



Magnitude and factors associated with unintended pregnancy among pregnant women in Addis Ababa, Ethiopia

Tadele Kassie^{*1}, Geteneh Moges², Ahmed Ali³, Worku Tefera³

ABSTRACT

Background

Unintended pregnancy is an important public health issue in both developing and developed countries because of its serious consequences for women and their families, which include the possibility of unsafe abortion, delayed prenatal care, poor maternal mental health, and poor child health outcomes. The major objective of this study was to identify the magnitude and factors associated with unintended pregnancy among pregnant women attending antenatal care in Addis Ababa.

Methods

A facility based cross-sectional study was conducted on 393 women attending antenatal care clinic at Addis Ababa in ten public health centers from February to May 2015. Simple random sampling technique was used to select health centers. Data were collected by trained data collectors using Pre-tested structured questionnaires. The data was entered into Epi Info version 3.5.3 then transferred to SPSS version 20 for data analysis and the level of significance of association were determined at P- value <0.05.

Results

The magnitude of unintended pregnancy was 36.4 95% CI ;(31%.8, 41.7%). The odds of unintended pregnancy among no Spousal communication were 4 times more likely than Spousal communication, Odds of unintended pregnancy among own business maker were 4 times more likely than unintended pregnancy compared to housewives. The odds of unintended pregnancy among inadequate awareness on Intra Uterine Device were 4 times more likely to be experienced to unintended pregnancy than from those who have adequate awareness on Intra Uterine Device.

Conclusion

According to this study, women education, occupation, spousal communication and awareness of long-term family planning were significantly associated with unintended pregnancy. There is an apparent need to design strategies of communication within couples on fertility and contraceptive issues through peer education and promote long-term modern family planning methods.

Keywords: Unintended Pregnancy, Magnitude

GJMEDPH 2017; Vol. 6, issue 4

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Conflict of Interest—none

Funding—none

INTRODUCTION

Unintended pregnancy is either unwanted or mistimed at the time of conception.¹⁻³ It has a great impact on the health of all fecund sexually active women in both developed and developing countries.^{2,3}

Globally, in 2012 out of 213 million pregnancies, 85 million were unintended, in which 50% ended in abortion, 13% miscarriage and 38% unplanned births.⁴ In 2008, out of 210 million pregnancies, 80 million were unintended, in which 21.6 million were completed by unsafe abortion-causing the death of 47,000 women. This indicates that the incidence of 1 in 10 pregnancies end in unsafe abortion.⁵ In the same year, in Ethiopia, the study made by Guttmacher Institute, showed that 101 unintended pregnancies occurred per 1,000 women aged 15–44, and 42% of all pregnancies were unintended; 382,500 induced abortions were performed in which the annual rate was 23 abortion per 1,000 women.⁶ Regarding the capital City Addis Ababa, the situation was more severe than the national level which was 49 per 1000 on average.⁶ World Population Reference Bureau 2008 also showed that Ethiopia had the fifth highest number of maternal deaths in the world, one in 27 women died from complications of pregnancy or childbirth annually.⁷ As per the study of the Ethiopian Demographic and Health Survey (EDHS) 2011, the prevalence of unintended pregnancy was 29 % of which, 20% were mistimed and 9 % unwanted.⁸

In Ethiopia, unmarried women and teenagers face UP, since it is an ignominy on the societies they become obliged to perform clandestine unsafe abortions which cause, physical abuse, thrown out of a home, exposed to prostitution, infected with HIV or unplanned childbearing, morbidity and mortality.^{9,10} The factors for UP vary in different areas and situations some of those were; nonuse of contraceptive, incorrect use of contraceptive, failure of contraceptives, unmet need for family planning, lower income, and less autonomy of women.^{2, 11, 12}

In Ethiopia, especially in Addis Ababa, the number of unintended pregnancy has been increasing and by this preventable public health problem, large

numbers of mothers and children are affected even though such problems are preventable.^{6,13}

The major reason for the increasing rate of unintended pregnancy followed by induced abortion and maternal mortality was the level of women autonomy and the gap on accessing and practicing contraceptive. Because of this, many women in Ethiopia perform safe and unsafe abortion every day in a clandestine manner.^{6,9,14} Those clandestine procedures were associated with arrays of negative outcomes, including , shock, organ failure, future reproductive problems, and unplanned childbearing with low-birth-weight infants, delayed prenatal care, reduced likelihood of breastfeeding, poorer mental and physical health during childhood, low in educational and behavioral outcomes of the child, lower maternal mental health, poor mother-child relationship quality, and an increased risk of the mother experiencing physical violence during and after pregnancy.^{2,3,15}

RATIONALE OF THE STUDY

The problem of unintended pregnancy in the community is very critical, but it is under reported due to the fact that the legal, social and cultural norms are not open to discussing the sensitive issue of unintended pregnancies followed by abortion.

Therefore, this study can be used as an input to influence the national policy makers, program formulators, and program implementers and to review the guidelines regarding the prevention of unintended pregnancy and related problems like unsafe abortion, future fertility problems, unwanted birth, mother and child morbidity and mortality.

A facility based study done in 2011 at selected health centers in Addis Ababa, showed that 38.7% pregnant women attending ANC report that their current pregnancy was unintended.¹⁷ A similar study in Bahir Dar in one facility were 26%.¹⁸

A community-based study done in Oromia Region, Ethiopia showed that 36.5% of sexually active women reported that their most recent pregnancies were unintended.¹⁹ Similarly, a study conducted in Hosanna Town, southern Ethiopia shows that among

pregnant married women, 34% of pregnancies were unintended.²⁰

In Ethiopia, contraceptive prevalence rate is 29 percent. Whereas, unmet need for family planning services is 25%; from these 16 percent have a need for spacing, and 9 percent have a need for limiting as per 2011 EDHS.⁸

Facility based Study conducted in Bahir Dar among pregnant women, who were visiting antenatal care clinic; indicate that the awareness of male partners on the utilization of contraceptives is significantly associated with unintended pregnancy.¹⁸

FACTORS ASSOCIATED WITH UNINTENDED PREGNANCIES

The problem of UP pregnancies is worldwide. According to a study done in Bangladesh, 32 % of women reported to have their recent pregnancy unintended.²⁴ Older women, 30 and above years of ages, were more likely than younger women to have had the unwanted pregnancy. However, adolescents were more likely than older women to have had mistimed pregnancy.²⁴ Also according to studies done in Nepal, 35 % of women reported to have their recent pregnancy unintended and among those pregnancies, 77 percent of the women were aged 35 and above.²⁵

Economic factors also play a great role in increasing UP rate. A study was done in the US, in 2008, showed that unintended pregnancy rates among low-income and poor women were more than three and four times the rate for women in the highest income group.^{1,26,27} In Ethiopia, the rate of current UP in poor families were more.²⁸

The level of education also plays a part in determining the rate of UP. Birth rates among women with low education are higher than those with secondary or tertiary education.²⁴ This is similar in several studies which have shown that level of education has also an influence on the rate of UP.^{19,24,28} A study done in Kenya reported that women with no education had first sexual intercourse three years earlier than their counterparts with at least a secondary school education.²⁹

Women who have autonomy on their own health care decision and financial right are less susceptible for UP.^{25,31} A population-based study in Southern Ethiopia, in 2011, showed that; women who had no autonomy on their health care were 4.3 times more likely to have unintended pregnancy compared with some autonomy on their health care.³⁰ Women with increased past history of UP have a high probability of current UP.^{19, 28, 32}

CONCEPTUAL FRAMEWORK

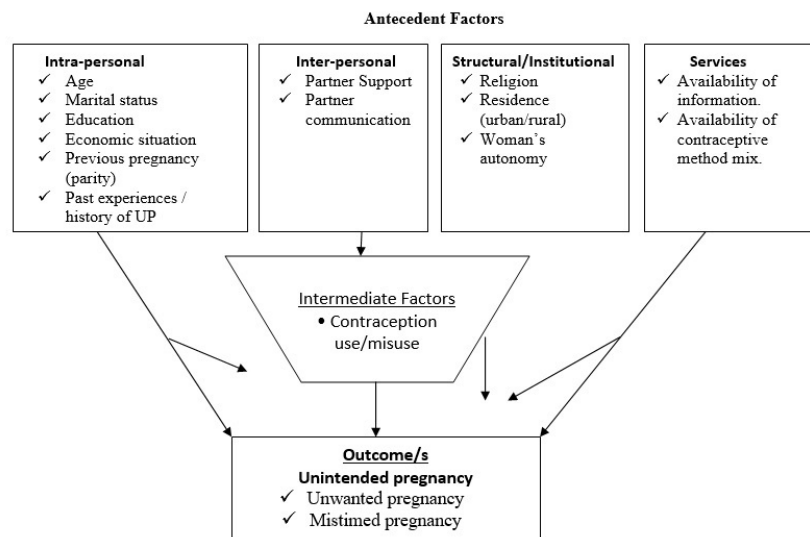


Fig 1 Conceptual Framework for Factors Associated with Unintended Pregnancies
Adapted from WHO; the Conceptual Framework for Researching on Unintended Pregnancy

MATERIAL AND METHODS

Study Setting, Design and Study Area

This study was conducted in public Health Centers at Addis Ababa, Ethiopia. Administratively, it is divided into ten sub cities and 116 Woreda with an area of 540 sq.kms and hosting more than 3.3. Million populations and among these 1, 478890 males and 1,624783 were females.³³ There were 7 Federal, 6 regionals, 38 private hospitals, and more than 850 private clinics which provide different health services. There was also a total of 86 public health centers which provide service. All most all health centers give ANC and delivery service.³³ A facility based cross-sectional study was conducted from February to May 2015, at ten selected public health centers in Addis Ababa, Ethiopia.

Study Variables

The dependent variable for this study was unintended pregnancy. Socio-demographic characteristics such as Age, Educational status, Occupation, Marital status, Gravidity, Parity, use of contraceptive, Type of contraceptive used,

awareness about contraceptive, use of emergency contraceptive were the predictor variables.

Sample Size and Sampling Procedure

For the first objective, it was calculated by using single population proportion formula.

The sample was determined using the single population proportion for level of unintended pregnancy based on the assumption that prevalence rate of unintended pregnancy was 36.5% [19], and 95% confidence interval was used with a marginal error of 5% and by taking the non-response rate as 10% due to sensitivity of the issue.

$$N = \frac{(Z_{\alpha/2})^2 pq}{d^2}$$

Where: n = sample size, P = proportion of unintended pregnant, q = 1-p, d = desired degree of precision (5%), Z= is the standard normal value at 95% confidence level = the total sample size was three hundred ninety-three (393).

For the second objective, the sample size was calculated by using Open Epi software. (Table One)

Table 1 Calculated Sample Size by Using Open Epi Software for the Second Objective

| Articles | | Variables | Percent of unexposed with outcome | Odds ratio | Total sample size |
|---------------------|------|--|-----------------------------------|------------|-------------------|
| Name of authors | Year | | | | |
| Fetene Teshome | 2014 | Desired N ^o of children | 35.6% | 7 | 104 |
| Fetene Teshome | 2014 | Age >30-34 Years | 66.1% | 6.5 | 114 |
| Wubalem Geberamelak | 2014 | Previous history of unintended pregnancy | 64.6% | 10.6 | 64 |
| Wubalem Geberamelak | 2014 | Family Size | 63.31% | 8.9 | 78 |
| Belayenesh Hamdela | 2012 | N ^o of children >5 | 52% | 5.8 | 130 |

Since the calculated sample sizes in second cases are lower, the first calculated sample size taken for both objectives

Sampling Techniques

All public health centers found in Addis Ababa served as the sampling frame, then by using simple random sampling, one public health center from each sub-city was selected. For each health center the allocated sample size was calculated using the monthly total number of pregnant women of all the health centers, the monthly visiting number of pregnant women from each health center and the total sample size.

Simple random sampling technique was used to select the study participants using ANC registration book that contained the list of pregnant women who visited the prenatal clinic as a sampling frame, then the interval of "K" was calculated. By divided the total number of women attending ANC per month to the allocated sample size for each health center. Finally, every "K" interval the study participant was selected.

Operational Definition

Intended pregnancy: - A pregnancy that was desired at the time it occurred or sooner.

Unintended pregnancy: - Is either unwanted or mistimed at the time of conception

Miss timed pregnancy: - If a woman did not want to become pregnant at the time of conception, but did want to become pregnant in the future.

Unwanted pregnancy: - If a woman did not want to become pregnant at conception or at any time in the future.

Data Collection Instrument and Procedure

Data were collected by interviewer-administered structured questionnaire, composed of socio-demographic variables, economic factors and reproductive history of pregnant women including awareness and practice of family planning and unintended pregnancy as well as birth and induced abortions. Seven BSc nurses and three Health officers of female data collectors were recruited considering women's preference in the community. Who were working in Addis Ababa health centers? They received two days intensive training. The training was given on how to ask and fill the question, selection criteria of ANC attending pregnant women, and how to approach the mothers. Before the actual data collection days,

Data Quality Control

The questionnaire was initially prepared in English and translated into local language and again back translated into English by another expert to check for its consistencies. And the questionnaire was pre-tested prior to data collection in pregnant women who were attending ANC outside the study area. In Kebena health center (one of the health centers in Addis Ababa city administration) on 20 (5%) of the sample and modifications were done accordingly. Moreover, during data collection, supervisor's checked how the data collection process was going on. At the end of each data collection day, the principal investigator and supervisors also checked the completeness of filled questionnaires. Every questionnaire was checked before data entry by a principal investigator.

Data Management and Analysis

All collected data were checked for completeness and coded and entered into EPI-INFO and SPSS version 20 statistical package software was used to analyze the data. Summary statistics such as, percentage and frequency were computed, table and graphical techniques were used. The bivariant analysis was done to test the association between the independent and outcome variables. All explanatory variables that were associated with the outcome variable in the bivariate analysis were included in multivariate logistic regression, to determine the independent predictor of unintended pregnancy. P-value of <0.2 was considering as a cut-off point for statistically significant.

Ethical Consideration

Ethical clearance was obtained from the ethics review committee of the Addis Ababa University School of Public Health (AAU/SPH) and letter of permission was also obtained from the Addis Ababa Health Bureau and health institutions. The study participants were informed of the purpose of the study, their right to participate or refuse to participate in the study was explained. Informed consent was obtained from every respondent; strict confidentiality of information was also maintained through anonymous recording and coding of a questionnaire.

RESULTS

Socio-Demographic and Economic Characteristics

A total of 393 pregnant women responded to the questionnaire. More than a third of the respondents, 152 (38.7%) were between 25-29 years of age (Table 2).

One hundred twenty-three (31.3%) were between 20-24 years, 64 (16.3%) were between 30-34 years, 31(7.9%) were between 35-39 years and 23(2.9%) were between 15-19 years of age. The median age was found to be 26.16 years. Among the respondents the majority, 341 (86.8%) were married, 30 (7.6%) were never married, whereas divorce and widowed respondents account for 24 (5.6%). Concerning age at first marriage, 168 (47.1%) of respondents got marriage at the age of 20-24 years, 110 (30.8%) were 15-19 years, 71 (19.9%) were 25-29 years and 8 (2.2%)

were the 30-34 year of first marriage, with a median of 22 years.

In terms of educational levels, 27 (6.9 %) were illiterate (unable to read and write), 19 (4.8%) were primary, and 230 (58.5%) attended secondary while 30 (7.6%) were technical/vocational education. 87 (22.1%) of those had completed the diploma or above higher education. The majority of Participants, 372 (94.7%) were urban residents. 21 (5.3%) were rural and come from out of Addis Ababa for ANC follow up.

Concerning Religion, 261 (66.4%) were Orthodox, followed by 76 (19.3%) Muslim, and 51 (13%), Protestant, and 5 (1.3%) were Catholic. In Ethnicity,

162 (41.2%) were Amhara, 103 (26.2%) were Oromo, 77 (19.6%) were Gurage, while the rest 51 (13%) were Tigray, Wolayeta, and Somali.

One Hundred and sixty-one (41%) were housewives, followed by, 70(17.8%) government employees and 87(22.1%) were private employees, 52 (13.2%) were self-employed and 23(5.8%) were student 6 (1.5%) (Table 2).

Concerning monthly income, more than one-third of the respondent 143(36.3%) reported less than 500-birr monthly income, followed by 96(24.4%) were 501-1000 birr, 76(19.3%) were 1001-2000 birr, 40(10.2%) were 2001-3000 birr, and 38(9.2%) were above 3001-birr monthly income. (Table 2).

Table 2 Socio-Demographic Characteristics of Pregnant Women Attending ANC Clinic at Selected Public Health Centers in Addis Ababa, Ethiopia, February – May, 2015 (n=393)

| Characteristics | | Number | Percent | |
|---------------------------------|----------------------|--------|---------|--|
| Age (n=393) | 15-19 | 23 | 5.9 | Median age =26 |
| | 20-24 | 123 | 31.3 | |
| | 25-29 | 152 | 38.7 | |
| | 30-34 | 64 | 16.3 | |
| | 35-39 | 31 | 7.9 | |
| Marital Status (n=393) | Married | 341 | 86.8 | Median age at first marriage 22 years |
| | Never married | 30 | 7.6 | |
| | Divorce | 11 | 2.8 | |
| | Widowed | 11 | 2.8 | |
| Women Highest education (n=393) | Higher | 87 | 22.1 | |
| | Technical/vocational | 30 | 7.6 | |
| | Secondary | 230 | 58.5 | |
| | primary | 19 | 4.8 | |
| Residence (n=393) | Illiterate | 27 | 6.9 | |
| | Rural | 21 | 5.3 | |
| Religion (n=393) | Urban | 372 | 94.7 | |
| | Orthodox | 261 | 66.4 | |
| | Muslim | 76 | 19.3 | |
| | Catholics | 5 | 1.3 | |
| | Protestant | 51 | 13 | |
| Ethnicity (n=393) | Oromo | 103 | 26.2 | |
| | Amhara | 162 | 41.2 | |
| | Tigray | 33 | 8.4 | |
| | Gurage | 77 | 19.6 | |
| | wilayat | 15 | 3.8 | |
| | Somalia | 3 | 0.8 | |

| | | | |
|-------------------------------------|-------------------|-----|------|
| Occupation (n=393) | Housewife | 161 | 41 |
| | student | 23 | 5.8 |
| | Gov. employee | 70 | 17.8 |
| | Private employee | 87 | 22.1 |
| | Own business | 52 | 13.2 |
| House Hold Income per month (n=393) | Less than 500birr | 143 | 36.4 |
| | 501-1000 birr | 96 | 24.4 |
| | 1001-2000 birr | 76 | 19.3 |
| | 2001-3000 birr | 40 | 10.2 |
| | Above 3001birr | 38 | 9.2 |

Reproduction History of Respondents

Table 3 below shows the previous intentions of the respondents about their current pregnancies. Eighty-three (21.1%) of the respondents mentioned that they wanted their current pregnancies later (mistimed) and 60 (15.3%), reported that they did not want their current pregnancies at all (unwanted). When summing up these two, 143(36.4%.95% CI;31%.8,41.7%). of respondents reported their current pregnancies were unintended (that is, mistimed or unwanted pregnancy).

Among respondents, 221(56.2%) of them had previously pregnancies history and 108 (48.9%) of these had had 1–2 previous times pregnancy history, while 102 (46.2%), were 3-4 times and the rest, 11(5%) were 5-6 times. Regarding a number of parity,

150 (67.9%) had 1-2 times, 52(23.5%) 3-4 times and 19(8.6%) had no parity.

Regarding the history of Abortion, 106(48%) had the abortion, of these 101(95.3%) did 1-2 times, and 5(4.7%) did 3-4 times.

Ninety-seven (43.9%) had no previous unintended pregnancies, but the rest, 124 (56.1%) had previous unintended pregnancies of these 94 (96.9%) had 1–2 times, 3(3.1%) were 3-4 times previous unintended pregnancies. 56(14.2%) were within last three years the rest 41(10.4) were before three years. Regarding previous unintended pregnancy action, 64(66%) discontinued 5(5.2%) attempted to discontinue but not succeed, but rest 28(28.8%) did nothing so that unintended pregnancy continued. (See table 3, below).

Table 3 Reproductive History of Pregnant Women Attending ANC Clinic at Selected Public Health Centers in Addis Ababa, Ethiopia, February 2015

| Characteristics | Number | Percent |
|--------------------------------------|---------------|----------|
| Unintended Pregnancy (n=393) | Yes | 143 36.4 |
| | No | 250 63.6 |
| Type of Unintended Pregnancy (n=143) | Mistimed | 83 21.1 |
| | Unwanted | 60 15.3 |
| Past Pregnancy History (n=393) | Yes | 221 56.2 |
| | No | 172 43.8 |
| No. of Previous Pregnancy (n=221) | 1-2 Pregnancy | 108 48.8 |
| | 3-4 Pregnancy | 102 46.2 |
| | 5-7 Pregnancy | 11 5 |
| Parity Category (n=221) | No Parity | 52 23.5 |
| | 1-2 Times | 150 67.9 |
| | 3-4 Times | 19 8.6 |

| | | | |
|----------------------------------|-----------------------------------|-----|------|
| Previous Abortions (n=221) | Yes | 106 | 48 |
| | No | 115 | 52 |
| No. of Previous Abortion (n=106) | 1-2 Abortion | 101 | 95.3 |
| | 3-4 Abortion | 5 | 4.7 |
| Previous Abortion Type (n=106) | Induced | 64 | 60.4 |
| | Spontaneous | 42 | 39.6 |
| History of UP (n=221) | Yes | 97 | 43.9 |
| | No | 124 | 56.1 |
| Previous UP Time (n=97) | Within Last Three Years | 56 | 57.7 |
| | Before Three Years | 41 | 42.3 |
| No Previous UP (n=97) | 1-2 Times | 94 | 96.9 |
| | 3-4 ATimes | 3 | 3.1 |
| | Nothing UP Continue | 28 | 28.8 |
| Previous UP Action (n=97) | Attempted to Stop but not Succeed | 5 | 5.2 |
| | Attempted to Stop & Succeed | 64 | 66 |

UP-Unintended Pregnancy

Family History of ANC Attending Pregnant Women

As depicted in Table 4 below a majority of the respondents, 388(98.7%) had heard of modern contraceptives. Their source of information included: 272 (70.1%) from television, 252 (64.9%) from radio, 220 (56.7%) from their friends, 201(51.8%) from hospitals and 39(10.1%) had by reading their Own different papers.

Regarding awareness on family planning, Injectable and Pills were the most familiar methods and knew around 361 (93%), 349(89.9), respectively followed by implant for 290(74%), IUCD 278(71.6%), condom 268(69.1%), Emergency contraceptive pills 181(46.6%), calendar method 163(42%) and the last one had tubal ligation 11(2.8%) one respondents Knew more than one contraceptive methods. (See Table 4)

Table 4 Awareness and Source of Information about Modern FP Methods among Women Attending ANC Clinic at Selected Public Health Centers in Addis Ababa, Ethiopia, February to May 2015

| Characteristics | Number | Percent | |
|---|--------|---------|------|
| Have you heard about FP (n=393) | Yes | 388 | 98.7 |
| | No | 5 | 1.3 |
| Source of Information on Radio (n=388) | Yes | 252 | 64.9 |
| | No | 136 | 35.1 |
| Source of Information on TV (n=388) | Yes | 272 | 70.1 |
| | No | 116 | 29.9 |
| Source of Information on Friends (n=388) | Yes | 220 | 56.7 |
| | No | 168 | 43.3 |
| Source of Information on Health Facilities (n=388) | Yes | 201 | 51.8 |
| | No | 187 | 48.2 |
| Source of Information on Newspaper, Magazine (n=388) | Yes | 39 | 10.1 |
| | No | 349 | 89.9 |
| Which modern contraceptive methods are you aware – Pills (n=388) | Yes | 347 | 89.4 |
| | No | 41 | 10.6 |
| Which modern contraceptive methods are you aware – Condom (n=388) | Yes | 268 | 69.1 |

| | | | |
|--|-----|-----|------|
| Which modern contraceptive methods are you aware – Injectables (n=388) | No | 120 | 30.9 |
| | Yes | 361 | 93 |
| Which modern contraceptive methods are you aware – IUCD (n=388) | No | 27 | 7 |
| | Yes | 278 | 71.6 |
| Which modern contraceptive methods are you aware – Implants (n=388) | No | 110 | 28.4 |
| | Yes | 290 | 74.7 |
| Which modern contraceptive methods are you aware – Calendar (n=388) | No | 98 | 25.3 |
| | Yes | 163 | 42 |
| Which modern contraceptive methods are you aware – EC (n=388) | No | 225 | 58 |
| | Yes | 196 | 50.5 |
| Which modern contraceptive methods are you aware – TL (n=388) | No | 192 | 49.5 |
| | Yes | 11 | 2.8 |
| Awareness of Modern Contraceptive Methods in the Past (n=388) | No | 377 | 97.2 |
| | Yes | 292 | 75.3 |
| Emergency Contraceptive Awareness (n=393) | No | 96 | 24.7 |
| | Yes | 196 | 49.9 |
| Emergency Contraceptive Awareness - Pills (n=196) | No | 197 | 50.1 |
| | Yes | 194 | 99.0 |
| Emergency Contraceptive Awareness - IUCD (n=196) | No | 2 | 1.0 |
| | Yes | 16 | 8.2 |
| | No | 180 | 91.8 |

Reasons to Unintended Pregnancy

The major reason of unintended pregnancy was don't have enough money to take care of the baby 161(42.7%) followed by 19(13.4%) were since in school, 16(11.2%) not in a marriage, 12(8.4%) were encounter objection from their partner, 11 (7.7%) were divorced, 9(6.3%) had short gap from previous pregnancy, 8(5.6%) were raped, 4(2.8%) were they don't like pregnancy at all, and others 3 (2.1%). (Fig.2).

Frequent reason not using contraceptive to prevent unintended pregnancy were contraceptive failure 65(45.5%), followed by 26(18.2%) fear of side effect, 7(4.9%) forget taking of contraceptive on right time, 8(5.6%) had Religious and moral reason, 6(4.2%) thought they were too young to attend family planning, 19 (13.3%), not available, 9(6.3%) were lack of awareness about modern contraceptive methods, the rest 3(2.1%) were others (see Table 5, below).

Table 5 Reasons of Unintended Pregnancy among Women Attending ANC Clinic at Selected Public Health Centers in Addis Ababa, Ethiopia, February to May 2015

| Characteristics | | Number | Percent |
|---|--|--------|---------|
| Reasons of Unintended Pregnancy (n=143) | Since in School | 19 | 13.3 |
| | Don't have enough money to take care of the baby | 61 | 42.7 |
| | Raped | 8 | 5.6 |
| | Divorced | 11 | 7.7 |
| | Not Marriage | 16 | 11.2 |
| | Short gap between previous pregnancy | 9 | 6.3 |
| | No support from partner | 12 | 8.4 |
| | I don't like pregnancy at all | 4 | 2.8 |

| | | | |
|--|-------------------------------------|-----|------|
| Reasons of Not Using Contraceptive (n=143) | Others | 3 | 2.1 |
| | Too young to attend FP | 6 | 4.2 |
| | No awareness on contraceptive | 9 | 6.3 |
| | Contraceptive methods not available | 19 | 13.3 |
| | Religious and Moral Reasons | 8 | 5.6 |
| | Method Failure | 65 | 45.5 |
| | Fear of side effects | 26 | 18.2 |
| | Forget it | 7 | 4.9 |
| | Others | 3 | 2.1 |
| Autonomy of Women Healthcare (n=393) | You | 153 | 38.9 |
| | Partner/Husband | 11 | 2.8 |
| | You and your husband jointly | 229 | 58.3 |
| | You | 160 | 40.7 |
| Autonomy of Women FP used (n=393) | Partner/Husband | 17 | 4.3 |
| | You and your husband jointly | 185 | 47.1 |
| | Health Professionals | 31 | 7.9 |
| Autonomy of Women Income Management (n=393) | You | 182 | 46.3 |
| | Partner/Husband | 50 | 12.7 |
| | You and your husband jointly | 161 | 41 |
| Spousal Communication on Family Planning (n=393) | Yes | 261 | 66.4 |
| | No | 132 | 33.6 |

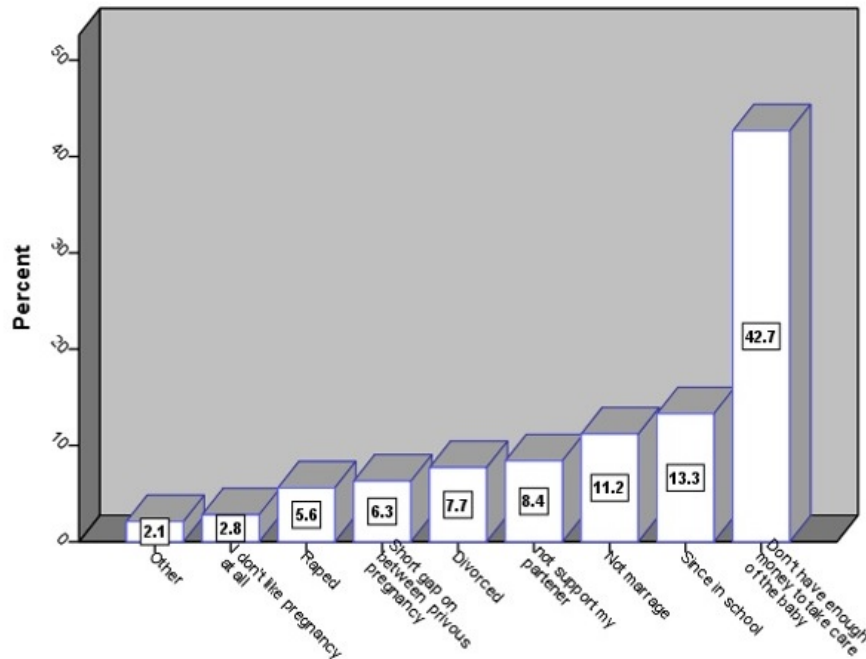


Fig 2 Distribution of Reasons of Unintended Pregnancy among Study Participants in Addis Ababa, Ethiopia , 2015

One hundred eighty-five 185(47.1%) had autonomy on their family planning decision 160 (40.7%) decided with husband jointly, 17(4.3%) were husband, and 31(7.9%) were health professionals.

Regarding spousal communication, 261(66.4%) discussed their spousal on family planning methods. Concerning autonomy of income management, 182(46.3%) were women, 161(41%) were women and their husband jointly, while 50 (12.7%) husband had the autonomy. (See Table 5).

Bivariate and Multivariable Regression Analysis

On the binary logistic regression analysis, age of respondent, marital status, women is highest attained education, occupation, monthly income, History of unintended pregnancy, autonomy of women on income management, own health care, family planning decision, spousal communication on family planning, family planning information on television, hospital, awareness of family planning type pills, condom, IUCD, implant, calendar method and awareness of taken family planning according to instruction were associated with unintended pregnancy at $p < 0.2$ But others not significant. In the multivariable model of logistic regression, variables which had a significant level of $p < 0.2$ were entered

into the model. The Adjusted OR (AOR) findings showed. The odds of unintended pregnancy among the educational level of technical and vocational were 8 times more likely than from those with the diploma and above educational level (AOR= 7.9; 95% CI; 1.3,48.6) at $p < 0.026$. Concerning occupation, the odds of unintended pregnancy among own business maker which is about 4 times more likely to experience unintended pregnancy compared to housewives (AOR=3.85;95%CI;1.068,13.914) at $p < 0.039$. The odds of unintended pregnancy among no Spousal communication were 4 times more likely than Spousal communication (AOR=3.9; 95%CI; 1.6, 9.5) at $p < 0.003$. The odds of unintended pregnancy among no awareness IUCD were almost 4 times more likely to be experienced to unintended pregnancy than from those who have awareness about long term FP (IUCD) (AOR=4.4;95%CI;1,19) at $p < 0.044$. But marital status, monthly income, History of unintended pregnancy, autonomy of women on income management, own health care, family planning decision, family planning information on television, hospital, awareness of family planning type pills, condom, implant, calendar method and awareness of taken family planning according to instruction were no associated with unintended pregnancy on multivariable analysis at $p < 0.05$.

Table 6 Multiple Logistic Regression Analysis for Factors Associated with Unintended Pregnancy at Selected Public Health Centers in Addis Ababa, Ethiopia, February to May 2015

| Characteristics | Status of Pregnancy | | COR, 95% CI | AOR, 95% CI | P-value | |
|-------------------------|---------------------|----------|-------------|----------------------|---------------------|--------|
| | Unintended | Intended | | | | |
| Women Highest Education | Higher | 27 | 60 | 1.0 | 1.0 | |
| | Technical | 16 | 14 | 0.360(0.149,0.872) | 7.908[1.286,48.642] | 0.026* |
| | Secondary | 76 | 154 | 0.914(0.322,2.598) | 1.798(0.507,6.74) | 0.364 |
| | Primary | 9 | 10 | 0.395(0.176,0.885) | 0.953(0.104,8.374) | 0.966 |
| | Illiterate | 15 | 12 | 0.720(0.222,2.338) | 2.798(0.434,18.050) | 0.279 |
| Occupation | Housewife | 47 | 114 | 1.0 | 1.0 | |
| | student | 14 | 3 | 11.521(3.720,35.683) | 0.43(0.12,15.823) | 0.650 |
| | Gov. employee | 24 | 46 | 1.265(0.695,2.304) | 1.162(0.581,8.045) | 0.250 |
| | Private employee | 34 | 53 | 1.556(0.899,2.693) | 1.783(0.533,5.968) | 0.348 |
| | Own business | 19 | 33 | 1.397(0.723,2.699) | 3.855(1.068,13.914) | 0.039* |

| | | | | | | |
|--------------------------------|-----|----|-----|--------------------|---------------------|--------|
| Spousal Communication on FP | Yes | 68 | 193 | 1.0 | 1.0 | |
| | No | 75 | 57 | 3.735(2.401,5.808) | 3.923(1.614,9.535) | 0.003* |
| Awareness of FP – IUCD (n=388) | Yes | 82 | 196 | 1.0 | 1.0 | |
| | No | 58 | 52 | 2.666(1.692,4.200) | 4.458(1.042,19.076) | 0.044* |

**p* – value significant at level of $P < 0.05$; COR-crude odds ratio; AOR-adjusted odds ratio

DISCUSSION

This study was conducted with the aim of assessing the magnitude and factors associated with unintended pregnancy among pregnant women attending ANC clinics. Despite the introduction of modern family planning and increase information and awareness on family planning; many studies including present study showed that unintended pregnancy is the common problem in Ethiopia.^{8,9,13,18,19,28,30,34}

In the multivariate analysis, Women education, Occupation, Spousal communication and awareness of contraceptive intrauterine device were found to have statistically significant on unintended pregnancy.

In the present study, the magnitude of unintended pregnancy was (36.4%.95% CI; 31%.8, 41.7%). The present finding is consistent with the facility based study done in Addis Ababa with a prevalence of 38.7%.¹⁷ But it is higher than the facility based study done in Bahir Dar 26%.¹⁸ This may be due to a difference in socio-demographic characteristic and it was done only in one facility.

The present study is comparable with other community-based study done in West Wollega with a prevalence of 36.5%.¹⁹ In Hossana town in 2011 with the prevalence of unintended pregnancy was 34%.²⁰ A study was done in Harari town Eastern Ethiopia 2001 proportion of unintended pregnancy were 33.3%.³⁵ In contrast, the study conducted in Damon Gale Woreda in Southern Ethiopia in 2011 showed that the prevalence of unintended pregnancy among married women was 42.2%,³⁰ which was much higher than the present study. This variation is due to the difference in socio-demographic characteristic, the availability of health care providers, availability health services, the study populations were only

married women, the time gap between studies and the study design. Present study compares with national study, EDHS 2011 prevalence of unintended pregnancy was (29%).⁸ But due to the figure not comparable.

Several studies showed that as the education level increases the rate of unintended pregnancy decrease and reduces the chance of discontinuity of contraceptive.^{8,19,24,28-30} In the present study, unintended pregnancy was associated among women with the educational level of technical and vocational which is about 8 times (AOR= 7.9; 95% CI; 1.3,48.6) more experience than from those with the diploma and above educational level. Even little advance in education improves women's decision-making power leading to avoidance of unintended pregnancy.³⁰ Also, technical and vocational may be group work related peer influence and risk to unintended pregnancy.

Spousal communication has the direct positive influence on unintended pregnancy. The odds of UP among no Spousal communication were 4 times more likely than Spousal communication (AOR=3.9; 95%CI; 1.6, 9.5). The present findings are similar to those from other studies in Senegal magnitude of unintended pregnancy among urban women and its main determinants.³⁴ Also, supported by previous studies documented that women's perception that their husbands oppose FP is one of the dominant factors for discouraging the contraceptive practice in a wide variety of settings. For instance, a study conducted in Damon Gale words in south Ethiopia.³⁰

Regarding their occupation, the odds of unintended pregnancy among own business maker which is about 4 times more likely to experience unintended pregnancy compared to housewives (AOR=3.8595%CI;1.068,13.914). Similar to the study done by Guttmacher Institute in 2010 Which is the

proportion of married women using modern contraceptives in the developing world as a whole greatly increased and reduced the experience of UP. Might also own business makers mostly may have high social interaction and mobile nature of their work, so they may face casual sex followed by unwanted pregnancy.

The odds of UP among inadequate awareness IUCD were almost 4 times more likely to be experienced to UP than from those who have adequate awareness about long term FP (IUCD) (AOR=4.4; 95%CI; 1, 19).

The present finding is in line with the study done in West College (OR 3.76: 95% CI; 2.37,5.96).^{29,25} Our result supports the hypothesis that if a woman has the higher awareness of methods, she is more likely to be aware of the benefits of that method which in turn will motivate her to use the methods and less likely to have the unintended pregnancy. The similar result was found in Ecuador as well.^{25,36}

Maybe it prevents short gaps between method changes, it used for a long year. This is related to its role in providing women with awareness on family planning and increasing current use of contraceptive which may result in low percentage of unintended pregnancy.³⁰

CONCLUSION AND RECOMMENDATION

The present study revealed that over one in three of (36.4%) the pregnant women attending ANC in Addis Ababa had unintended pregnancy experience. This indicates unintended pregnancy is one of the major reproductive health problems in the study area.

The results of this study showed that many factors were interwoven to affect the occurrence of the event including education status of women, occupation, spousal communication and awareness on long-term family planning, which showed significant, associated with unintended pregnancy.

The main reasons stated by study participants for unintended pregnancies did not have enough money to take care of the baby, in school, not in a marriage, not supported by a partner and Divorced.

Policy and program level: Address the issue of unintended pregnancies by designing strategies in policy documents strategic plans, including Health Sector Development Program.

Health worker: Provide information and counseling about each contraceptive methods in order to make the informed choice and correct method use and strengthening family planning method among client in need of the service, and spousal communication through peer education.

Mass media: Reproductive health programs, promoting long-term family planning methods by a provision of effective IEC and counseling, and encourage men's participation with their partner's infertility issues and using contraception.

Women's: Openly discuss with their spouses on fertility issues and using contraception methods.

Researcher: The present study has shown the positive effect of spousal communication on unintended pregnancy. Further research with a quantitative and qualitative study is needed to determine the exact nature and pattern of this relationship.

ACKNOWLEDGEMENT

We would like to express our thanks to the schools of Public Health, College of Health Sciences, Addis Ababa University for giving us the chance to conduct this research. Our heartfelt thanks also go to Addis Ababa City Administration Health Bureau for their cooperation and permission to conduct this study and Health Center Medical directors, who facilitated the data collection activities. We want to thank all the study participants and data collectors for their cooperation and willingness to participate in this study. Furthermore, we would like to thank all staffs of the School of Public Health library for providing us important references for this research work.

REFERENCES

1. Zolna, M. and L. Lindberg, Unintended Pregnancy: Incidence and Outcomes Among Young Adult Unmarried Women in the United States. Guttmacher Institute, 2012.

2. The Global Epidemic of Unintended Pregnancies, in European Society of Contraception and Reproductive Health International Federation of Gynecology and Obstetrics. 2011. p. 53.
3. Logan, C., et al., The Consequences of Unintended Childbearing. 2007.
4. Sedgh, G., S. Singh, and R. Hussain, Intended and Unintended Pregnancies Worldwide in 2012 and Recent Trends. Population Council, 2014.
5. WHO, Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008. 2011. 6th: p. 67.
6. Guttmacher, Facts on Unintended Pregnancy and Abortion in Ethiopia. Maiden Lane, 2010: p. 2.
7. Bureau, P.R., Population Reference Bureau 2008. World PoPulation data Sheet, 2008: p. 16.
8. Ethiopia, C.S.A. and I. International., Ethiopia Demographic and Health Survey 2011. 2012. 3: p. 450.
9. Z., G. and Malinga, Causes of unintended pregnancy among adolescents in Addis Ababa, Ethiopia. 2012: p. 91.
10. Worku, S. and M. Fantahun, Unintended pregnancy and induced abortion in a town with accessible family planning services: The case of Harar in eastern Ethiopia, *Ethiop.J.Health Dev*, 2006. 20(2).
11. Askew, I., Cause and Consequences of unintended pregnancy in Developing countries. population council, 2011.
12. Dibaba, Y., child spacing and fertility planning behavior among women in mana district, Jimma zone, southwest Ethiopia. *Ethiop j health sci.* , 2010. 20: p. 80-90.
13. Singh, u., et al., The Estimated Incidence of Induced Abortion In Ethiopia, 2008. *International Perspectives on Sexual and Reproductive Health*, 2010. 36(1): p. 16-25.
14. Salazar, M. and M.S. Sebastian, Violence against women and unintended pregnancies in Nicaragua: a population-based multilevel study, *BioMed Central*, 2014. 14(26).
15. Baksh, L., et al., Unintended Pregnancy in Utah. 1999.
16. Singh, S., et al., Abortion Worldwide: A Decade of Uneven Progress. Guttmacher Institute, 2009: p. 67.
17. Miles, M., Assessment of Magnitude and associated factors among pregnant women attending antenatal care at selected health centers in Addis Ababa, in *Shool of public health*. 2011, Addis Ababa Universty: Addis Ababa. p. 1-35.
18. Gebreamlak, W., et al., Magnitude and factors influencing unintended pregnancy among pregnant women attending antenatal care at Felege Hiwot referral hospital, Northwest Ethiopia: A cross-sectional study. *Science Journal of Public Health*, 2014. 2(4).
19. Teshome, F.T., A.G. Hailu, and A.N. Teklehayma, Prevalence of unintended pregnancy and associated factors among married pregnant women in Ganji woreda, west Wollega Oromia region, Ethiopia. *Science Journal of Public Health.* , 2014. Vol. 2.
20. Hamdela, B., A. G/Mariam, and T. Tilahun, Unwanted Pregnancy and Associated Factors among Pregnant Married Women in Hosanna Town, Southern Ethiopia. *PLoS ONE*, 2012. 7 (6): p. 6.
21. SEBASTIAN, M.P., M.E. KHAN, and D. SEBASTIAN, Unintended Pregnancy and Abortion in India Country Profile Report p. Council, Editor. 2014: New Delhi. p. 122.
22. Gcillboudo, P., s.M. somda, and J. sundb, Key determinants of induced abortion in women seeking postabortion care in hospital facilities in Ouagadougou, Burkina Faso. *International Journal of Women's Health* 2014. 6: p. 565-572.
23. Singh, S., J. E., and Darroch, Adding It Up: Costs and Benefits of Contraceptive Services Estimates for 2012. Guttmacher Institute and United Nations Population Fund (UNFPA), 2012: p. 28.
24. Islam, M.M. and M. Rashid, Determinants of Unintended Pregnancy among Ever -Marred women in Bangladesh. *Journal of family welfare*, 2004. 50(2): p. 40-47.
25. Adhikari, R., K. Soonthorndhada, and P. Prasartku, Determinants of Unintended pregnancy among currently pregnant married women in Nepal
26. Trussell, J., E.G. Raymond, and K. Cleland, *Emergency Contraception: A Last Chance to Prevent Unintended Pregnancy* 2014.
27. le, H.H., et al., The burden of unintended pregnancies in Brazil: a social and public health system cost analysis. *International journal of women's health*, 2014. 4(663): p. 663-670.
28. Kassa, N., Y. Berhane, and A. Worku, Predictors of unintended pregnancy in Korea, Eastern Ethiopia, 2010. *Reproductive Health Journal*, 2012. 9(1).



29. Ikamari, L., et al., Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya. *BMC Pregnancy and Childbirth* 2013. 13(69).
30. Geda, N.R. and T.K. Lako, A population-based study on unintended pregnancy among married women in a district in Southern Ethiopia. *Journal of Geography and Regional Planning* Vol. 4(7), pp. 417-427, July 2011. 4(7): p. 11.
31. Wado, Y.D., Women's Autonomy and Reproductive Healthcare-Seeking Behavior in Ethiopia 2013: p. 34.
32. Omane, M., F. T, and K. Annin, Multinomial Regression Analysis of Unplanned Pregnancies in Ahafo Ano South District, Ghana. *American International Journal of Contemporary Research*, 2012. 2(12): p. 8.
33. Kahsay, Z.Y., Addis Ababa; Atlas of Key Demographic and Socio-Economic Indicators P.A.C.S.p.F.a.E.D. Bureau, Editor. 2010: Addis Ababa. p. 46.
34. Faye, e. and Assess the magnitude of unintended pregnancy among urban women and to identify its main determinants. *Reproductive Health Journal*, 2011.
35. Worku, S. and M. Fantahun, Unintended pregnancy and induced abortion in a town with accessible family planning services: The case of Harar in eastern Ethiopia *Ethiop. J. Health Dev*, 2006. 20(2).
36. Eggleston, E., Determinants of Unintended Pregnancy among women in Ecuador. *family Health International*, 199. 25(1): p. 27-33.