Addis Ababa University
College of Health Sciences
School of Medicine Department of Obstetrics and Gynecology

DETERMINANTS OF REPEAT INDUCED ABORTION IN ADDIS ABABA

A Thesis Submitted to the School of Graduate Studies, Addis Ababa University, in Partial Fulfillment of the Requirements for Specialty certificate in Gynecology and Obstetrics

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I would also thank the research and publication committee of the department of Gynecology and Obstetrics for approval of the research topic and the department for giving me the chance to conduct this research.

Finally, I unreservedly extend my utmost gratefulness to my family and friends for being with me during the times of stress and providing me with the support and motivation throughout the duration of the study and bearing and sharing the hardship of such undertaking.
LIST OF ABRIVATIONS

CI  Confidence Interval
EDHS  Ethiopian Demographic and Health Survey
GBV  Gender Based Violence
GA  Gestation Age
IUCD  Intrauterine Contraceptive Device
OBGYN  Obstetrics and gynecology
COC  Combined oral contraceptive pill
OR  Odds ratio
SD  Standard Deviation
WHO  World Health Organization
FP  Family planning
ABSTRACT

Background: Induced abortion occurs in great numbers throughout the world. Repeat induced abortion accounts for a substantial proportion of all induced abortion in many countries, with reports ranging from 22% to 77% (1, 2). The risks on subsequent pregnancies of repeat induced abortion are reported to be higher than those of the first induced abortion. Along with the high rate of induced abortion, public health services have been faced with serious health problems and severe financial costs.

Objectives: To measure the level of repeat induced abortion and its determinants in Addis Ababa.

Design: A facility-based cross-sectional study.

Setting: Non-governmental health facilities in Addis Ababa.

Methods: A facility-based cross-sectional study was conducted using a structured questionnaire with calculated sample size of 355. Consecutive cases of women who visited the center for safe abortion service and fulfill the inclusion criteria were selected and studied.

Results: 31% of the participants reported that they have repeat induced abortions and there was statistically significant association between repeat induced abortion and age category, educational status, income, marital status, having more than one partner, ever used family planning method.

Conclusion and Recommendation: Centers which gives reproductive health services should give due attention to those who are older, married, less educated, who has more than one partner, ever used family planning method and provide a quality family planning service.

Keywords: Repeat induced abortion, Determinants, Ethiopia.
1. INTRODUCTION

1.1 Statement of the problem
Induced abortion occurs in great numbers throughout the world. Repeat induced abortion accounts for a substantial proportion of all induced abortion in many countries, with reports ranging from 22% to 77%. The risks on subsequent pregnancies of repeat induced abortion are reported to be higher than those of the first induced abortion. Along with the high rate of induced abortion, public health services have been faced with serious health problems and severe financial costs.²

As of 2008, women in 56 countries (constituting 60 million or 39% of women aged 15–44 years worldwide) had legal access to abortion on demand (i.e. without restrictions regarding the reason). It is well established that, after liberalization of abortion laws, repeat abortion in a given population increases over time and then stabilize.¹,³

Following the revision of the criminal code and the development of abortion series guidelines by the Ministry of Health, access to safe abortion has been gradually increasing. Unfortunately, services are not yet widely available throughout Ethiopia.⁴

As part of law reform in Ethiopia in 2005, the penal code was revised to broaden the indications under which abortion is permitted. Termination of pregnancy is now legal when the pregnancy results from rape or incest, when continuation of the pregnancy endangers the health or life of the woman or the fetus, in cases of fetal impairment, for women with physical or mental disabilities, for minors who are physically or psychologically unprepared to raise a child and in cases of grave and imminent danger that can be averted only through immediate pregnancy termination. These are significant changes from the previous law, which permitted abortion only in cases of grave and imminent danger that could be averted only through immediate pregnancy termination.⁵

According to the 2005 and 2011 DHS surveys, the level of unintended pregnancy in Ethiopia is high and may be increasing. The desire for smaller families is increasing, which reflects broader social and economic changes in the country: The average desired family size declined from 4.9 in 2000 to 4.0 in 2005 and 3.0 in 2011.⁶
Although contraceptive use has increased, unmet need for contraception has remained high and close to one third of births are either mistimed or unwanted. Women in Addis Ababa and other urban areas are delaying marriage into their 20s, probably in response to adverse economic conditions and for the purpose of pursuing their education. This delay in marriage may result in increased sexual activity among unmarried young women, raising their risk of unintended pregnancy as well as abortion, given that child bearing outside of marriage is highly stigmatized.

In DHS surveys, few unmarried women report ever having been sexually active, but data from other, smaller-scale studies suggest that sexual activity among the unmarried is not uncommon. Overall 42% of all pregnancies in Ethiopia in 2008 were unintended. The proportion of all pregnancies that were unintended was much higher than average in Addis Ababa (72%).

Estimated abortion rate for Addis Ababa in 2008 was 49 Abortions per 1,000 women of reproductive age, which is more than twice the national rate of 23 abortions per 1,000 women of reproductive age. This is despite the unmet need for family planning in Addis Ababa is much lower than the national figure (10.6 % and 25.3 % respectively). This reflects a high demand for abortion-related services.

Repeat abortion, or having more than one Pregnancy termination, is bound in a vicious cycle with repeat unintended pregnancy. Women who have had a recent abortion are more likely to discontinue contraceptive use during a 1-year follow up period and both recent and other previous abortion clients have been found to be more likely to have a repeat unintended pregnancy during that time period.

While safe termination of pregnancy is a relatively low risk procedure, repeated terminations have been associated with numerous adverse sequelae (e.g. ectopic pregnancy, placenta previa, fetal loss, Preterm delivery, and potentially lower fertility), thus avoiding repeated unintended pregnancy and associated repeat abortions is the ultimate goal.

Some of the increases in repeat abortion are due to changes in the population at risk as access to pregnancy terminations has become more available. A nationally representative study of post-abortion complications in Ethiopia found a repeat abortion incidence of 35% among women seeking post -abortion care and in Addis Ababa the incidence is said to be 30%.
1.2 Significance of the study
Repeat induced abortion is common in Addis Ababa but characteristics of women having repeat induced abortion have not been fully explored. Therefore, this study aimed to determine the magnitude of repeat induced abortion among the aborters and to identify their characteristics with an emphasis on socio-demographic, contraceptive knowledge, attitude, practice, and gender based violence in order to gain better insight into the repeat aborters. Information from this study would be helpful for program planners and policy makers to orient future interventions to prevent repeat induced abortion.

2. LITERATURE REVIEW
Repeat abortions incidence varies considerably by country but is generally quite common in high-resource settings where more reliable data is available. According to recent findings, the level of repeat abortions in Europe, Canada and the US ranges from 22% and 50%.\textsuperscript{12,13} A recent analysis of national data from Britain found that a third of women who reported having had an abortion also had a subsequent abortion. However, since abortion is notoriously underreported for a variety of reasons including social stigma, repeat abortion may be as well, perhaps even more.\textsuperscript{10,13} Furthermore there is no standard definition of repeat abortion; some Studies count more than one abortion ever, others focused on multiple abortions within shorter intervals.\textsuperscript{13} A seminal 1984 Canadian study found more similarities than differences among first-time and repeat abortion clients. More recent research has identified an array of potential risk factors for repeat abortion including: age; socioeconomic status; parity; education; foreign origin; race; smoking; alcohol/drug abuse; physical abuse or violence; early sexual debut; previous contraceptive use; and type of contraceptives used. Some of these characteristics were significant predictors in some studies but not others.\textsuperscript{10,13} Although still poorly understood, risk factors for repeat abortion likely vary in different countries less is known about the women who require repeat abortion services in low-resource settings.\textsuperscript{3,10,14} Some of the available data from Africa is dated and/or of limited generalizability.\textsuperscript{3} In Vietnam, Huong et al found that more than 70% of women presenting for pregnancy termination at a hospital in the capital city had sought at least one prior abortion; education and economic status
were not associated with repeat abortion but prior Contraceptive use was.\textsuperscript{2,3} Elsewhere in Asia, repeat abortion incidence ranged from 29-46%.\textsuperscript{3,10,14}\textsuperscript{12} Following the legalization of abortion, a study of risk for repeat termination in Nepal found that nearly a third of surveyed women were seeking a repeat abortion. The study also found that significantly more repeat abortion seekers “would consider having another abortion in the future” compared with those seeking abortion for the first time (49% vs. 37%).\textsuperscript{3} In addition, women who did not intend to have another child in the future were twice as likely to have a repeat abortion as those who intended to do so.\textsuperscript{3} In a study of abortion and contraception conducted in Ivory Coast in the late 1990s, the repeat abortion incidence among multi-gravid women was 18%.\textsuperscript{15} Research from Zimbabwe reported a 1-year incidence of repeat abortion among women who both expressed a need for family planning and attended follow up appointments of between 2.5% and 5.3%.\textsuperscript{11} Care for complications of unsafe abortion in Ghana found that more than 22% were presenting for their second abortion and 14% for a higher order abortion.\textsuperscript{7}

Total fertility rate (TFR) in Ethiopia has been declining but remained high at 4.8 children per woman in 2011; more than a quarter (28%) of recent births and current pregnancies were reported mistimed or unwanted. Modern contraceptive prevalence among married women was 29% but the 1-year discontinuation rate was 37%. In addition, a quarter of married women (25%) have an unmet need for family planning. In stark contrast, the TFR in the capitol city, Addis Ababa, is 1.5 children per woman, well below replacement fertility and approaching the city’s estimated total wanted fertility rate of 1.3.\textsuperscript{6}

Contraceptive prevalence in Addis Ababa is 63%, more than twice the national average with about a tenth (11%) of married women reporting an unmet need for family planning.\textsuperscript{6,7} While contraceptive prevalence is high in Addis Ababa, the estimated abortion incidence is also high at 49 per 1000 women of reproductive age (WRA) compared to 23 per 1000 WRA in the country.\textsuperscript{5} Abortion contributes to Ethiopia’s fertility decline and the decriminalization of the country’s penal code in 2005, which broadened the circumstances under which abortion is permitted, is likely to be playing an even greater role particularly in Addis Ababa.\textsuperscript{10,16} Unlike in other African countries, the conscientious objection of providers does not seem to be a major barrier to service delivery.\textsuperscript{4} At the same time, abortion continues to contribute to Ethiopia’s high maternal mortality rate. It is estimated that only 27% of abortions in the country were safe procedures and
according to global estimates, unsafe abortions account for 13% of maternal mortality worldwide.\textsuperscript{17}

A study of unwanted pregnancy in rural Tigray, Ethiopia did not report repeat abortion rates but noted that Significant number of patients reported a previous history of induced abortion.\textsuperscript{18} A nationally representative study of post-abortion complications in Ethiopia found a repeat abortion incidence of 35\% among women seeking post-abortion care.\textsuperscript{9} Other estimates from Ethiopia determined that more than a third of women presenting for induced abortion (35\%) had had a previous termination, as did more than a quarter (27\%) of post-abortion care (PAC) clients.\textsuperscript{19} In addition to the morbidity and mortality risks associated with repeat abortion, post-abortion care represents the lion’s share of abortion-related costs in Ethiopia and creates a substantial drain on scarce resources.\textsuperscript{4,20}

A recent study identified factors associated with post-abortion method choice among women seeking abortion-related care in Addis Ababa since the legal reforms, briefly, among other significant factors such as age, occupation, type of clinic, education, and number of living children, the number of previous abortions was significantly associated with increased odds of adopting any method post-abortion but decreased odds of adopting a long-term one.\textsuperscript{7,10} The characteristics of women presenting for abortion-related care who have had a previous abortion might point to risk factors and interventions to interrupt the cycle of repeat abortion. This paper uses the same data to examine the characteristics of women seeking care for initial and repeat abortions in Addis Ababa, Ethiopia.
3. OBJECTIVE

3.1 General objective

- To measure the level of repeat induced abortion and its determinants in Addis Ababa

3.2 Specific objective

- To measure the level of repeat induced abortion in Addis Ababa
- To determine the association between socio-demographic characteristics and repeat induced abortion
- To determine the association between reproductive health characteristics and repeat induced abortion
- To determine the association between family planning method used and repeat induced abortion
4. METHODOLOGY

4.1 Study design

A facility based cross sectional study.

4.2 Study setting

The study was conducted in a single non-governmental health facility in Addis Ababa which gives reproductive health services including more than 15 safe abortion cases per day the teklehaymanot branch of MSIE

4.3 Study population

All reproductive age women who were having post abortal care at the facility during the study period and who fulfill the inclusion criteria

4.4 Inclusion/Exclusion criteria

4.4.1 Inclusion criteria

All women having post abortal care and competent to give consent were included.

4.4.2 Exclusion criteria

Those who were severely sick and unable to give consent were excluded.

4.5 Sampling procedure and Sample size

I took the consecutive women having post abortal care at the health facility and sample size calculated using a single population proportion formula,

\[ n = \frac{(Z_{\alpha/2})^2 \cdot P \cdot (1-P)}{d^2} \]
Is used to estimate the sample size of clients to be interviewed. As the incidence of repeat induced abortion in Addis is found to be 30% in previous studies. The following assumption has been made: repeat induced abortion in Addis as 30% (P = 0.3), level of significance to be 5%, Z= confidence level at 95% (Standard value of 1.96) and absolute precision or margin of error to be (α=0.05). Computing with the above formula

\[
(1.96)^2 \times 0.3(1-0.3) \\
(0.05)^2
\]

Gives a total sample size of 323. Considering a 10% non-response rate would finally make the sample size 355.

**4.6 Data collection procedures:**

A structured questionnaire was used to interview study participants. In the health facility exit interviews were made by the principal investigator from 1st of August to the 1st of September. All the 355 women approached gave consent and participated in the study.

The study participants were interviewed at the exit after completing their clinic visit.

**4.7 Data Management:**

Data was entered and analyzed using SPSS version 20.0 statistical software. Errors related to inconsistency of data were checked and corrected during data cleaning. The univariate analysis such as proportions, percentages, ratios, frequency distributions and appropriate graphic presentations besides measures of central tendency and measures of dispersion were used for describing data. Bivariate analysis of socio-demographic, family planning information, and reproductive health characteristics were included. Then multivariate logistic regression model was employed to control confounding.
4.8 Operational definitions

**Induced abortion:** medical or surgical termination of pregnancy before the time of fetal viability

**Repeat induced abortion:** more than one termination of pregnancy in a woman’s life.

**Unwanted pregnancy:** a pregnancy not desired by both partners

**Gender Based Violence:** defined as a form of violence that targets individuals or groups of individuals on the basis of their gender that results in or is likely to result in Physical or Sexual Violence or suffering to women.

**Physical Violence:** is any form of violent act which can result in physical harm including mild form (slapping, and punching) or sever form (kicking/drugging, beating/hitting with any object, burning/choking, and threatening using a knife or a gun etc) against women.

**Sexual Violence:** is defined as acts that are done on a woman by intentional use of physical force or power, intimidation or threatening to have sex or to engage in acts of sex without the consent of woman. It includes Completed rape, attempted rape and sexual harassment.

4.9 Variables

4.9.1 Independent variables

- Socio demographic characteristic – age, marital status, Ethnicity, religion and educational status

- Family planning method use and type

- Reproductive health characteristics

- Pre and post abortal counselling

- Substance exposure status

- Gender based violence (physical, psychological and sexual violence)
Dependent variable

Repeat induced abortion

Ethical consideration

Ethical clearance was obtained from the Research & Ethical clearance committee of department of OBGYN AAU. Permission was obtained from MSIE.

Efforts were made to maintain the confidentiality of the data. The interviews were done in separate rooms which can ensure privacy and confidentiality. All the study participants were reassured that they would be anonymous. Names or any personal identifiers would not be recorded. Respondents were clearly told about the study and the variety of information needed from them. They were given the chance to ask anything about the study and made free to refuse or stop the interview at any moment they want if that is their choice. Respondents were also told that they will not be denied of any service if they don’t take part in the study but they will be told that all the information that they are to give is going to help improve the service that is going to be given to them. Informed consent were sought from all study participants at all levels.

Dissemination of results

After accomplishing the study, the results were presented to department of obstetrics and gynecology research and publication committee, Addis Ababa University. Subsequently, attempts will be made to present it on scientific conferences and publish it on scientific journals. A copy of the whole research will be submitted to the Ministry of Health, Addis Ababa University and other relevant bodies.
5. RESULTS

Out of the 355 individuals approached to participate in the study all gave informed consent and participated in the study.

Out of the 355 participants 110 (31%) reported that they had at least one previous abortion. Most of the participants are younger than 25, Christians (81.7%), employed (68.2%), singles (59.7%), in the lowest Quartile economically (41.7%). Mean age for first time aborters is 24yrs while that of repeaters is 26yrs. 11.5% reported that they have more than one partner most of the participants received contraceptives when they left the clinic (89.6%) of these 72.4 took injectable. Among those who received contraceptives 80.8% received injectable. 35.2% of the participants were parous women. 96.6% want to have more children. 69% had their 1st abortion, 26.5% had their 2nd abortion and 3.7% had their third abortion. Almost all of them (98.3%) know some form of modern contraceptives and half of them (49%) used some form of modern contraceptives previously. 91% of the study participants were counseled on modern family planning methods of these 90.7% were counseled on injectable, 71.8% were counseled on implants and 44.5% were counseled on IUCD. 24.2% of the participants were using short term reversible contraceptives while they got pregnant. All the participants were nonsmokers, never chew chat no history of gender based violence so these variables are not considered in the data analysis.
Table 1: Sociodemographic characteristics of reproductive age women, Addis Ababa August 2014.

<table>
<thead>
<tr>
<th></th>
<th>First abortion</th>
<th>Repeat abortion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>No. (%)</td>
</tr>
<tr>
<td>Mean age (SD)</td>
<td>24 (4)</td>
<td>26 (5)</td>
<td>24.77 (4.51)</td>
</tr>
<tr>
<td>Age category</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 19</td>
<td>40 (16.3)</td>
<td>8 (7.3)</td>
<td>48 (13.5)</td>
</tr>
<tr>
<td>20 - 24</td>
<td>95 (38.8)</td>
<td>36 (32.7)</td>
<td>131 (36.9)</td>
</tr>
<tr>
<td>25 - 29</td>
<td>92 (37.6)</td>
<td>40 (36.4)</td>
<td>132 (37.2)</td>
</tr>
<tr>
<td>30 - 39</td>
<td>18 (7.3)</td>
<td>26 (23.6)</td>
<td>44 (12.4)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>202 (82.4)</td>
<td>88 (80.0)</td>
<td>290 (81.7)</td>
</tr>
<tr>
<td>Muslim</td>
<td>43 (17.6)</td>
<td>22 (20.0)</td>
<td>65 (18.3)</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>14 (5.7)</td>
<td>15 (13.6)</td>
<td>29 (8.2)</td>
</tr>
<tr>
<td>Primary</td>
<td>64 (26.1)</td>
<td>31 (28.2)</td>
<td>95 (26.8)</td>
</tr>
<tr>
<td>Secondary</td>
<td>93 (38)</td>
<td>46 (41.8)</td>
<td>139 (39.2)</td>
</tr>
<tr>
<td>Above secondary</td>
<td>74 (30.2)</td>
<td>18 (16.4)</td>
<td>92 (25.9)</td>
</tr>
<tr>
<td>Ethnic group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amhara</td>
<td>115 (46.9)</td>
<td>32 (29.1)</td>
<td>147 (41.4)</td>
</tr>
<tr>
<td>Oromo</td>
<td>37 (15.1)</td>
<td>25 (22.7)</td>
<td>62 (17.5)</td>
</tr>
<tr>
<td>Gurage</td>
<td>69 (28.2)</td>
<td>36 (32.7)</td>
<td>105 (29.6)</td>
</tr>
<tr>
<td>Others</td>
<td>24 (9.8)</td>
<td>17 (15.5)</td>
<td>41 (11.5)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>156 (63.7)</td>
<td>56 (50.9)</td>
<td>212 (59.7)</td>
</tr>
<tr>
<td>Ever married</td>
<td>89 (36.3)</td>
<td>54 (49.1)</td>
<td>143 (40.3)</td>
</tr>
<tr>
<td>Monthly income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest quartile</td>
<td>121 (49.4)</td>
<td>27 (24.5)</td>
<td>148 (41.7)</td>
</tr>
<tr>
<td>Second quartile</td>
<td>44 (18.0)</td>
<td>35 (31.8)</td>
<td>79 (22.3)</td>
</tr>
<tr>
<td>Third quartile</td>
<td>42 (17.1)</td>
<td>27 (24.5)</td>
<td>69 (19.4)</td>
</tr>
<tr>
<td>Highest quartile</td>
<td>38 (15.5)</td>
<td>21 (19.1)</td>
<td>59 (16.6)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>157 (64.1)</td>
<td>85 (77.3)</td>
<td>242 (68.2)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>20 (8.2)</td>
<td>11 (10.0)</td>
<td>31 (8.7)</td>
</tr>
<tr>
<td>Student</td>
<td>68 (27.8)</td>
<td>14 (12.7)</td>
<td>82 (23.1)</td>
</tr>
<tr>
<td>Total</td>
<td>255 (69)</td>
<td>110 (31)</td>
<td>355 (100)</td>
</tr>
</tbody>
</table>
On bivariate analysis there were associations between repeat induced abortion and age category, occupation, marital status, educational level, income, having more than one partner in the last one year, ever used family planning methods, current family planning method use, having history of STI and those who gave birth previously. All these variables were taken to the multivariate binary logistic regression model to look for confounders and the true association persists in all variables except for occupation, having history of STI, current family planning use, and those who gave birth previously.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Repeat abortion</th>
<th>C P value</th>
<th>COR (95% CI)</th>
<th>OR(95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No (%)</td>
<td>Yes (%)</td>
<td>No (%)</td>
<td>Yes (%)</td>
<td></td>
</tr>
<tr>
<td>Age category</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 19</td>
<td>40(83.4)</td>
<td>8(16.6)</td>
<td>0.000</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>20 - 24</td>
<td>95(72.5)</td>
<td>36(17.5)</td>
<td>12(81 – 4.49)</td>
<td>1.42(0.53 – 3.77)</td>
<td></td>
</tr>
<tr>
<td>25 - 29</td>
<td>92(69.7)</td>
<td>40(30.3)</td>
<td>17(93 - 5.06)</td>
<td>1.65(0.59 – 4.51)</td>
<td></td>
</tr>
<tr>
<td>30 - 39</td>
<td>18(40.9)</td>
<td>26(59.1)</td>
<td>7.2(2.74-19.02)</td>
<td>6.69(1.85-24.2)</td>
<td></td>
</tr>
<tr>
<td>educational level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no education</td>
<td>14(48.3)</td>
<td>15(51.7)</td>
<td>0.018</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>primary</td>
<td>64(67.4)</td>
<td>31(32.6)</td>
<td>0.45(0.19 - 1.05)</td>
<td>0.12(0.04-0.40)</td>
<td></td>
</tr>
<tr>
<td>secondary</td>
<td>93(66.9)</td>
<td>46(33.1)</td>
<td>0.46(0.21 – 1.04)</td>
<td>0.26(0.07 - 0.61)</td>
<td></td>
</tr>
<tr>
<td>above secondary</td>
<td>74(80.4)</td>
<td>18(19.6)</td>
<td>0.23(0.09 - 0.55)</td>
<td>0.03(0.01 - 0.21)</td>
<td></td>
</tr>
<tr>
<td>marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>156(73.6)</td>
<td>56(26.4)</td>
<td>0.023</td>
<td>0.59(0.37 - 0.93)</td>
<td>0.29(0.12 - 0.71)</td>
</tr>
<tr>
<td>ever married</td>
<td>89(62.2)</td>
<td>54(37.8)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>monthly income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lowest quartile</td>
<td>121(81.8)</td>
<td>27(18.2)</td>
<td>0.000</td>
<td>0.40(0.20 - 0.79)</td>
<td>0.33(0.17 - 0.94)</td>
</tr>
<tr>
<td>second quartile</td>
<td>44(55.7)</td>
<td>35(54.3)</td>
<td>1.43(0.72 – 2.88)</td>
<td>1.81(0.72 – 4.59)</td>
<td></td>
</tr>
<tr>
<td>third quartile</td>
<td>42(60.9)</td>
<td>27(39.1)</td>
<td>1.16(0.57 – 2.34)</td>
<td>1.39(0.58 – 3.41)</td>
<td></td>
</tr>
<tr>
<td>highest quartile</td>
<td>38(64.4)</td>
<td>21(19.1)</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>employed</td>
<td>157(64.9)</td>
<td>85(35.1)</td>
<td>0.008</td>
<td>0.105</td>
<td></td>
</tr>
<tr>
<td>unemployed</td>
<td>20(64.5)</td>
<td>11(35.5)</td>
<td></td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>student</td>
<td>68(82.9)</td>
<td>14(17.1)</td>
<td></td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>more than one partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>235(74.8)</td>
<td>79(25.2)</td>
<td>0.000</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>yes</td>
<td>10(24.4)</td>
<td>31(75.6)</td>
<td>9.22(4.33-19.66)</td>
<td>11.9(4.6-31.1)</td>
<td></td>
</tr>
<tr>
<td>History of STI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>230(71.2)</td>
<td>93(28.8)</td>
<td>0.006</td>
<td>0.205</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>15(46.9)</td>
<td>17(53.1)</td>
<td></td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>ever used family planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>151(83.4)</td>
<td>30(16.6)</td>
<td>0.000</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>yes</td>
<td>94(54)</td>
<td>80(56)</td>
<td>4.28(2.62-7.01)</td>
<td>3.20(1.59-6.42)</td>
<td></td>
</tr>
<tr>
<td>currently on family planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td>200(74.3)</td>
<td>69(25.)</td>
<td>1.000</td>
<td>0.978</td>
<td></td>
</tr>
<tr>
<td>users</td>
<td>45(52.3)</td>
<td>41(47.7)</td>
<td></td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>
6. DISCUSSION

Prevalence of repeat induced abortion (31%) is comparable with studies done in Addis Ababa (30 %), Nepal (32%) Beijing (33%) USA (48%)\textsuperscript{1,2,9,11}.

When we see the age category - older age group is at increased risk of having repeat induced abortion and it is clearly seen as the age of the women increases the risk of having repeat induced abortion also increases, this is consistent with other studies\textsuperscript{1,9}.

Those who are not educated are at increased risk of having repeat induced abortion. The odds ratio for those above secondary is 0.03 relative to the non-educated this may be due to a better contraceptive knowledge and use. This contradicts with the study in Addis Ababa and Nepal may due to sample size and sampling procedure\textsuperscript{1,9}.

Being ever married is not protective of repeat induced abortion which contradicts study in Addis this may be due to the inclusion of those who are divorced and widowed to the ever married category.

Having more than one partner in the last one year is also found to be an important risk factor for repeat induced abortion and difficult to compare with other studies as the reviewed literatures didn’t assess this condition. Even if it is very sensitive question to ask, women in such condition may be in unstable relationship which may make them vulnerable to unintended pregnancy and then to abortion.

Ever used fp methods is at increased odds of having repeat induced abortion which also consistent with the Addis, Nepal and us studies when we see the finding it looks paradoxical to the general truth that fp method use decreases unintended pregnancy and then induced abortion. But this indicates these group of women tend to control the fertility and when they fail they tend to seek abortion service, and also this paradoxical relation may be due to the choice of contraceptives. Such women may chose the less effective methods.

Total monthly income also has a statistically significant association with repeat induced abortion. Those who are in the lowest monthly income quartile are less likely to have repeat induced abortions (OR = 0.4). This may be due to that those who are less educated tend to give birth unintended pregnancies than getting termination earlier because they may not access the abortion services easily\textsuperscript{1,9,11}.
7. CONCLUSION AND RECOMMENDATION

Older, ever married, less educated, those who had more than one partner and ever used fp method are at increased odds of having repeat induced abortion

In such women who seek abortion service family planning issues should be well addressed including failures of contraceptives and institutions working on family planning services should look into the quality of their family planning services.

As this study was done at a single facility it is difficult to generalize to the whole country even to Addis Ababa so I recommend a better representative and well-designed study which can be generalized to the nation.
8. REFERENCE


13. Sadia Halim ES. Repeat Abortion in Croydon.


9. ANNEX 1

General Questions

1. Code Number______________________________
2. Date of interview _____/_____/_______
3. Interviewer’s Name______________________________
4. InterviewerID______________________________
5. Result of the interview
   5.1 Complete
   5.2 Incomplete
   5.3 Refused
6. Checked by Investigator: Signature _________________ Date: _____/_____/_________
   (Day/ Month/ Year)

**Interviewer:** INTRODUCE YOURSELF TO THE CLIENT

Hello, My name is………………………………… We are conducting a study on risk factors for repeat induced abortion. As part of this, I would like to ask you some questions about the services you have received. There is no risk if you agree to participate in the interview. All the information that you give to me will be kept strictly confidential; your name will not be used, and you will not be identified in any way. Your current and future care at this facility will not be affected in any way. This interview should take approximately 30 min to complete. Your participation is absolutely voluntary and there is no penalty for refusing to take part. You are free to ask any questions; you may refuse to take part in the interview; you may refuse to answer any question in the interview; and you may stop the interview at any point.

Do you have any questions for me at this time about this survey?

Yes   No
<table>
<thead>
<tr>
<th><strong>Interviewer’s Signature</strong></th>
<th>Date: <strong>/</strong>/__</th>
<th><strong>PART I. Socio-demographic characteristics</strong></th>
<th><strong>SKIP TO</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.1 How old are you?</strong></td>
<td>________Years</td>
<td><strong>1.2 What is your religion?</strong></td>
<td>1. Orthodox</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Catholic</td>
<td>3. Muslim</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1.3 What is the highest</strong></td>
<td>1. Tertiary education</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>educational level</strong></td>
<td>2. High school</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>you completed?</strong></td>
<td>3. Primary education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Able to read and Write--------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1.4 What ethnic group do you</strong></td>
<td>1. Amhara-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>belong to?</strong></td>
<td>2. Oromo-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Tigrie-------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Gurage -------------</td>
<td></td>
</tr>
</tbody>
</table>
|                             |              | **1.5 What is your current marital**| 1. Married -----
|                             |              | **/ relationship status?**          | 2. Single, never married ------ --- |
|                             |              | 3. Widowed ---------------         |             |
|                             |              | **1.6 What is your total monthly**  | 1. Your own income--------- Eth.Birr |
|                             |              | **income?**                        | 2. Husband’s income-------- Eth.Birr |
|                             |              | 3. Other income sources ____ Eth.Birr |             |
|                             |              | 4. No income ---------------      |             |
1.7 What is your current occupation?  
1. Unemployed  
2. Student  
3. Housewife  
4. House servant  
5. Daily laborer  
6. Merchant  
7. Sex worker  

**Part II. Sexual history**

| 2.1 Do you have a partner currently | 1. Yes  
| | 2. No  |

| 2.2 Have you had sex with more than one partner in the past 12 months? | 1. Yes  
| | 2. No  |

**PART III. Child desire information**

| 3.1 Have you ever been pregnant? | 1. Yes  
| | 2. No  |

| 3.2 What is the total number of pregnancies that  |  
|  |  

| 3.3 Was your last pregnancy wanted/planned? | 1. Yes  
| | 2. No  
| | 3. Don’t know  

| 3.4 Have you ever given birth? | 1. Yes  
| | 2. No  
| |  

| 3.5 How long ago was your last delivery? | ---Years and ---  
| | months ago |
### Part III: Sexual and Reproductive Health (

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6 How many biological children do you have?</td>
<td>1. Living__________  2. Dead______________</td>
</tr>
<tr>
<td>3.7 Would you like to have children, or more children, in the future?</td>
<td>1. Yes --------  2. No ----------------  3. Don’t know -------------</td>
</tr>
<tr>
<td>3.8 If the answer for Q 3.7 is yes, how long would you like to wait before becoming pregnant, or becoming pregnant again?</td>
<td>1. Number of months:_____  2. Number of years:______  3. Other:______</td>
</tr>
<tr>
<td>3.9 If the answer for Q 3.7 yes, how many (more) children would you like to have in the future?</td>
<td>1. No. of children desired -----  2. Don’t know ------------</td>
</tr>
<tr>
<td>3.10 Have you ever had an unwanted</td>
<td>1. Yes……  2. No ……</td>
</tr>
<tr>
<td>3.11 Have you ever had an induced abortion?</td>
<td>1. Yes------------------  2. No------------------  3. No response--------</td>
</tr>
<tr>
<td>3.12 If yes, how many times?</td>
<td>________</td>
</tr>
<tr>
<td>3.13 How long ago was the last induced abortion?</td>
<td>________</td>
</tr>
<tr>
<td>3.14 Why are you having an induced abortion</td>
<td>PART IV. Family planning use and fertility intentions</td>
</tr>
<tr>
<td>4.1 Do you know about any family planning method?</td>
<td>1. Yes ----------------  2. No -------------  3. No response ------</td>
</tr>
</tbody>
</table>
| 4.2 | If yes, what types do you know? | 1. Condom ----------  
2. Pill (OCP) ----------  
3. Injectable ----------  
4. IUCD ----------  
5. Implants ----------  
6. Tubal ligation /Vasectomy ----  
7. Breastfeeding ............ |
| 4.3 | Have you (or your partner) ever used a family planning method before? | 1. Yes ----------  
2. No ----------  
3. Don’t remember ------  
4. Don’t know ----------  
5. No response ---------- |
| 4.4 | If yes for Q4.3 specify the method you /your partner used? (More than one answer can be possible.) | 1. Condom ----------  
3. Pill (OCP) ----------  
4. Injectable ----------  
5. IUD ----------  
6. Implants ----------  
7. Tubal ligation /Vasectomy ---  
8. Breastfeeding ............ |
| 4.5 | Are you /your partner/ using a family planning method currently (during the study period)? | 4. Yes ----------------  
5. No -------------------  
6. I don’t know ------------ |
| 4.6 | If yes for question 4.5, specify the method you are using? (More than one answer can be possible) | 1. Condom ---------  
2. Pill (OCP) ---------  
3. Injectable ---------  
4. IUD ---------  
5. Implants ---------  
6. Tubal ligation /Vasectomy  
7. Breastfeeding ........  
8. Withdrawal |
| 4.7 | If not yes for question 4.5, would you like to use a family planning method in the future? | 1. Yes ---------  
2. No ------------------  
3. Don’t know ---------  
4. No response ---------  
5. Other (specify) ------- |
| 4.8 | If yes, specify the method you intend to use? (More than one answer can be possible) | 1. Condom ---------  
2. Pill (Ocp) ---------  
3. Injectable ---------  
4. IUD ---------  
5. Implants ---------  
6. Tubal ligation /Vasectomy  
7. Breastfeeding |
| 4.9 | If no, why don’t you use family planning? | 1. Want to have a child ----  
2. Fear that family planning drugs may affect my health ----  
3. I am abstaining from sex  
| 5.1 | Were you counseled on family planning in the clinic today? | 1. Yes---------  
2. No------------------------ |

**PART V. Discussion on FP with health care provider**
| 5.2 | If yes, what type of method(s) were you counseled on? | 1. condom--------  
2. Pills ---------------  
3. Injectable-------  
4. Norplant……….. |
| 5.3 | Did you receive any family planning method during your visit to this facility | 1. Yes___  
2. No_____ |
| 5.4 | If no to question number 5.3, what is the main reason you did not receive a family planning method today? | 1. Came for information only  
2. Desire for fertility  
3. Changed my mind  
4. Pregnancy suspected  
5. Cost  
6. Method not available  
7. Partner objects to method  
8. Doctor said I had contraindications  
9. Prefer to use a traditional method (i.e. withdrawal, breastfeeding, periodic)  
10. Currently on a long-acting method (i.e. IUD, implants, or injectables)  
11. I was referred to other facility  
12. Other:  
13. Don't know |
| 5.5 | If yes to question number 5.3, which family planning method(s) did you receive? | 1. condom--------  
2. Pills ---------------  
3. injectables-------  
4. Norplant………..  
5. IUD…………….. |
**PART VII. Her exposure status of substance abuse**

<table>
<thead>
<tr>
<th></th>
<th>What was the main problem you had or the main reason you wanted to change or stop using that family planning method?</th>
<th></th>
</tr>
</thead>
</table>
| 5.6 | 1. Physical side-effects  
2. Partner did not like the method  
3. Pressure from others  
4. Fear of infertility  
5. Wanted pregnancy  
6. Cost  
7. Method unavailable/difficult to obtain  
8. Other:  
9. Don’t know |   |
|   | What are you going to do about FP now? |   |
| 5.7 | 1. Change to new method  
2. Continue with same method  
3. Stop using any method  
4. Don’t know |   |
|   | Which method(s) will you now use? |   |
| 5.8 | 1. Condom  
2. Pills  
3. Injectables  
4. Norplant  
5. IUD  
6. Others (specify) |   |

|   | Have you ever smoked cigarettes |   |
| 6.1 | 1. Yes  
2. No |   |
|   | Have you ever chew khat in your lifetime? |   |
| 6.2 | 1. Yes  
2. No |   |
|   | If yes to Q. NO. 7.2, how frequent? |   |
| 6.3 | 1. 2-3 days/week  
2. 4-6 days/week  
3. 2-4 days/month  
4. Once in a month |   |
|   | Have you ever drink alcohol in your lifetime? |   |
| 6.4 | 1. Yes  
2. No  
3. No response |   |
### Gender based violence

#### Physical violence

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Slapped you or throw something at you that could hurt you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Pushed you or shoved you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Kicked you in the abdomen, dragged you or beat you?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Hit you with his fist or with something else that could hurt?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Chocked you or burnt you on purpose threatened to use or actually used a gun</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Psychological violence

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insulted you or made you feel bad about yourself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Humiliated you in front of other people?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Did things to scare or intimidate you on purpose (e.g. by the way he looked at you, by yelling, &amp; smashing things)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Threatened to hurt you or</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Sexual violence

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Physically forced you to have sex when you did not want to?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Did you ever have sex you did not want because you were afraid of what he might do?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Did he ever force you to do</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>