሕበራዊ ሂዎት ሓበረይታ

ተ ቁ.	መለኪዒ	መልሲ
1	ስም ጥዕና ትካል	መቐለ ሆስፒታል ☐ ያሓ ሆስፒታል ☐ ማሪስቶፕስ ኢንተርናሽናል ☐ ኪሓ ሆስፒታል ☐
2	ኣድራሻ	ቀበሌ----------
3	ዕድመ	(ብዓመት)_____
4	ብሄረሰብክን እንታይ እዩ?	ቲገረወይቲ ☐ ኣምሓረይቲ ☐ ካልእ, ይግለፅ _____
5	ሃይማኖትክን እንታይ እዩ?	ኦርቶዶክስ ☐ ሙስሊም ☐ ካቶሊክ ☐ ፕሮቲስታንት ☐ ካሊእ, ይግለፅ _____
6	ናይ መርዓ ኩንታት እንታይ ይመስል?	ዘይተመ ርዓወት ☐

		በዓልቲ ሓዳር ☐ ዝተፋተሐት ☐ ሰብኣያ ዝሞታ ☐ ብዕርክነት እትነብር ☐ ካሊእ, ይግለፃ _____
7	ስራሕክን እንታይ እዩ?	ኣላይት ስድራ ☐ ናይ መንግስቲ ሰራሕተኛ ☐ ስገአን ሸይጠን ዝሓድራ ☐ መዓልታዊ ሰራሕተኛ ☐ ተማሃሪት ☐ ካሊእ, ይግለፃ _____
8	ደረጃ ትምህርቲኽን ክንደይ እዩ?	ኣይተማሃርኩን ☐ መሃይምነት ዘጥፈአት ☐ ቀዳማይ ብርኪ ☐ ካልኣይ ብርኪ ወይ ካብኡ ንላዕሊ ☐
9	ወርሓዊ እቶትክን ክንደይ ይኸውን?	ትሕቲ 500 ቐርሺ (ትሑት) ☐ ካብ 500-1500ቐርሺ (ማእኸላይ) ☐ ካብ 1500 ቐርሺ ንላዕሊ (ልዑል) ☐
10	ኣብዚ ቦታ ክንደይ ግዜ ተቐሚጥክን ?	ን 6 ወርሒ ዝኣክል ☐ ካብ 6 ወርሒ - 1 ዓመት ☐ ልዕሊ ሓደ ዓመት ☐
11	ክንደይ ቆሉዑ ኣለዉኽን ?	የብለይን ☐ ካብ ሓደከሳብ ክልተ ☐ ካብ ሰለስተ ንላዕሊ ☐

ለ. ንምውራድ ጥንሲ ዝምልከት ቃለመሕትት.

12	ክንደይ ግዜ ጥንሲ ኣጋጢ ሙ ክን ?	ሓደ ☐ ካብ ክልተ ክሳብ ሰለስተ ☐ ካብ ኣርባዕተ ንላዕሊ ☐
13	ክንደይ ብሂወት ተወሊዶም ?	ብሂዎት ዝተወለደ የብለይን ☐ ሓደ ☐ ካብ ክልተ ክሳብ ሰለስተ ☐ ካብ ኣርባዕተ ንላዕሊ ☐
14	ብኣጋጣሚ መይቱ ዝተወለደ ኣጋጢ ሙ ክንዶ ይፈልጥ ?	ኣየጋጠ መ ንን ☐ ሓደ ግዜ ኣጋጢ ሙ ኒ ☐ ካብ ክልተ ክሳብ ሰለስተ ☐ ካብ ኣርባዕተ ንላዕሊ ኣጋጢ ሙ ኒ ☐
15	ክንደይ ግዜ ምንፃል ጥንሲ ኣጋጢ ሙ ክን ?	ሓደ ግዜ ☐ ክልተ ግዜ ☐ ሰለስተ ግዜ ☐ ካብ ኣርባዕተ ንላዕሊ ☐
16	መበል ክንደይ ጥንስኽን እዩ ምንፃል ጥንሲ ዘጋጠመክን? (ካብ ሓደ ንላዕሊ መልሲ ይካኣል)	ቀዳማይ ጥንሲ ☐ ካልኣይ ጥንሲ ☐ ሳልሳይ ጥንሲ ☐ ራብዓይን ልዕሊኡን ☐ ካሊእ ይግለፃ _____
17	ኣብ መበል ክንደይ ሰሙኑ እዩ ምንፃል ቀዳማይ ጥንሲ ኣጋጢ ሙክን?	ኣየጋጠመንን ☐ ትሕቲ 8 ሰሙን ☐ ካብ 8 – 12 ሰሙን ☐ ልዕሊ 12 ክሳብ 28 ሰሙን ☐
18	ኣብ መበል ክንደይ ሰሙኑ እዩ ምንፃል ካልኣይ ጥንሲ ኣጋጢ ሙክን?	ኣየጋጠመንን ☐ ትሕቲ 8 ሰሙን ☐ ካብ 8 – 12 ሰሙን ☐

		ልዕሊ 12 ክሳብ 28 ሰሙን ☐
19	መበል ክንደይ ሰሙኑ እዩ ምንፃል ሳልሳይ ጥንሲ ኣጋጢ ሙከን?	ኣየጋጠመንን ☐ ትሕቲ 8 ሰሙን ☐ ካብ 8 – 12 ሰሙን ☐ ልዕሊ 12 ክሳብ 28 ሰሙን ☐
20	መበል ክንደይ ሰሙኑ እዩ ምንፃል ካብ ራብዓይ ጥንሲ ንላዕሊ ዘጋጠመከን?	ኣየጋጠመንን ☐ ትሕቲ 8 ሰሙን ☐ ካብ 8 – 12 ሰሙን ☐ ልዕሊ 12 ክሳብ 28 ሰሙን ☐
21	ምኽንያት ምንፃል ጥንሲ እንታይ እዩ ?	መከላኸሊ ጥንሲ ዘይምህላው ☐ ዘይሰርሕ መከላኸሊ ጥንሲ ብምውሳደይ ☐ ዘይምፍላጠይ ☐ ኣራሓሒቐካ ንምውላድ ☐ ስለ ተደፈርኩ ☐ ናይ ቤተሰብ ጥንሲ ስለ ዝኾነ ☐ ናይ ጥዕና ፀገም ስለ ዘስዕበለይ ☐ ኣካላዊ ጉድኣት ስለ ዝበፀሓኒ ☐ ካሊእ, ይግለፃ _____
22	ምንፃል ጥንሲ ኣበይ እዩ ተኻይዱ ?	ኣብ ጥዕና ትካል ☐ ኣብ ገዛይ ☐ ኣብ ባህላዊ ሓኪም ገዛ ☐ ካሊእ, ይግለፃ _____
23	ምንፃል ጥንሲ መን እዩ ሰሪሑ ልክን?	ጥዕና ባዓል ሞያ ☐ ዝሰልጠነት ናይ ልምዲ ኣዋላዲት ☐ ባህላዊ ሓኪም ☐ ባዕለይ ☐

		ካሊእ, ይግለፃ _____
24	ብምኽንያት ምንፃል ጥንሲ ኣብ ሕክምና ደቂስክን ዶ ትፈልጣ ?	እወ ☐ ኣይፈልጥን ☐
25	ደቂስክን እንተድኣ ኔረክን ንክነደይ መዓልቲ ኣብ ሆስፒታል ፀኒሕክን ?	ንሓደ መዓልቲ ☐ ካብ ክልተ ክሳብ ሓሙሽተ መዓልቲ ☐ ንልዕሊ ሓሙሽተ መዓልቲ ☐
26	ምስ ምንፃል ጥንሲ ዝተታሓሓዘ ፀገም ኣጋጢ ሙ ክን ይፈልጥ ዶ?	እወ ☐ ኣየጋጠመንን ☐
27	እንድሕር ደኣ ኣጋጢ ሙ ክን እንታይ ዓይነት ፀገም እዩ ኔሩ ?	መድመይቲ ☐ ኣካለዊ ጉድኣት ☐ ርኽሰት ☐ ካሊእ, ይግለፃ _____
28	ንሕክምና ክንደይ ዝኸውን ገንዘብ ከፊልክን?	ትሕቲ ሓምሳ ቅርሺ ☐ ካብ ሓምሳ ክሳብ ተስዓን ትሻዓተን ቅርሺ ☐ ካብ ሓድ ክሳብ ክልተ ሚኢቲ ቅርሺ ☐ ልዕሊ ክልተ ክሳብ ኣርባዕተ ሚኢቲ ቅርሺ ☐ ካብ ኣርባዕተ ሚኢቲ ቅርሺ ንላዕሊ ☐
29	ነቲ ዝሰደድክነኡ ጥንሲ መከላኸሊ ተጠቒመን ዶ ትፈልጣ?	እወ ☐ ኣይፈልጥን ☐
30	እንተድኣ ተጠቒመን እንታይ ዓይነት እዩ ኔሩ ?	ብኣፍ ዝውሰድ መከላኸሊ ክኒን ☐ ብመርፍኢ ዝወሃብ መከላኸሊ ☐ ኣብ ጭዋዳ ዝቕበር መከላኸሊ ☐ ኣካላዊ መከላኸሊ (ኮንደም፣ ሉብ ፣ ናብ ማህጠን ዝኣቱ) ☐ ባህላዊ ሜላ መከላኸሊ ☐ ካሊእ, ይግለፃ _____

Map of the study area

Annex VII: Letter of declaration

Declaration:

I the undersigned, declare that this thesis is my original work in partial fulfillment of the requirement for the Degree of Master of Science, has not been presented for a degree in any other university. All the source of the materials used for this thesis, and all people and institutions who gave support for this work are duly acknowledged.

Name of student_____

Signature _____

Place of submission: Addis Ababa University, Department of Nursing and Midwifery.

Date of submission _____

The advisor: This thesis work has been submitted for examination with my approval as University advisor.

Name _____ signature_____