

HARAMAYA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Unintended pregnancy and its associated factors in Mi'eso Woreda, West Hararghe Zone, Oromia Regional State, Eastern Ethiopia

MPH Research Thesis

Kedir Hassen Mume (BSC)

College: Health and Medical Sciences

School: Public Health

Program: General Public Health

Major Advisor: Abera Kenay (PhD, Assistant Professor)

Co-advisor: Negga Baraki (MPH, Assistant Professor)

June, 2021

Haramaya University, Harar

HARAMAYA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Unintended pregnancy and its associated factors in Mi'eso Woreda, West Hararghe Zone, Oromia Regional State, Eastern Ethiopia

A thesis submitted to the college Of Health Science, School Of Graduate studies, Haramaya University.

In partial fulfillment of the requirement the degree of Master in General Public Health

Kedir Hassen Mume

Major Advisor: Abera Kenay (PhD, Assistant Professor)

Co-advisor: Negga Baraki (MPH, Assistant Professor)

June, 2021

Haramaya University, Harar

STATEMENT OF THE AUTHOR

By my signature below, I declare and affirm that this Thesis is my own work. I have followed all ethical and technical principles of scholarship in the preparation, data collection, data analysis, and compilation of this Thesis. Any scholarly matter that is included in the Thesis has been given recognition through citation.

This Thesis is submitted in partial fulfillment of the requirements for MPH degree at the Haramaya University. The Thesis is deposited in the Haramaya University Library and is made available to borrowers under the rules of the Library. I solemnly declare that this Thesis has not been submitted to any other institution anywhere for the award of academic degree, diploma, or certificate.

Brief quotations from this may be made without special permission provided that accurate and complete acknowledgement of the source is made. Requests for permission for extended quotations from or reproduction of this thesis in whole or in part may be granted by the Head of the School or Department when in his or her judgments the proposed use of the material is in the interest of scholarship. In all other instances, however, permission must be obtained from the author of the Thesis.

Name: _____ Signature: _____

Date: _____

School/Department: _____

BIOGRAPHICAL SKETCH

The author was born in 1992 in East Hararghe zone, Oromia, Ethiopia. I attended elementary and Secondary School in East Hararghe. After completion of Secondary School, I joined Madawalabu University in 2011 and studied Public Health professional. After graduation I was employed in 2015 Boke Woreda ,Boke Tiko Health center , West Hararghe zone, Oromia region on October 11, 2015. I am a graduating MPH student at Haramaya University Since 2021.

ACKNOWLEDGEMENTS

First and for most, I would like to thank my God for being with me in any situation. Next, I would like to thank my advisors Dr. Abera Kenay and Mr. Negga Baraki for their constructive comments, and timely guidance from the proposal development till completion of this thesis. I would also like to express my deepest gratitude to Haramaya University College of Health and Medical Sciences for giving me this chance. I would like to extend my thanks to my families.

Last but not least, I would like to extend my sincere thanks to data collectors, supervisors and study participants for their willingness to give their time and information for this study.

TABLE OF CONTENTS

APPROVAL SHEET	I
STATEMENT OF THE AUTHOR	II
BIOGRAPHICAL SKETCH	III
ACKNOWLEDGEMENTS	IV
TABLE OF CONTENTS	V
LIST OF TABLES	VII
LIST OF FIGURES	VIII
LIST OF ACRONYMS/ABBREVIATIONS	IX
Abstract	X
1. INTRODUCTION	1
1.1. Background	1
1.2. Statement of the problem	3
1.3. Significance of the study	5
1.4. Objectives	5
1.4.1. General objective	5
1.4.2. Specific objectives	5
2. LITERATURE REVIEW	6
2.1. Prevalence of Unintended Pregnancy	6
2.2. Factors Associated with Unintended Pregnancy	7
2.2.1. Socio demographic factors	7
2.2.2. Contraceptive Methods and Reproductive factors	7
2.2.3. Access of Health information and services factors	10
2.3. Conceptual frame work	11
3. MATERIALS AND METHODS	12
3.1. Study area and period	12
3.2. Study design	12
3.3. Population	12
3.3.1. Source population	12
3.3.2. Study population	12
3.4. Inclusion and Exclusion criteria	12

3.4.1. Inclusion criteria	12
3.4.2. Exclusion criteria	12
3.5. Sample size determination	13
Table 1: Sample size determination for factors associated with unintended pregnancy among pregnant women in Mi'eso woreda, West Hararghe zone, 2020	14
3.7. Data collection methods.....	17
3.8. Variables	17
3.8.1. Dependent variable	17
3.8.2. Independent variables	17
3.9. Operational definitions.....	17
3.10. Data quality control.....	18
3.11. Data processing and analysis	18
3.12. Ethical considerations	18
3.14. Information dissemination	19
4. Results.....	20
4.1. Socio demographic characteristics.....	20
4.3. Access to health information.....	23
4.4. Unintended pregnancy and its associated factors.....	24
5. Discussion	31
6. Strengths and limitations.....	34
7. Conclusion	35
8. Recommendations.....	36
9. REFERENCES	37
10. ANNEXES	43
10.1. Annexes A: Participant information sheet and informed voluntary consent form.....	43
10.2. Annexes B: English version questionnaires.....	45
10.3 Annexes C: Participant information sheet and informed voluntary consent form in Afan Oromo Version.....	50
10.4 Annexes D: Afan Oromo Version Questionnaires.....	52
10.5 Annexes E: Curriculum Vitae	58

LIST OF TABLES

Table 1: Sample size determination for factors associated with unintended pregnancy among pregnant women in Mi'eso woreda, West Hararghe zone, 2020-----	14
Table 2: Socio demographics characteristics pregnant women in Mi'eso Woreda, West Hararghe Zone, Oromia Region, Eastern Ethiopia, 2020-----	20
Table 3: Reproductive characteristics and contraceptive history of pregnant women in Mi'eso Woreda, 2020 (n=508) -----	21
Table 4: Access to health information/services in Mi'eso Woreda, 2020-----	23
Table 5: Binary logistic regression analyses of factors associated with unintended pregnancy in Mi'eso woreda, 2020-----	25
Table 6: Multivariate analysis of factors associated with unintended pregnancy among pregnant women in Mi'eso woreda, West Hararghe, 2020-----	29

LIST OF FIGURES

Figure1. Conceptual framework for factors associated with unintended pregnancy in Mi'eso woreda-----	11
Figure 2. Schematic presentation of sampling procedure for study of unintended pregnancy in Mi'eso Woreda, 2020-----	16
Figure 3. Reported reason for unintended pregnancy in Mi'eso Woreda, West Hararghe, 2020---- -----	24

LIST OF ACRONYMS/ABBREVIATIONS

AOR	Adjusted Odds Ratio
ANC	Antenatal care
CI	Confidence Interval
CSA	Central Statistical Agency
DHS	Demographic and Health Survey
EDHS	Ethiopian Demographic and Health Survey
IHRERC	Institutional Health Research Ethics Review Committee
MMR	Maternal Mortality Ratio
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

Abstract

Back ground: Unintended pregnancy is a public health problem that can lead to negative health outcomes for both the mother and children. Globally, an estimated 44% of pregnancies and 23% of births are unintended, of which 56% ended in abortion. As to my level of knowledge, little is known about prevalence and associated factors of unintended pregnancy in Eastern Ethiopia in general and Mi'eso Woreda in particular.

Objectives: To assess prevalence and factors associated with unintended pregnancy in Mi'eso Woreda, West Hararghe, Oromia Region, Eastern Ethiopia, 2020.

Methods: A community based cross-sectional study was conducted among 508 pregnant women residing in eight randomly selected kebeles in the woreda. Simple random sampling was used to select study participants and pretested structured questionnaire was used to collect data via face to face interview. The collected data were cleaned, cross checked, edited, coded and entered in to Epi-Data 3.1 and exported to SPSS 21 for analysis. Binary and multiple logistic regressions were fitted to assess factors associated with unintended pregnancy. Odds ratio with 95 % confidence interval was used to describe association and level of significance was declared at p-value < 0.05.

Result: Of 508 pregnant women included in the study, 173 (34.1%) women reported unintended pregnancy: mistimed (78.6%) and unwanted (21.4%). Rural residence (AOR=2.95, 95% CI: 1.7-5.1), parity of ≥ 5 (AOR=3.03, 95% CI: 1.5-6.02), age at first pregnancy <20 years (AOR=4.4, 95% CI: 2.6-7.4), history of abortion (AOR=5.4, 95 CI: 3.1-9.5), lack of contraception awareness (AOR=2.45,95% CI: 1.2-5.2) and had no discussion about family planning with husband (AOR=2.63, 95% CI: 1.5-4.5) were significantly associated with unintended pregnancy.

Conclusion: In this study the prevalence of unintended pregnancy was high, majority of which were mistimed.

Strong postpartum counseling about family planning is required to reduce the high mistimed pregnancy.

Key word: Unintended, Mistimed, Unwanted pregnancy, Mi'eso Woreda.

1. INTRODUCTION

1.1. Background

Pregnancy is a happy event for the women, husband, families, and community when it is wanted or intended. But this is not always the case, because millions of women around the world become pregnant unintended (Bearak et al., 2018). Unintended pregnancy is a pregnancy that is either unwanted or mistimed, when no children or no more children were desired or occurred earlier than desired (Santelli et al., 2003).

Globally, an estimated 44% of pregnancies and 23% of births are unintended. In Africa 39% of all pregnancies and 27% of births are unintended (Bearak et al., 2018). From 1990 to 2014 the rate of unintended pregnancy decreased by 30% in developed countries, while only 16% decreased in developing countries (Bearak et al., 2018). Unintended pregnancy is 36% higher in developing countries than developed countries (Sedgh et al., 2016).

Globally, the maternal mortality rate was 211 per 100, 000 live births and 254000 maternal deaths in a year due to pregnancy related complications in sub-Saharan Africa and Southern Asia, which accounts for approximately 86% of the global maternal deaths with sub-Saharan African countries alone accounted for 66% (196000) of all maternal deaths in 2017 (WHO, 2019). Moreover, in Ethiopia, the maternal mortality rate was 401 per 100, 000 live births (WHO, 2019).

Unmet need for family planning contributes to a high burden of unintended pregnancy and poor reproductive health outcomes, including risk of maternal morbidity and mortality (Petruney *et al.*, 2012). More than 65.0% of women with an unintended pregnancy in 36 low and middle-income countries were either non-users or using traditional family planning methods (Bellizzi et al., 2020). Despite improvements in contraceptive use and decline of total fertility rate to 4.6 children per woman in 2016 in Ethiopia, unintended pregnancy decline slight from 29% in 2014 to 25% in 2016 (CSA et al., 2012; CSA et al., 2016). In Ethiopia wanted fertility rate is 3.6 children as compared to total fertility rate, 4.6 children, which indicates women in Ethiopia are at the burden of having, on average one child more than they want (CSA et al., 2016)

The incorrect use of a contraceptive method, failure of the chosen methods, unmet need for family planning, not using contraceptive methods, lower income and husband refusal are the major contributing factors for unintended pregnancy (Choden et al., 2015; Beyene, 2019).

In addition, most of the unintended pregnancies occur in developing countries largely due to poor literacy and lack of knowledge and access to contraceptive methods (Nyarko, 2019; Singh et al., 2013 ; Goshu and Yitayew, 2019).

In Ethiopia, 24.7 and 42% of unintended pregnancy caused by contraceptive failure and not using contraceptive methods respectively (Getu Melese et al., 2016). In 2016, the unmet need for family planning in Oromia region was the highest of all region in Ethiopia, (28.9%) ,17.1% mistimed and 18.8 % unwanted (CSA et al., 2016).

Preventing unintended pregnancy and minimizing the number of abortion are the key priorities associated with maternal and child health and one of the main objectives of the public health policies in the world (UN, 2009). Reducing maternal mortality is closely related to prevention of unintended pregnancy (Santelli et al., 2003). Preventing unintended pregnancy through effective family planning could avert about 30% of maternal death (Gipson et al., 2008). Also, in Ethiopia through implementing effective family planning interventions could avert an estimation of nearly 15 million unintended pregnancies and more than 30,000 maternal deaths between 2015 and 2020 (FMOH, 2016). However, the modern family planning utilization rate was very low (35%) in Ethiopia (CSA et al., 2016).

To alleviate the problem, the Ethiopian government had prepared a national reproductive health strategy that gives stress on reducing unintended pregnancy by increasing access, creating demand and improving utilization of quality family planning service, with performance targets of increasing contraceptive prevalence rate to 55%, reduce total fertility rate to 3, and reduce unmet need to modern contraceptive method to 10% by 2020 (FMOH, 2016).

1.2. Statement of the problem

Unintended pregnancy is the major sexual and reproductive health problems that impose to substantial health, economical and psychosocial costs to individual and society as well as significant emotional distress to women, families and society globally (Hernandez, 2013).

Globally, an estimated 56% of unintended pregnancies were ended in abortion. Similarly, in Eastern Africa 30% of unintended pregnancies ended in abortion (Bearak et al., 2018). Following unintended pregnancy about 25.1 million unsafe abortions took place worldwide each year between 2010 and 2014, of which 24.3 million (97%) were in developing countries and 6.2 million occurred in Africa (Ganatra et al., 2017).

Unintended pregnancy is a worldwide problem that can lead to negative health outcomes for both mothers and children. It predispose to unsafe abortion, delayed or no prenatal care, home-based births, inadequate childhood immunization, poor maternal mental health, reduced mother/child relationship quality, poor developmental outcomes for children, increased risk of low birth weight as well as increased morbidity and mortality (Khajehpour et al., 2013; Singh et al., 2015).

Unintended pregnancies causes' death of 358,000 women around the world each year due to pregnancy-related causes and 47,000 deaths of women each year due to unsafe abortions (Ahman and Shah, 2011). Unsafe abortion is among the main cause of maternal death in the sub-Saharan Africa region (Bearak et al., 2018). In Ethiopia, unsafe abortion is a common cause of maternal mortality, which accounts for 19.7% maternal mortality (Tessema et al., 2017).

In addition unintended pregnancy can result in physical violence, economic cost and burden on society, increase risk of neonatal hospitalization, preterm delivery, still birth and reductions in quality of life, increase risk of neonate, infant and maternal death (Le et al., 2015).It may also has negative consequences on the infant and children, as it expose infant for less breast feeding ,more infant illness ,higher infant mortality, infant abuse and neglect ,more undernourished children , poor mental wellbeing and poor academic efficiency (Gipson et al., 2008).

Moreover, unintended births contribute significantly to unwanted population growth, which consequently compromises provision of adequate social services and economic burden on society (Le et al., 2015). Unintended pregnancy mainly results from not using any contraception,

inconsistent or incorrect use of effective contraceptive methods, discontinuation of using contraceptive methods, contraceptive failure, use traditional methods and unavailable of modern contraceptive methods (Bellizzi et al., 2020).

The reason for failure to prevent unintended pregnancy were identified as lack of knowledge, contraceptive failure, not considering to be fertile, husband refusal, fear of contraceptive side effects and contraceptive failure (Teshome et al., 2014; Beyene., 2019; Mohammed et al., 2016). Health institutions related barriers like accessibility, autonomy, reproductive health-related knowledge and health service quality are also identified (Choden et al., 2015).

Most of previous studies are facility based and may not reflect the true burden of unintended pregnancy, since many with unintended pregnancy are less likely to use ANC or seek institutional delivery (Abame et al., 2019). Determining the magnitude of unintended pregnancy as well as its associated factors, therefore require identifying women at community level which includes all women regardless of whether she receive ANC or visit facilities for delivery. However, as to my level of knowledge, little is known about prevalence and associated factors of unintended pregnancy in Eastern Ethiopia in general and Mi'eso Woreda in particular. This study was aimed to assess the prevalence of and factors associated with an unintended pregnancy among pregnant women in Mi'eso Woreda, West Hararghe Zone, Oromia Regional State, Ethiopia.

1.3. Significance of the study

The primary beneficiaries of the study are Mi'eso Woreda Health Office who will use the finding as the base line information for planning on maternal and other reproductive health services. In addition the primary beneficiaries of the study are the women/community at large.

The findings of this study also aimed to guide health professionals and reproductive health program planners to understand modifiable factors for intervention. In addition, findings of this study might serve as a base line for future researches on related issues.

1.4. Objectives

1.4.1. General objective

To assess prevalence of and factors associated with unintended pregnancy among pregnant women in Mi'eso Woreda, West Hararghe, Oromia Regional State, Eastern Ethiopia from July 1, to August 31, 2020.

1.4.2. Specific objectives

To assess prevalence of unintended pregnancy.

To identify factors associated with unintended pregnancy.

2. LITERATURE REVIEW

2.1. Prevalence of Unintended Pregnancy

In 2014, a study conducted in Nepal revealed that the prevalence of unintended pregnancy was 50% (Puri et al., 2016), while cross sectional study conducted in 2015 in Iran found 19.81% (Almasi-Hashiani et al., 2019). A cross sectional study in Brazil in 2012 has reported a prevalence of unintended pregnancy of 55.4% (Theme-Filha et al., 2016).

A secondary analysis of demographic and health survey data of 29 sub-Saharan Africa countries reported the overall prevalence of unintended pregnancy to be 29%, ranging from 10.8% in Nigeria to 54.5% in Namibia (Ameyaw et al., 2019). Studies conducted in Ghana, South Africa, and Sudan reported a prevalence of unintended pregnancy to be 40%, 64.33% and 30.2%, respectively (Nyarko, 2019; Haffejee et al., 2018; Sabahelzain et al., 2014).

According to the 2016, Ethiopian Demographic Health Survey, about 25 % of last pregnancies were unintended (CSA et al., 2016). A similar finding was reported in Addis Ababa (26.1%) (Goshu and Yitayew, 2019). Community based cross-sectional studies conducted in Belessa Woreda, Debre Birhan, and Bahir Dar town reported a prevalence of unintended pregnancy to be 13.7%, 23.5% and 15.8% respectively (Tsegaye et al., 2018; Getu Melese et al., 2016; Admasu et al., 2018).

Higher finding were reported in Tigray (26%), Hadiya zone (36.2%), West Wollega (36.5%), Arsi Negele (41.5%), Gelemso (27.1%), and Kersa, Eastern Ethiopia (27.9%) (Abayu et al., 2015; Abame et al., 2019; Beyene, 2019; Teshome et al., 2014; Fite et al., 2018; Mohammed et al., 2016; Kassa et al., 2012).

2.2. Factors Associated with Unintended Pregnancy

2.2.1. Socio demographic factors

In a cross-sectional study in Brazil, unintended pregnancy was associated with younger maternal age, i.e. < 20 years (Theme-Filha et al., 2016). A similar association of young maternal age and unintended pregnancy was also reported in studies conducted in Iran, Pakistan, Nigeria, Ghana, and the DHS re-analysis in 29 sub-Saharan African countries (Almasi-Hashiani et al., 2019; Habib et al., 2017; Yaya et al., 2018; Nyarko, 2019; Ameyaw et al., 2019), and also in different parts of Ethiopia (Yenealem and Niberet, 2019; Abayu et al., 2015). However, a cross-sectional study conducted in Jimma town, Oromia Regional State has shown that ≥ 35 years were 2.2 times more likely to experience unintended pregnancy compared to <18 years (AOR=2.21, 95% CI: 1.13-4.15) (Beyene, 2019). Similar statistical association of unintended pregnancy and maternal age ≥ 35 years were also found in studies conducted in Ganji woreda, and Arsi Negele, Oromia region (Teshome et al., 2014; Beyene, 2019; Fite et al., 2018).

Other socioeconomic conditions like maternal education and residence were also found to be associated with unintended pregnancy (Habib et al., 2017; Ameyaw et al., 2019; Nyarko, 2019; Goshu and Yitayew, 2019). In addition, studies conducted in South Africa, Kenya, and different parts of Ethiopia reported that marital status and maternal occupation were associated with unintended pregnancy (Haffejee et al., 2018; Ikamari et al., 2013; Kassahun et al., 2019; Yenealem and Niberet, 2019).

Other socio-demographic factors like religion (Yaya et al., 2018; Goshu and Yitayew, 2019) and economic status (Almasi-Hashiani et al., 2019; Haffejee et al., 2018; Kassahun et al., 2019; Kassa et al., 2012) were reported to be associated with unintended pregnancy.

2.2.2. Contraceptive Methods and Reproductive factors

A cross-sectional study in Brazil has shown that women with three or more births were 14.00 times more likely to have an unwanted pregnancy (AOR=14.95% CI: 11.29-1717.35) as compared with primiparas (Theme-Filha et al., 2016). Additionally, in 2015 a study in Pakistan showed that having a short birth interval of less than 12 months and having a parity of above two were the factors significantly associated with unintended pregnancy (Habib et al., 2017).

A study conducted in Sudan and Ghana shows that statistically significant association between parity of women and unintended pregnancy with (p-value= 0.001) (Sabahelzain et al., 2014; Nyarko, 2019). Similar association of unintended pregnancy and number of maternal parity were reported in several studies in Ethiopia (Goshu and Yitayew, 2019; Kassahun et al., 2019; Teshome et al., 2014; Fite et al., 2018; Mohammed et al., 2016).

A cross sectional study conducted in Addis Ababa and Debre Birhan town shows that women who have been pregnant for five and above were higher odd of being unintended pregnancy as compared to a women who have been pregnant for 2 times or less (Goshu and Yitayew, 2019; Getu Melese et al., 2016).

A study in Pakistan showed that lack of knowledge about family planning (AOR=3, 95% CI: 1.7-5.4) and never use of contraceptive methods (AOR= 2.3, 95% CI: 1.4-5.1) were also associated with unintended pregnancy (Habib et al., 2017). Studies conducted in South Africa, Ghana and Sudan were shows that women who were not use contraceptive had higher odd of unintended pregnancy as compared to a woman who had use contraceptive (Haffejee et al., 2018; Nyarko, 2019; Sabahelzain et al., 2014). Similarly, the DHS re-analysis in 29 sub-Saharan African countries revealed that women without contraception use had 1.87 times odds of having unintended pregnancies as compared to their counterparts (Ameyaw et al., 2019).

A study in Jimma also has shown that mothers who are less knowledgeable about contraceptive methods were nearly three times more likely to have unintended pregnancy as compared to their counterparts (AOR=2.92, 95% CI: 1.87, 4.56). Other several studies in Ethiopia shows similar association of contraceptive knowledge and unintended pregnancy (Abayu et al., 2015; Teshome et al., 2014; Mohammed et al., 2016).

A community-based cross-sectional study conducted in west Belessa Woreda, have shown that decision making on family planning and discussing pregnancy related issues with husbands had statistically association with unintended pregnancy. For instance, odds of unintended pregnancy among women who decided to use a family planning method in conjunction with their husbands was 80% (AOR=0.2, 95% CI: 0.1-0.4) less than those who followed only their husbands' decision and women who do not discuss their pregnancy with their husbands were 2.3 higher odds of having unintended pregnancy than women who did communicate (Tsegaye et al., 2018).

A Community based cross sectional study design conducted in Gondar have shown that women age at first pregnancy < 18 years were three times more likely to experience unintended pregnancy when compared to the counter parts (AOR=3.025, 95% CI:1.234-6.056) and mothers whose family size ≥ 4 were three times more likely to being the pregnancy unintended than family size < 4 (AOR=2.92, 95% CI:1.605-5.314) (Yenealem and Niberet, 2019). In addition, studies conducted in Ganji woreda and Jimma town have shows that higher odds of unintended pregnancy among women who had high family size (Teshome et al., 2014; Beyene, 2019).

A community based cross sectional study done in Ganji woreda, West Wollega zone have shown that desire to have few children 0-2 were 7.03 times more likely to experiencing unintended pregnancy in relation to those who desire five and above children (AOR= 7.03, 95% CI:3.37-14.66) (Teshome et al., 2014). Similar statistical association of desire to have few children and unintended pregnancy were reported in study conducted in Jimma (Beyene, 2019).

A study done in Arsi Negele Woreda revealed that pregnant women who had no autonomy to use contraceptive method were 3 times more likely to experience unintended pregnancy than pregnant women who had autonomy (AOR=2.925, 95% CI 1.648-5.190) (Fite et al., 2018).

Other reproductive factors, like history of abortion (Beyene, 2019; Fite et al., 2018; Habib et al., 2017) and previous history of unwanted pregnancy (Mohammed et al., 2016) were the remaining associated factors with unintended pregnancy.

2.2.3. Access of Health information and services factors

A study conducted in Debre Birhan have shown that a women who travel >80 minutes to reach nearest health facility were 3.56 times more likely to report their pregnancy as unintended when compared with those women who travel <40 minutes (Getu Melese et al., 2016). Similarly, Study in Kersa, East Hararghe Zone have shown that longer distance for walk to nearest health care facility were the factors significantly associated with unintended pregnancy(AOR=2.245, 95% CI:1.485-3.394) (Kassa et al., 2012).

Different studies in Oromia region shows that significance association between health profession visit and unintended pregnancy (Fite et al., 2018; Teshome et al., 2014).These studies have shown that in multivariate logistic regression being visited by family planning worker before pregnancy were 37% less likely to experience unintended pregnancy as compared to not visited (AOR=0.63, 95% CI: 0.42 - 0.95) (Teshome et al., 2014) and a pregnant women who had no health professional visit were 2 times more likely to experience unintended pregnancy than pregnant women who had health professional visit (AOR=2.004, 95% CI: 1.218-3.298) (Fite et al., 2018). Study conducted in Bahir Dar have shown that a women who have no access/exposure to mass media were higher odds of experienced unwanted pregnancy (AOR=2.81, 95% CI: 1.27-6.23) (Admasu et al., 2018).

2.3. Conceptual frame work

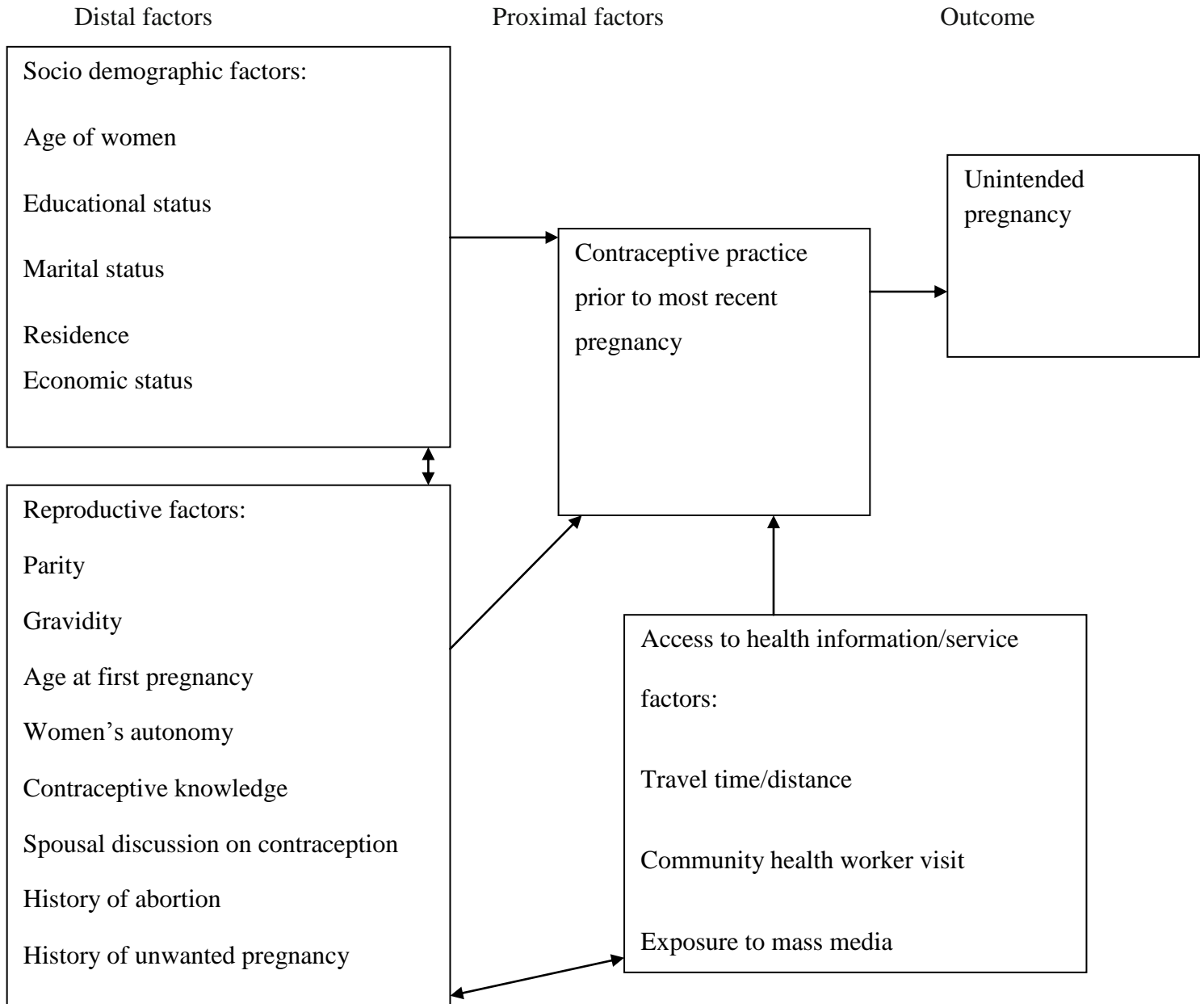


Figure1. Conceptual framework for factors associated with unintended pregnancy (Adapted from Geda et al., 2011)

3. MATERIALS AND METHODS

3.1. Study area and period

The study was conducted in Mi'eso Woreda, which is found in West Hararghe Zone, Oromia Regional State, Eastern Ethiopia. The woreda is located at 300 km from Addis Ababa, the capital city of Ethiopia and 25 KM from Chiro Town, the zonal town. The woreda has one hospital, three health centers, six lower private clinics, and 33 health posts. The total population of the woreda in 2019 is estimated to be 139,186, with estimated 4830 pregnant women and 30802 reproductive age women (15-49 years), respectively. The woreda has 33 kebeles, two urban and the 31 rural (Mi'eso Woreda Health Office, 2019) and the study was conducted in eight randomly selected kebeles from July 1, 2020 to August 31, 2020.

3.2. Study design

Community based cross sectional study was used.

3.3. Population.

3.3.1. Source population

All pregnant women living in Mi'eso Woreda, West Hararghe, Oromia Regional State

3.3.2. Study population

All pregnant women living in the selected kebeles during the study period

3.4. Inclusion and Exclusion criteria

3.4.1. Inclusion criteria

Pregnant women residing for at least 6 months in Mi'eso Woreda

3.4.2. Exclusion criteria

Women who are seriously ill at the time of data collection and were unable to participate

3.5. Sample size determination

1. Sample size determination for the first objective

Sample size was determined by using single population proportion formula based on the assumption of unintended pregnancy (41.5%) (Fite et al., 2018), 95% confidence interval, 5% margin of error and 10% of non-response rate .

$$N = (Z_{\alpha/2})^2 * P (1-P) / D^2$$

n = sample size

P = proportion of unintended pregnancy

d = desired degree of precision (5%)

Z= is the standard normal value at 95% confidence level

$$n = (1.96)^2 * 0.415 * (0.585) / 0.05^2$$

$$= 373$$

10% of non-response rate was assumed

The total sample size was 410

2. Sample determination for second objectives

The sample size for the variables were calculated by considering two-sided confidence level, 95%, margin of error, 5%, ratio of un-exposed: exposed, 1 and power, 80% using Epi info version 7 (Table 1).

Table 1: Sample size determination for factors associated with unintended pregnancy among pregnant women in Mi'eso woreda, West Hararghe zone, 2020

	Unintended pregnancy					
Variable	Non-exposed	Exposed	AOR	Sample size	Final sample size with 10% no-respondent rate	References
Age	17-34 (32.95%)	>=35 (75.8%)	2.343	52	57	(Fite et al., 2018)
Marital status	Married (23.5%)	Single (40.7%)	5.5	252	277	(Mohammed et al., 2016)
Residence	Urban (20.25%)	Rural (34.8%)	2.6	322	354	(Goshu and Yitayew, 2019)
Educational status	College and above (19%)	Primary education (34.2%)	0.3	290	319	(Goshu and Yitayew, 2019)
Parity	4.74% (One parity)	34.17% (three and above)	20.219	68	75	(Fite et al., 2018)
Knowledge of contraceptive	Good (22.8%)	Poor (43%)	1.3	188	207	(Kassahun et al., 2019)
History of unwanted pregnancy	No (25.5%)	Yes (39.6%)	2.73	374	411	(Mohammed et al., 2016)
Autonomy to choose contraceptive	Yes (37.63%)	No (51%)	2.925	462	508	(Fite et al., 2018)

Therefore, the largest sample size from objective 2 was used.

3.6. Sampling procedure

A stratified random sampling technique was used. First, the kebeles were stratified into rural (n=31) and urban (n=2). Then, one kebele from the urban and seven kebeles from the rural were randomly selected. Third, samples were proportionally allocated to each kebele based on the number of pregnant women. Using the Health Extension Worker maternal registration book as a sampling frame, eligible women in each kebele were selected using simple random sampling (figure 2).

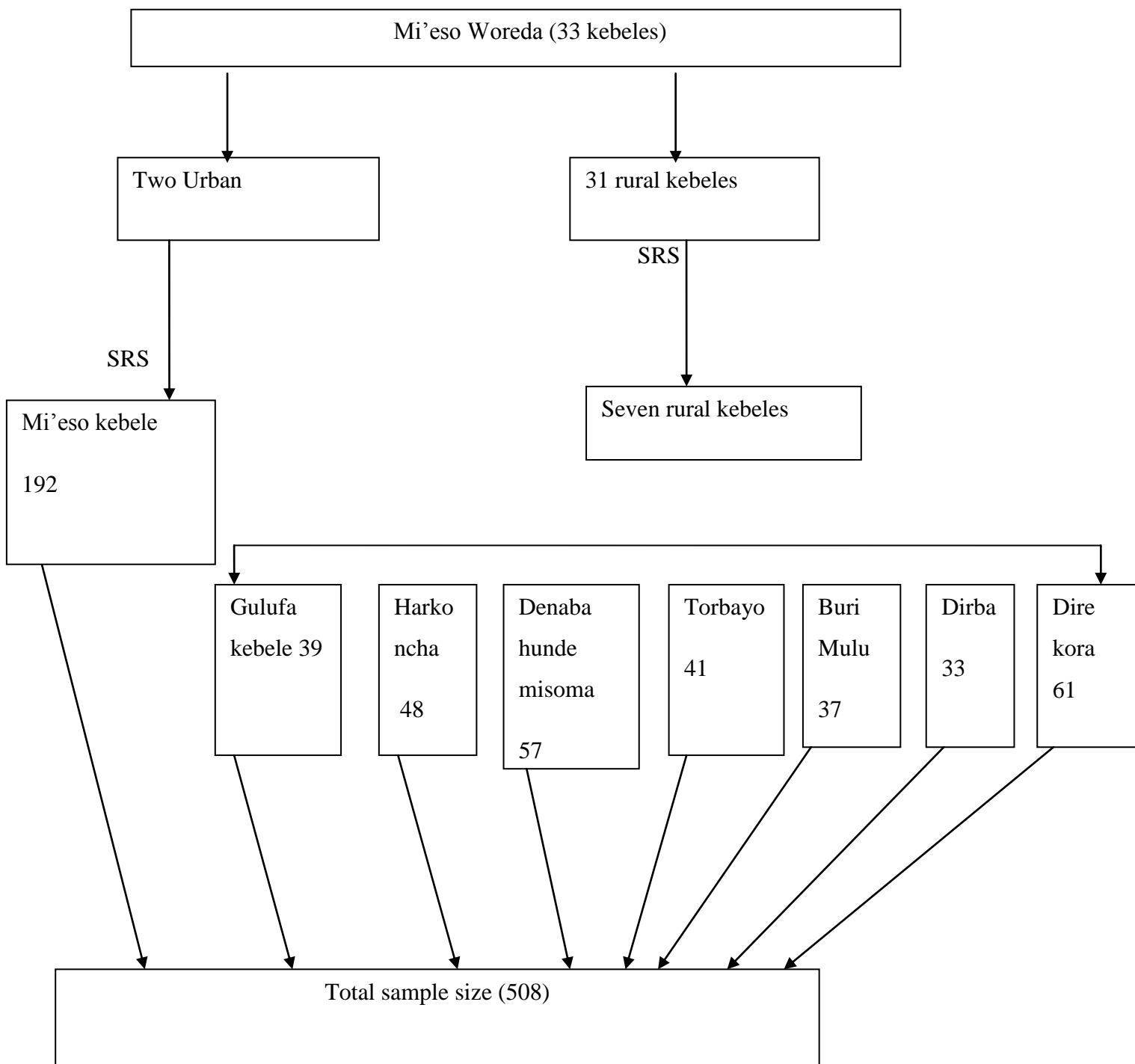


Figure 2: Schematic presentation of sampling procedure for study of unintended pregnancy in Mi'eso Woreda, 2020.

3.7. Data collection methods

A structured questionnaire adapted from previous studies was used to collect data via face to face interview. The questionnaire contains variables on socio demographic conditions, reproductive health characteristics and nature of pregnancy. The questionnaire was prepared in English and translated in to the local language (Afaan Oromo), and translated back to English by different researchers with good command of both languages. Six (nurse) midwives who are fluent in the local language were recruited to collect data under the supervision of three BSC nurses.

A two day training was given for data collectors and supervisors on the data collection process: interview, respecting women's rights, and maintaining of privacy and confidentiality, and the overall study objectives. Each questionnaire was checked for completeness and consistency on a daily basis.

3.8. Variables

3.8.1. Dependent variable

Unintended pregnancy

3.8.2. Independent variables

Socio demographic factors (age, income, occupation, marital status, educational level, religion, and residence).

Reproductive and contraceptive factors: awareness and knowledge about contraceptive, use of contraceptive, type of contraceptive used, autonomy of women to use contraceptive, discussion with husband about contraceptive, age at first pregnancy, desired number of children, gravidity, parity, and history of abortion.

Access to health information/service: Travel time/distance, community health worker visit and exposure to mass media.

3.9. Operational definitions

Unintended pregnancy: is a pregnancy, which is either unwanted or mistimed (Santelli et al., 2003).

Unwanted pregnancy: The pregnancy occurred when no more children in the future or at present were desired (Santelli et al., 2003).

Mistimed pregnancy : The pregnancy occurred earlier than desired (Santelli et al., 2003).

3.10. Data quality control

Initially the questionnaire was prepared in English and translated in to local language, Afaan Oromo and again back to English by another expert to check for its consistency. The questionnaire was pre-tested on 5% of the sample size in Asabot urban kebele.

Two days training was given for data collectors and supervisors regarding the basic principles of data collection procedure and techniques. The principal investigator and supervisors did a day to day supervision during the data collection. At the end of each day, the questionnaire was reviewed and checked for completeness, accuracy and consistency. Every questionnaire was checked before data entry by principal investigator.

3.11. Data processing and analysis

All collected data was checked for completeness, clarity and consistency. The data was coded, entered, using Epi-Data version 3.1 and exported to SPSS 21 for analysis. Descriptive statistics such as frequencies, percentage, measures of central tendency and measures of dispersion were performed for univariate analysis.

Binary logistic regression was used to test the association between independent variables and unintended pregnancy. All variables with p-value ≤ 0.25 were entered into multivariable logistic regression model to control the potential confounders. Association were described using adjusted odds ratio along with 95% confidence interval and p-value < 0.05 in the multiple logistic regression was considered as statistically significant. Model goodness of fit was checked using Hosmer lemeshow test.

3.12. Ethical considerations

Ethical clearance was obtained from the Institutional Health Research Ethics Review Committee (IHRERC) of Haramaya University, College of Health and Medical Sciences. Permission letter was obtained from the Woreda Health Office, and respective kebeles. Informed, voluntary, written and signed consent was obtained from every respondent after explaining the purpose of the study.

The right of respondent to withdraw from the study was respected. Privacy of respondent was maintained by using a neutral place free from any visual and speech disturbance for

interviewing. Confidentiality of respondents was maintained by omitting their names and personal identifiers throughout the study.

3.14. Information dissemination

Findings of the study will be submitted to Haramaya University College of Health and Medical Sciences, for partial fulfillment of the requirements for the degree of Master in General Public Health. The finding of study will be disseminated to Mi'eso Woreda Health Office and to Zonal Health Office. Efforts will be made to publish the findings on different peer reviewed journals.

4. Results

4.1. Socio demographic characteristics.

All the 508 pregnant women approached responded consented for the study and were included. Majority of participants were 18-35 years old, 431 (84.8%) with the mean age of 27.7 (\pm 6.5) years. Majority of respondents were married, 484 (95.3%), rural residents 315 (62%), house wives 340 (66.9%), and Muslim 408 (80.3%) (Table 2).

Table 2: Socio demographic characteristics of pregnant women in Mi'eso Woreda, West Hararghe, 2020 (n=508)

Variables	Frequency	Percent
Age		
<18	15	3
18-35	431	84.8
>35	62	12.2
Marital status		
Single	8	1.6
Married	484	95.3
Divorced	16	3.1
Educational status		
No formal education	161	31.7
Primary education	224	44.1
Secondary education and above	123	24.2
Residence		
Rural	315	62
Urban	193	38
Occupation		
House wife	340	66.9
Student	47	9.3
Self employed	82	16.1
Employee	39	7.7
Religion		
Muslim	408	80.3
Christian	100	19.7
Estimated monthly family income		
\leq 500 birr	30	5.9
501-1000 birr	161	31.7
1001-2000 birr	158	31.1
2001-3000 birr	60	11.8
\geq 3001 birr	99	19.5

4.2. Contraceptive and reproductive characteristics.

Most of the women, 435 (85.6%) had awareness about contraception, and 433 (85.2%) knew pills. More than half, 275 (54.1%) of them had ever used contraceptives. In addition, 159 (57.8%) of ever users were decided by themselves for used contraceptive. More than half, 275 (54.1%) of them, got first pregnant at age of ≤ 20 years (Table 3).

Table 3: Reproductive characteristics and contraceptive history of pregnant women in Mi'eso Woreda, 2020 (n=508)

Variables	Frequency	Percent
Heard about contraceptive methods	Yes	85.6
	No	14.4
Which contraceptive method did you know?	Pills	85.2
	Inject able	83.3
	Implants	57.1
	IUCD	19.7
Ever used contraceptive	Yes	54.1
	No	45.9
Which contraceptive method used (n=275)	Pills	26.9
	Inject able	49.8
	Implant	22.2
	IUCD	1.1
Who decided for using contraceptive	My self	57.8
	My husband	3.3
	Jointly	38.9
Reasons for not using contraceptives (n=233)	Not aware of it	30.5
	Unacceptable in my religion	20.2
	Fear of side effects	12
	Husband disapproval	13.3
	Desire to have children	24
		56

Discussion about family planning with husband		
Yes	174	34.3
No	334	65.7
Gravidity		
1-2	183	36
3-4	129	25.4
≥ 5	196	38.6
Parity		
≤ 1	191	37.6
2-4	173	34.1
≥ 5	144	28.3
Age at first pregnancy		
< 20	275	54.1
≥ 20	233	45.9
No of alive children		
≤ 2	262	51.6
3-4	110	21.7
≥ 5	136	26.8
No of desired children		
< 4	61	12
4-6	288	56.7
> 6	159	31.3
History of abortion		
Yes	111	21.9
No	397	78.1
Previous history of unintended pregnancy		
Yes	100	19.7
No	408	80.3

4.3. Access to health information.

Almost half, 236 (46.5%) of respondents are living at a walking distance of <30 minutes from the nearest health facility, and were visited by health workers at their home 275 (54.1%). Almost two third of the respondents, 322 (63.4%) reported having TV/Radio at home (Table 4)

Table 4. Access to health information/services among pregnant women in Mi'eso Woreda, 2020 (n=508)

Variables	Frequency	Percent
Minutes to reach nearest health facility		
<30 minutes	236	46.5
30-60 minutes	151	29.7
>60 minutes	121	23.8
Visited by health workers at home		
Yes	275	54.1
No	233	45.9
Having TV/Radio at home		
Yes	322	63.4
No	186	36.6

4.4. Unintended pregnancy and its associated factors

One hundred seventy-three (34.1%; 95% CI=29.9-38.4) of the women reported that their index pregnancy is unintended: 136 (78.6%) mistimed and 37 (21.4%) unwanted.

The most common reasons for failure to prevent the unintended pregnancy were not considering oneself as fertile, 51 (29.5%) and lack of knowledge about contraception, 39 (22.5%) (Figure 3)

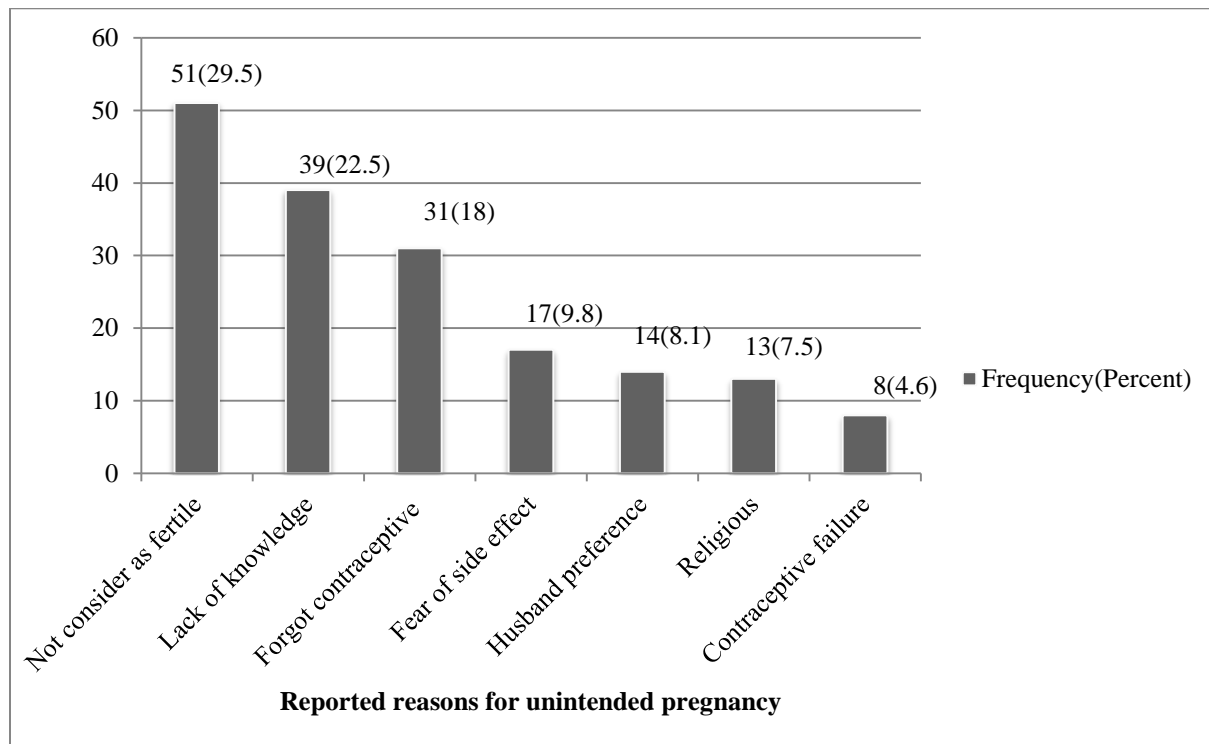


Figure 3. Reported reason for unintended pregnancy in Mi'eso Woreda, West Hararghe, 2020.

Factors associated with unintended pregnancy are summarized in Table 5. In the bivariate analyses, age, educational status, residence, parity, age at the first pregnancy, number of alive children, number of desired children, history of abortion, awareness about contraception, ever use of contraceptive, discussion about family planning with husband, distance to the nearest health facility, being visited by health workers at home and having TV/Radio at home were the factors associated with unintended pregnancy (Table 5).

Table 5: Binary logistic regression analyses of factors associated with unintended pregnancy in Mi'eso woreda, 2020

Variables	Unintended pregnancy		COR (95% CI)	P-value
	Yes (%)	No (%)		
Age			1	
<18	11 (73.3)	4 (26.7)		
18-35	118 (27.4)	313 (72.6)	0.14 (0.04, 0.44)*	0.001
>35	44 (71)	18 (29)	0.89 (0.250, 3.162)	0.86
Educational status				
No formal education	76 (47.2)	85 (52.8)	1	
Primary education	55 (24.6)	169 (75.4)	0.364 (0.236,0.562)**	0.000
Secondary education and above	42 (34.1)	81(65.9)	0.58(.357, 0.941)	0.027
Residence				
Rural	92 (29.2)	223 (70.8)	2.753(1.205, 2.551)*	0.003
Urban	81 (42)	112(58)	1	
Occupation				
House wife	116 (34.1)	224 (65.9)	1.165 (0.569, 2.384)	0.676
Student	19 (40.4)	28 (59.6)	1.527 (0.624, 3.738)	0.35
self employed	26 (31.7)	56 (68.3)	1.05 (0.458, 2.381)	0.92
Employee	12 (30.8)	27 (69.2)	1	
Family monthly income				
≤500birr	9 (30)	21 (70)	1.034 (0.424, 2.526)	0.941
	57 (35.4)	104 (64.6)	1.323 (0.771, 2.270)	0.310

501-1000	57 (36.1)	101 (63.9)	1.362 (0.793, 2.340)	0.263
1001-2000	21 (35)	39 (65)	1.3 (0.655, 2.578)	0.453
2001-3000	29 (29.3)	70 (70.7)	1	
≥3001				
Parity				
1	46 (24.1)	145 (75.9)	1	
2-4	40 (23.1)	133 (76.9)	0.95 (0.584, 1.539)	0.83
≥5	87 (60.4)	57 (39.6)	4.8 (3.01, 7.7)**	0.000
Age at first pregnancy				
<20	131(47.6)	144 (52.4)	4.12 (2.747, 6.23)**	0.000
≥20	42 (18)	191(82)	1	
No of alive children				
≤2	57 (21.8)	205 (78.2)	1	
3-4	32 (29.1)	78 (70.9)	1.475 (0.89, 2.45)	0.131
≥5	84 (61.8)	52 (38.2)	5.810 (3.69, 9.144)**	0.000
No of desired children				
<4	28 (45.9)	33 (54.1)	0.84 (0.464, 1.514)	0.558
4-6	65 (22.6)	223 (77.4)	0.23 (0.19, 0.436)**	0.000
>6	80 (50.3)	79 (49.7)	1	
History of abortion				
Yes	63 (56.8)	48 (43.2)	3.42 (2.22, 5.29)**	0.000
No	110 (27.7)	287 (72.3)	1	
Heard about contraceptive				
Yes	123 (28.3)	312 (71.7)	1	
No	50 (68.5)	23 (31.5)	5.51(3.23, 9.43)**	0.000
Ever user of contraceptive				
Yes	72 (26.2)	203 (73.8)	1	
No	101 (43.3)	132 (56.7)	2.2 (1.53, 3.3)**	0.000

Used contraceptive methods	36 (48.6)	38 (51.4)	8.273 (2.963, 23.102)**	0.000
Pills	28 (20.4)	109 (79.6)	2.5 (0.906, 6.9)	0.077
Inject able	8 (12.5)	56 (87.5)	1	
LAFP				
Discussion about contraceptive with husband				
Yes	32 (18.4)	142 (81.6)	1	
No	141 (42.2)	193 (57.8)	3.24 (2.086, 5.04)**	0.000
Time to walk to the nearest health facility				
<30 minutes	64 (27.1)	172 (72.9)	1	
30-60 minutes	65 (43)	86 (57)	2.03 (1.32, 3.17)*	0.001
>60 minutes	44 (36.4)	77 (63.6)	1.54 (0.96, 2.45)	0.073
Visited by health workers at home				
Yes	45 (16.4)	230 (83.6)	1	
No	128 (54.9)	105 (45.1)	6.23 (4.13, 9.39)**	0.000
Having TV/Radio at home				
Yes	72 (22.4)	250 (77.6)	1	
No	101 (54.3)	85 (45.7)	4.13 (2.79, 6.1)**	0.000

** : significant at p value < 0.00; * p value < 0.05

In the multiple logistic regression, only residence, parity, age at first pregnancy, history of abortion, awareness about contraception and discussion about contraception with husband remained variables associated with unintended pregnancy (Table 6).

Women who reside in rural were nearly 3 times more likely to experience unintended pregnancy than those who reside in urban (AOR=2.95, 95% CI: 1.7-5.12). A woman who had parity ≥ 5 were 3 times more likely reported their pregnancy was unintended than whose parity one (AOR=3.03, 95% CI: 1.53-6.02). In addition, a woman who got first pregnancy at age < 20 were 4.4 times more likely to have unintended pregnancy when compared to the counterpart (AOR=4.4, 95% CI: 2.6-7.4). The odds of unintended pregnancy among women who had history of abortion was 5.4 (AOR=5.4, 95% CI: 3.1-9.5).

The odds of unintended pregnancy among women who had no awareness about contraception was 2.4 (AOR=2.45, 95% CI: 1.2-5.2) and women who had no discussion about family planning with husband were 2.6 times more likely to experience unintended pregnancy than those who had discussion with husband about contraception (AOR=2.63, 95% CI: 1.5-4.5) (Table 6)

Table 6: Multivariate analysis of factors associated with unintended pregnancy among pregnant women in Mi'eso woreda, West Hararghe, 2020.

Variables	Unintended pregnancy		COR (95% CI)	AOR (95% CI)	P-value
	Yes (%)	No (%)			
Age			1		
<18	11(73.3)	4 (26.7)			
18-35	118(27.4)	313(72.6)	0.14 (0.043, 0.44)	2.763 (0.56,13.703)	0.213
>35	44 (71)	18 (29)	0.89 (0.25, 3.162)	0.531 (0.22, 2.26)	0.153
Educational status					
No formal education	76 (47.2)	85 (52.8)	1		
Primary education	55 (24.6)	169 (75.4)	0.364 (0.24, 0.56)	0.477(0.267,1 .853)	0.12
Secondary education and above	42 (34.1)	81(65.9)	0.58(0.357, 0.94)	1.42 (0.676, 2.985)	0.354
Residence					
Rural	92 (29.2)	223 (70.8)	2.75(1.205, 2.55)	2.95(1.7, 5.1)**	0.000
Urban	81 (42.0)	112(58)	1		
Parity					
1	46 (24.1)	145 (75.9)	1		
2-4	40 (23.1)	133 (76.9)	0.95 (0.584,1.539)	0.906(.492, 1.67)	0.75
>=5	87 (60.4)	57 (39.6)	4.8(3.01, 7.7)	3.03(1.5, 6.02)*	0.002
Age at first pregnancy					
<20	131(47.6)	144 (52.4)	4.12 (2.747, 6.23)	4.41(2.6, 7.4)**	0.000
>=20	42 (18)	191(82)	1		
History of abortion					
Yes	63 (56.8)	48 (43.2)	3.42 (2.22, 5.29)	5.4 (3.1, 9.5)**	0.000
No	110(27.7)	287(72.3)	1		
Awareness about contraceptive					
	123 (28.3)	312 (71.7)	1		

Yes No	50 (68.5)	23 (31.5)	5.51(3.23, 9.43)	2.45 (1.2, 5.2)*	0.019
Discussion about contraceptive with husband	32 (18.4)	142 (81.6)	1		
Yes No	141 (42.2)	193 (57.8)	3.24 (2.086, 5.04)	2.63(1.5, 4.5)**	0.000
Time to walk to the nearest health facility	64 (27.1)	172 (72.9)	1		
<30 minutes					
30-60 minutes	65 (43)	86 (57)	2.03 (1.32, 3.17)	1.604(0.87, 2.96)	0.129
>60 minutes	44 (36.4)	77 (63.6)	1.54 (0.96, 2.45)	1.88(0.9, 3.9 5)	0.095
Having TV/Radio at home	72 (22.4)	250 (77.6)	1		
Yes No	101 (54.3)	85 (45.7)	4.13 (2.79, 6.1)	1.55 (0.83, 2.34)	0.092

** : p value < 0.00; * p value < 0.05

5. Discussion

This study was conducted to assess magnitude of unintended pregnancy and its associated factors in Mi'eso Woreda, West Hararghe Zone, Eastern Ethiopia. Almost three in ten pregnancies in the district were reported to be unintended, majority of which were mistimed. Residences, abortion history, parity, age at first pregnancy, awareness about contraception, and discussion with husband about contraception were associated with unintended pregnancy.

The prevalence of unintended pregnancy in this study is comparable with the studies conducted in Hadiya Zone (36.2%), Addis Ababa (36.4%) and Jimma Town (36.5%) (Abame et al., 2019; Kassie et al., 2015; Beyene, 2019). It is however, lower than reports from Brazil (55.4%), Ghana (40%), South Africa (64.3%) and Arsi Negele (41.5%) (Theme-Filha et al., 2016; Nyarko, 2019; Haffejee et al., 2018; Fite et al., 2018). This might be due to the socio-demographic, sampling method, study design and sample size differences between the studies. For instance, studies in Brazil and Ghana were national wide, while convenience sampling method was used in South African study and large sample size was used in Arsi Negele study.

But, compared to other studies in Ethiopia our finding is higher: Welkaite (26.1 %), Debre Birhan (23.5%), and Gelemso (27.1%) (Abayu et al., 2015; Getu Melese et al., 2016; Mohammed et al., 2016). This difference may be due to differences in the availability, accessibility and coverage of maternal health services, socio-cultural difference, demographic differences between the current study and the previous studies. For instance, in this study area most of their life style was livestock and mobile from site to site. This may affect accessibility and coverage of maternal health service in this study area. In addition, the difference may be due to the study design and sampling technique difference between the studies (Abayu et al., 2015; Getu Melese et al., 2016; Mohammed et al., 2016).

The most common reasons for failure to prevent unintended pregnancy was not considering oneself as fertile, a similar finding reported from a study done in Jimma (Beyene, 2019). This shows the existence of persistence gaps in creating awareness among reproductive age women regarding fertility period and appropriate use of contraceptives.

The odd of unintended pregnancy among a woman who reside in rural was 2.9. This finding is supported by a study done in Addis Ababa which shows that women from rural were 2.6 times more likely faced unintended pregnancy (Goshu and Yitayew, 2019). The association of residence may be due to the fact that women who are from rural may not easily access information regarding contraceptive methods.

The odds of unintended pregnancy among multiparous women was 3.03, which is consistent with the studies conducted in Gelemso (AOR=4.76, 95% CI: 2.4-9.65), Addis Ababa (AOR=2.8, 95% CI: 2.6-9.7) and West Wollega (AOR= 3.03, 95% CI: 1.13-8.08) (Mohammed et al., 2016; Goshu and Yitayew, 2019; Teshome et al., 2014). Moreover, this finding is supported by reported association that an increased risk of unintended pregnancy with increased parity (Kassa et al., 2012; Fite et al., 2018). This is due to the fact that high parity woman might already have adequate children and less fertility preference. In addition, it may be because of a woman with high parity may have attained their desirable number of children and regard any additional child as unintended.

Women who got their first pregnancy at < 20 years were 4.4 times more likely to have unintended pregnancy when compared to the counterpart. This might be the fact that awareness and level of decision making increases with age and those got their first pregnancy at teenagers may have low level of reproductive health knowledge and access to family planning services, and shamed to come the health facility to get reproductive health care. In addition, it might be those who got pregnant at early age would less likely to attend and complete formal education which may lead to lower level of knowledge about family planning and reproductive health system contribute to higher rate of unintended pregnancy.

The odds of unintended pregnancy among women who had history of abortion was 5.38, which is comparable with studies conducted in Jimma (AOR=2.6, 95%CI: 1.68-4.15) and Pakistan (AOR=1.8, 95% CI: 1.2-2.1) (Beyene, 2019; Habib et al., 2017). This might be due the fact that a women who had abortion history, might that abortion was the consequence of unintended pregnancy, as the supportive evidence that the frequent consequence of unintended pregnancy was abortion (Bearak et al., 2018) and odd of unintended pregnancy were higher among women who had previous history of unintended pregnancy (Kassie et al., 2015) . However , in contrast

with the study conducted in Arsi Negele, which report odd of unintended pregnancy among women who had no history of abortion were higher than those who had history of abortion (AOR=1.962, 95% CI: 1.025-3.755) (Fite et al., 2018).The contrast may be due to the sampling technique and sample size, as the study done in Arsi Negele used multistage sampling technique and large sample size.

Women who have no awareness about contraception had higher odds of having unintended pregnancy, which is consistent with findings reported in Gelamso and Welkaite (Mohammed et al., 2016; Abayu et al., 2015).This due the fact that those women who had no awareness of contraception may not use contraception, which lead them to have unintended pregnancy. Women who had no discussion about family planning with husband were more likely to have unintended pregnancy. This finding is supported by studies conducted in Addis Ababa and Tigray (Kassie et al., 2015; Abayu et al., 2015). This implies that communication between couples regarding family planning helps women to use contraceptive methods to prevent unintended pregnancy.

6. Strengths and limitations

Since the study is a community based, it may indicate the true rate of unintended pregnancy in the community.

High response rate.

Pre-tested the questionnaire helps to done modifications more understandable.

Since the data was collected by health care providers, there might be social desirability bias.

7. Conclusion

The prevalence of unintended pregnancies in the study area was high. This indicates unintended pregnancy is one of the major reproductive health problems in the study area. Place of residence, parity, age at first pregnancy, history of abortion, awareness about contraception and discussion about family planning with husband were associated with unintended pregnancy. Common reasons given by women for not avoiding unintended pregnancy was not considering oneself as fertile, lack of knowledge about contraceptive, forgot contraceptive at the right time, fear of contraceptive side effects and husband refusal.

8. Recommendations

Mi'eso Woreda Health Office

- To give comprehensive reproductive health education including fertility education for reproductive age women.
- To improve family planning awareness to reduce occurrence of abortion and to limit number of parity.
- To enhance the use of immediate postpartum contraception at post natal care.

Health Workers

- Need to promote family planning services to minimize unintended pregnancy and to decrease parity.
- To give health education on the advantage of spousal communication on family planning, as it minimizes unintended pregnancy.
- To collaborate with Woman Developmental Arm to improve contraception awareness and to reduce early marriage at rural kebeles.
- To strength contraception related side effects instruction and encourage woman to use long term contraception.

9. REFERENCES

- ABAME, D. E., ABERA, M., TESFAY, A., YOHANNES, Y., ERMIAS, D., MARKOS, T., et al. 2019. Relationship Between Unintended Pregnancy and Antenatal Care Use During Pregnancy in Hadiya Zone, Southern Ethiopia. *J Reprod Infertil*, 20, 42-51.
- ABAYU, H., BIRHANU, Z., NEGA, A. & KIDANEMARIAM, A. 2015. Prevalence and associated factors of unintended pregnancy in Welkaite Woreda, Tigray and North Ethiopia cross sectional study by 2012. *J Pregnancy and Child Health* 2: 137.
- ADMASU, E., MEKONNEN, A., SETEGN, T. & ABEJE, G. 2018. Level of unintended pregnancy among reproductive age women in Bahir Dar city administration, Northwest Ethiopia. *BMC Res Notes*, 11, 891.
- AHMAN, E. & SHAH, I. 2011. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008.
- ALKEMA, L., CHOU, D., HOGAN, D., ZHANG, S., MOLLER, A.-B., GEMMILL, A., et al. 2016. Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *Lancet* 30;387, 462-474.
- ALMASI-HASHIANI, A., OMANI-SAMANI, R., SEPIDARKISH, M., KHODAMORADI, F., RANJBARAN, M. 2019. Unintended Pregnancy in Iran: Prevalence and Risk Factors. *international Journal of Women's Health and Reproduction Sciences*, 7, 319-323.
- AMEYAW, E. K., BUDU, E., SAMBAH, F., BAATIEMA, L., APPIAH, F., SEIDU, A.-A., et al. 2019. Prevalence and determinants of unintended pregnancy in sub-Saharan Africa: A multi-country analysis of demographic and health surveys. *PLoS ONE* 14
- Ayele, D.G. 2015. Determinant of fertility in Ethiopia. *African Health Sciences*, 15:2
- BAHK, J., YUN, S.-C., KIM, Y.-M., KHANG, Y.-H. 2015. Impact of unintended pregnancy on maternal mental health: a causal analysis using follow up data of the Panel Study on Korean Children (PSKC). *BMC Pregnancy and Childbirth*, 15:85
- BEARAK, J., POPINCHALK, A., ALKEMA, L. & SEDGH, G. 2018. Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: estimates from a Bayesian hierarchical model. *Lancet Glob Health* ,6: e380–89

- BELLIZZI, S., MANNAVA, P., NAGAI, M. & SOBEL, H. I. 2020. Reasons for discontinuation of contraception among women with a current unintended pregnancy in 36 low and middle-income countries. *Contraception*, 101, 26-33.
- BEYENE, G. A. 2019. Prevalence of unintended pregnancy and associated factors among pregnant mothers in Jimma town, southwest Ethiopia: a cross sectional study. *Contracept Reprod Med*, 4, 8.
- CHODEN, J., PEM, R. & PATHAK, A. 2015. Prevalence, determinants and outcomes of unplanned pregnancy and perspectives on termination of pregnancy among women in Nganglam, Bhutan. *Bhutan Health Journal*, 1, 30-38.
- CSA (Central statistical agency), I. J. A. A., ETHIOPIA, CALVERTON, M., USA: CENTRAL STATISTICAL AGENCY & INTERNATIONAL, I. 2012. Ethiopia demographic and health survey 2011. 430.
- CSA, I. J. E. D., HEALTH SURVEY, A. A., ETHIOPIA & CALVERTON, M., USA 2016. Central statistical agency (CSA)[Ethiopia] and ICF.
- Federal Democratic Republic of Ethiopia Ministry Of Health. 2016. National reproductive health strategy 2016-2020. October 2016 draft.
- Federal Democratic Republic of Ethiopia Ministry Of Health. 2016. Costed implementation plan for family planning in Ethiopia 2015/16-2020
- FITE, R. O., MOHAMMEDAMIN, A. & ABEBE, T. W. 2018. Unintended pregnancy and associated factors among pregnant women in Arsi Negele Woreda, West Arsi Zone, Ethiopia. *BMC Res Notes*, 11:671
- GANATRA, B., GERDTS, C., ROSSIER, C., JOHNSON JR, B. R., TUNÇALP, Ö., ASSIFI, A., et al. 2017. Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. *Lancet*, 390, 2372-2381.
- GEDA, N. R., LAKO, T. K. 2011. A population based study on unintended pregnancy among married women in a district in Southern Ethiopia. *Journal of Geography and Regional Planning* 4, 417-427.
- GETU MELESE, K., GEBRIE, M. H., BERTA BADI, M., FEKADU MERSHA, W. 2016. Unintended pregnancy in Ethiopia: community based cross-sectional study. *Obstetrics and Gynecology International*, 2016.

- GIPSON, J. D., KOENIG, M. A. & HINDIN, M. J. 2008. The effects of unintended pregnancy on infant, child, and parental health: a review of the literature. *Stud Fam plann.* 39, 18-38.
- GOSHU, Y. A. & YITAYEW, A. E. 2019. Prevalence and determinant factors of unintended pregnancy among pregnant women attending antenatal clinics of Addis Zemen hospital. *PLoS ONE* 14, e0210206.
- HABIB, M. A., RAYNES-GREENOW, C., NAUSHEEN, S., SOOFI, S. B., SAJID, M., BHUTTA, Z. A., et al. 2017. Prevalence and determinants of unintended pregnancies amongst women attending antenatal clinics in Pakistan. *BMC Pregnancy and Childbirth* 17:156
- HAFFEJEE, F., O'CONNOR, L., GOVENDER, N., REDDY, P., SIBIYA, M. N., GHUMAN, S., NGXONGO, T. et al. 2018. Factors associated with unintended pregnancy among women attending a public health facility in KwaZulu-Natal, South Africa. *South African Family Practice* 60,1-5
- HALL, J. A., BENTON, L., COPAS, A., STEPHENSON, J. 2017. Pregnancy intention and pregnancy outcome: systematic review and meta-analysis. *Journl of Maternal and Journal of Child Health*, 21, 670-704.
- HERNANDEZ, N. D. 2013. An exploration of the meaning and consequences of unintended pregnancy among Latina cultural subgroups: Social, cultural, structural, historical and political influences.
- IKAMARI, L., IZUGBARA, C., OCHAKO, R. 2013. Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya. *Journal of Pregnancy and Childbirth*, 13:69
- ILBOUDO, P. G., SOMDA, S. M. & SUNDBY, J. 2014. Key determinants of induced abortion in women seeking postabortion care in hospital facilities in Ouagadougou, Burkina Faso. *Internatonal Journal of Women's Health*, 6, 565.
- KASSA, N., BERHANE, Y. & WORKU, A. 2012. Predictors of unintended pregnancy in Kersa, Eastern Ethiopia. *Reprod Health.*;9:1-8.
- KASSAHUN, E. A., ZELEKE, L. B., DESSIE, A. A., GERSA, B. G., OUMER, H. I., DERSEH, H. A., et al. 2019. Factors associated with unintended pregnancy among women attending antenatal care in Maichew Town, Northern Ethiopia, 2017. *BMC Res Notes*, 12, 381.

- KASSIE, T., MOGES, G., ALI, A., TEFERA, W. 2015. Magnitude and factors associated with unintended pregnancy among pregnant women in Addis Ababa, Ethiopia. *Global Journal of Medicine and public Health*,4-6
- KHAJEHPUR, M., SIMBAR, M., JANNESARI, S., RAMEZANI-TEHRANI, F. & MAJD, H. A. 2013. Health status of women with intended and unintended pregnancies. *Public Health*: 127,58– 64
- LE, H. H., CONNOLLY, M. P., YU, J., PINCHEVSKY, Y. & STEYN, P. S. 2015. The public health and economic consequences of unintended pregnancies in South Africa. *Healthcare in Low-resource Settings* 3:52-58.
- MARQUE, M. P. N. 2012. Unintended pregnancies and prenatal, delivery and postnatal outcomes among young women in the Philippines. *Asia-Pacific Population Journal* 30, 71-94.
- Mi'eso woreda Health Office report, 2019
- MOHAMMED, F., MUSA, A. & AMANO, A. 2016. Prevalence and determinants of unintended pregnancy among pregnant woman attending ANC at Gelemso General Hospital, Oromiya Region, East Ethiopia: a facility based cross-sectional study. *BMC Women's Health* 16:56
- MULATU, T. 2014. *Prevalence of Unwanted Pregnancy and Associated Factors among Women in Reproductive Age Groups at Selected Health Facilities in Addis Ababa City, Ethiopia*. Addis Ababa University.
- NYARKO, S. H. 2019. Unintended Pregnancy among Pregnant Women in Ghana: Prevalence and Predictors. *Journal of Pregnancy* ,2019.
- Petruney T, Minichiello SN, Mcdowell M and wilcher R. 2012. Meeting The Contraceptive Needs Of Key Populations Affected By Hiv In Asia: An Unfinished Agenda. *Aids Research And Treatment* 1-6
- PURI, M., SINGH, S., SUNDARAM, A., HUSSAIN, R., TAMANG, A., CROWELL, M. 2016. Abortion incidence and unintended pregnancy in Nepal. *Int Perspect Sex Reprod Health* 42, 197-209.
- SABAHZAIN, M. M., ABDALLA, S. M., MERAJ, S. A., MOHAMED, E., ALMANSOUR, M. A., MEDANI, K. T. et al. 2014. Prevalence and factors associated with unintended

- pregnancy among married women in an urban and rural community, Khartoum state, Sudan. *Global Journal of Medicine and public Health* 3, 1-9.
- SALAZAR, M. & SAN SEBASTIAN, M. J. B. W. S. H. 2014. Violence against women and unintended pregnancies in Nicaragua: a population-based multilevel study. 14, 26.
- SANTELLI, J., ROCHAT, R., HATFIELD-TIMAJCHY, K., GILBERT, B. C., CURTIS, K., CABRAL, R., et al. 2003. The measurement and meaning of unintended pregnancy. *Perspectives on Sexual and Reproductive Health* 35: 1-8.
- SEDGH, G., BEARAK, J., SINGH, S., BANKOLE, A., POPINCHALK, A., GANATRA, B., et al. 2016. Abortion incidence between 1990 and 2014: global, regional, and subregional levels and trends. 388, 258-267.
- SINGH, A., SINGH, A., MAHAPATRA, B. 2013. The consequences of unintended pregnancy for maternal and child health in rural India: evidence from prospective data. *Maternal Child Health Journal*,17, 493-500.
- SINGH, A., SINGH, A. & THAPA, S.. 2015. Adverse consequences of unintended pregnancy for maternal and child health in Nepal. *Asia-Pacific Journal of Public Health* ,27, NP1481-NP1491.
- SINGH, S. & DARROCH, J. E. 2012. Adding it up: Costs and benefits of contraceptive services. Estimates for 2012. *Guttmacher Institute*
- TESHOME, F. T., HAILU, A. G. & TEKLEHAYMANOT, A. N. 2014. Prevalence of unintended pregnancy and associated factors among married pregnant women in Ganji woreda, west Wollega Oromia region, Ethiopia. *Science Journal of Public Health*; 2:92-101
- TESSEMA, G. A., LAURENCE, C. O., MELAKU, Y. A., MISGANAW, A., WOLDIE, S. A., HIRUYE, A., et al. 2017. Trends and causes of maternal mortality in Ethiopia during 1990–2013: findings from the Global Burden of Diseases study 2013. 17, 160.
- THEME-FILHA, M. M., BALDISSEROTTO, M. L., FRAGA, A. C. S. A., AYERS, S., DA GAMA, S. G. N. & DO CARMO LEAL, M. 2016. Factors associated with unintended pregnancy in Brazil: cross-sectional results from the Birth in Brazil National Survey, 2011/2012. *Reproductive Health*,13:118.

- TSEGAYE, A. T., MENGISTU, M. & SHIMEKA, A. 2018. Prevalence of unintended pregnancy and associated factors among married women in west Belessa Woreda, Northwest Ethiopia, 2016. *Reprod Health*, 15, 201.
- UN: Declaration on Preventable Maternal Mortality. Geneva, Switzerland United Nation; 2009, [cited 2011 April 22]; Available from: <http://www.who.int/pmnch/topics/maternal/20090617_hrcresolution.pdf.
- World Health Organization (WHO).2019.Trend in maternal mortality 2000 to 2017 estimated by: UNICEF, UNFPA, World Bank group and United Nations Population Division, 2017. Geneva, Switzerland. ISBN978-92-4
- YAYA, S., AMOUZOU, A., UTHMAN, O. A., EKHOLUENETALE, M., BISHWAJIT, G., UDENIGWE, O., et al. 2018. Prevalence and determinants of terminated and unintended pregnancies among married women: analysis of pooled cross-sectional surveys in Nigeria. *BMJ Glob Health*,3, e000707.
- YENEALEM, F. & NIBERET, G. 2019. Prevalence and associated factors of unintended pregnancy among pregnant woman in Gondar town, North west Ethiopia, 2014. *BMC Res Notes*, 12, 161.
- ZOLNA, M. & LINDBERG, L. D. 2012. *Unintended pregnancy: Incidence and outcomes among young adult unmarried women in the United States, 2001 and 2008*, Alan Guttmacher Institute New York.

10. ANNEXES

10.1. Annexes A: Participant information sheet and informed voluntary consent form.

My name is----- I am working as a data collector for the study being conducted in this community by Kedir Hassen who is studying his Master's degree at Haramaya University College of Health and Medical Sciences school of Graduate studies. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

The study title:

Prevalence of Unintended pregnancy and Associated Factors among Pregnant Women in Mi'eso Woreda, West Harergha Zone, Oromia Region, Eastern Ethiopia

The purpose of the study:

The finding of this study can be of paramount importance for Mi'eso woreda health office to plan on intervention that can address prevention of unintended pregnancy, by targeting possible factors will be found in this study. Moreover, the aim of this study was to write a thesis as a partial requirement for the fulfillment of a Master's Program in General public health for the principal investigator.

Procedure and duration:

I will be interviewing you using a questionnaire to provide me with pertinent data that was helpful for the study. There are 32 questions to answer where I will fill the questionnaire by interviewing you. The interview will take 40 minutes, so I kindly request you to spare me this time for the interview

Risks and benefits:

The risk of being participating in this study is very minimal, but only taking few minute from your time. There would not be any direct payment for participating in this study. But the findings from this research may reveal important information for the local health planners.

Confidentiality:

The information you will provide us will be confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study community and will not reflect anything particular of individual persons or housing. The questionnaire will be

coded to exclude showing names. No reference will be made in oral or written reports that could link participants to the research directly.

Rights:

Participation for this study is fully voluntary. You have the right to declare to participate or not in this study. If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

Contact address:

If there are any questions or enquires any time about the study or the procedures, you can contact by using the following addresses. Kedir Hassen: Mobile phone: 0915427776, E-mail: kedirhasen927@yahoo.com. Haramaya University College of Health and Medical Sciences school of graduate studies Institutional Research Ethical Review Committee: Office phone: 0254662011 P.O. Box: 235, Harar

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

Name and Signature of participant: ----- Date-----

Signature of data collector: -----Date-----

10.2. Annexes B: English version questionnaires

Questionnaire identification number _____ Date of interview -----in (DD/MM/Year)

Result coded (1= Complete 2= partially complete 3 = Refused 4 = other)

Name of interviewer-----

Name of kebele-----

Part I: Socio demographics characteristics of pregnant women in Mi’eso Woreda.


Code	Question	Response
101	How old are you? (enter age in years)	-----Years
102	Marital status?	<ol style="list-style-type: none"> 1. Single 2. Married 3. Divorced 4. Other (specify----)
103	Educational status?	<ol style="list-style-type: none"> 1. No formal education 2. Primary education 3. Secondary education 4. College and above
104	Residence	----- Kebele
105	Occupation?	<ol style="list-style-type: none"> 1. House wife 2. Student 3. Self-employed 4. Employee 5. Other (specify)
106	Religion?	<ol style="list-style-type: none"> 1. Muslim 2. Orthodox 3. Protestant 4. Catholic 5. Others(Specify-----)
107	Estimated monthly family income	-----ET birr

Part II: Reproductive characteristics of pregnant women in Mi'eso Woreda.

Code	Questions	Responses	Skip
201	Gravidity	------(in numbers)	
202	Parity	------(in numbers)	
203	How old are you at your first pregnancy?	------(in years)	
204	How many children do you have now?	------(in number)	
205	How many children do you want to have?	-----in numbers	
206	Have you history of had abortion?	1. Yes 2. No →	208
207	If yes to question 206 how many times?	1. One 2. Two 3. Three and above	
208	Have you had previously unintended pregnancy?	1. Yes 2. No →	210
209	If yes, how many pregnancies were unintended?	1. One 2. Two 3. Three and above	
210	Is the current pregnancy intended?	1. yes → 2. No	301
211	If No for question 210, is pregnancy mistimed or unwanted?	1. Miss-timed 2. Unwanted	
212	If your current pregnancy is unwanted or mistimed, what was the reason you could not avoid becoming pregnant?	1. Lack of knowledge about contraceptive 2. Not considered fertile at a time	

		3. Unacceptable in my religion 4. Fear of contraceptive side effects 5. Contraceptives failure 6. Forget contraceptive at right time 7. Husband preference Other specify-----	
--	--	--	--

Part III: Contraceptive characteristics of pregnant women in Mi’eso worda.

Code	Questions	Response	Skip
301	Have you ever heard about contraceptive methods?	1. Yes 2. No	
302	Which of the following contraceptive methods do you know about?(Circle all that mentioned)	1. Pills 2. Inject able 3. Implant 4. IUCD 5. Condom 6. Calendar /Rhythm period 7. Emergency contraceptive 8. Others (Specify-----)	
303	Have you ever used any type of contraceptive to delay or avoid pregnancy?	1. Yes 2. No 	306
304	If yes which method have you used?	1. Pills 2. Inject able 3. Implant 4. IUCD 5. Condom	

		6. Calendar /Rhythm period 7. Emergency contraceptive 8. Others (Specify-----)	
305	Who decides the contraception method you used? before current pregnancy	1. Only you 2. your husband/partner 3. you and Your husband/partner jointly 4. Health profession 5. other	
306	If NO to Q 303 why are you not using contraceptives?	1. Not aware of contraceptive methods 2. Use traditional methods 3. Unacceptable in my religion 4. Fear of side effects 5. Contraceptives not available 6. Husband disapproval 7. Desire to have child 8. Other specify-----	
307	Do you discuss about family planning with your husband ?	1. Yes 2. No	
308	Do you heard about emergency contraceptive ?	1. Yes 2. No	
309	If yes to Q 309 which methods do you know?	1. Emergency contraceptive pills 2. IUCD 3. Other specify-----	

Part IV. Access to health information/services characteristics

Code	Questions	Response	Skip
401	Minutes to reach to the nearest health facility	------(in minutes)	
402	Were you visited by community health workers prior to current pregnancy?	1. Yes 2. No →	404
403	Did the health worker talk to you about family planning?	1. Yes 2. No	
404	Do you have radio or Television?	1. Yes 2. No	

Thank you a lot for your attention.

10.3 Annexes C: Participant information sheet and informed voluntary consent form in Afan Oromo Version

Maqaan koo-----jadhama. Obbo Kadiir Hassan kan jadhaman Yuunivarsitii Haaramayaattii Gosa barnoota Fayyaa haawaasaa waligalaan qo'annoo sadarkaa baruumsaa Digrii lamafaadhaaf raawwatuuf gaafannoo akkan guchisuuf kaniin filamee dha. Aniis kabajaan kaniin isiin gaafadhuu maaluummaa waa'ee qo'onichaa fii isiinis maaliif qo'onichaaf akka filatamtan ibsa waaniin isiini godhuuf akka na dhageefatanifii.

Mata-duree Qo'onnichaa : Naannoo Oromiyaa, Haararghee lixaa, Aanaa Mi'essoorratti Baballina Ulfa hin barbaachifnee fii Wantoota dhimma kana wajjiin hidhata qaban ilaalata.

Kaayyoo Qo'annoo: Bu'aan qo'annoo kanaa Waajiira Eeguumsa Fayyaa Aanaa Mi'essottif faayidaa guddaa argamsiisa. Kunis waajjirii wantoota akka sababaatti qo'annoo kana keessatti adda bahan fayyadamuun ittisa ulfa hin barbaachinerratti akka karoofachuu danda'uu isa dandeesisa. Inni kan biraatiis kaayyoon qo'annoo kanaa dhaleessaan qo'annoo kanaa Fayyaa Haawaasaa Waligalaatiin sadarkaa Baruumsaa lamafaatii bareefama ebbaa qopheessuuf fayyada.

Adeemsa Qo'onichaa: Anii gaafilee duubisuudhaan isiin imoo gaafileedhaaf deebisaa keenuun Daqiiqaa 40'f waliin turra. Baayyinni gaafiileetiis 32. Kanaafuu ani gaafilee isiinif duubiseetiin deebilee naa keenitaniif idoo isaaniiti niin guuta. Gaafannoon kun daqiiqaa 30 fudhachu danda'a, kanaaf yeroo keessan akka naaf laatan kabajaaniin isin gaafadha.

Faayidaa fi Midhaa: Qo'annoo kana irratti hirmaachuu keessaniin sa'aa keessan muraasa fuudhachuun ala rakkoon ini fiduu hin jiruu. Qo'annoo kanarattii hirmaachuu keessaniniis faayidaan haarkarattii argatan hin jiruu. Haa ta'uu malee bu'aan qo'annoo kanaa naannawa kanattii fayyaa irrattii dhaabilee hoojataniiif ragaalee fayyadan ni keena.

Icituumaa isaa: Ragaaleen keenaman iciitin isaanii agamaadha. Gaafannoo keessatiis haala dhiimma keessan biifa adda ta'een kan gaafatuu hin jiruu. Bu'aan qo'anichaas iddoo qo'annoon ittii gaggeefameef ragaa cuunfamee kan kennamuu yommuu ta'uu, maaluumaa nama tokko ykn Maaluumaa mana sanaa kan muul'isuu mitii. Gaafiileedhaaf maqaa irraa hambisuun koodiin ni

kennamaaf. Qo’anichiis haala kaminuu jechaanis ta’ee barreefamaan maalummaa hirmaataa qo’annichaa haala ibsuun fakeenya godhee hin dhaleessuu.

Mirga Hirmaataa: Qo’annicha irrattii hirmaachuun guutumattii feedhinnaa irrattii kan hundaa’ee dha. Mirga hirmaachuus hirmaachuu dhabuus qabduu. Hirmaachuuf fedhinnaa kan hin qabnee yoo ta’ee yeroo kamitiyuu dhaabuu ykn gaafiilee deebisaa kennuu hin barbaanne deebisaa kennuu dhabuu mirga qabduu. Sa’aa kamittuu qo’anichaa yoo adda dhaabdan haallii biifa addattii ittii ilaalmatan hin jiruu.

Teessoon keenya: Odeeffannoo dabalataa argachuu yoo isiin barbaachisee qo’onicha kan ilaalatuu gaafiilee kamiyyuu ykn yaada yoo qabaatan teessoolee ittii aanan kanaan fayyadamuun odeeffannoo argachuu dandeessuu.

Ogeessa Qo’annoo kanaa: Kadiir Hassan Mumme, Lakk. Bilbilaa:+251-915427776, Email:kedirhasen927@yahoo.com.

Yuunivarsitii Haaramaayaattii mana baruumsa fayyaattii kooree Qo’annoo fi qorannoo hoordofii naamuusaa.Lakk. Bilbilaa: 025-466-20-11, Lakk. Postaa 235 Harar

Feedhinaa irrattii kan hundaa’ee qo’annoo kana irrattii hirmaachuu murteessuu bareefama ibsuu . Ibsii walii-galtee kuunii bifa gaariin naaf duubifameera.Aniis kaayyoo qo’onnichaa haala gaariin huubadheera. Faayidaa fi midhaa isaa, icituummaa isaa, mirga kiyya akkasuumattis gaafiilee qo’annoo ilaalatan fi yaada yooniin qabaadhee gaafachuu kan danda’uu ta’uu huubadheetiin jiira. Wantoota ifa naaf hin taanee akkan gaafadhuu carraan naaf keennamee jiira.Aniis miirga deebisuu dhabuu akkan qabuu naaf himameera. Kanaafiis feedhinnaa irrattii kan hundaa’ee qo’annoo irrattii hirmaachuuf murteesse mallattoo koo armaan gadittii kaa’eera. Maqaa fii mallattoo hirmaataa-----Mallattoo -----Guyyaa----- Maqaa fii mallattoo raga sassaabaa-----Mallattoo-----Guyyaa-----

10.4 Annexes D: Afan Oromo Version Questionnaires

Kakkoofssa Eenyummaa gaafannoo-----guyaa-----

Koodii Bu'aa(1=Guutuu, 2=Hamma tokko guutuu,3=Kan dide 4=Kan biraa)

Maqaa gaafataa-----

Maqaa Araddaa-----

Kutaa I. Seenaa ragaa bu'ura hawaasaa.

Koodi	Gaaffii	Deebi'ii	Tarkanfii
101	Umriin kee meeqa?	-----waggaa	
102	Haala fuudhaa fii heeruma.	<ol style="list-style-type: none"> 1. Kophaa 2. Heerume 3. Kan adda bahan/Hiikkaa tte 4. Kan biraa(Adda baasi-----) 	
103	Sadarkaa barumsaa	<ol style="list-style-type: none"> 1. Barumsa idilee hin baranne 2. Barumsa sadarkkaa jalqabaa 3. Barumsa sadarkaa lammaffaa 4. Koolleejjii fii isaa ol 	
104	Idoo jireenyaa	Araddaa-----	
105	Gosa Hojjaa	<ol style="list-style-type: none"> 1. Haadha manaa 	

		2. Barattuu 3. Hojii dhunfaa 4. Hojjattuu mootummaa 5. Kan biraa(adda baasi-----)	
106	Amantaa	1. Musliima 2. Ortodoksii 3. Protistantii 4. Kaatolikii 5. Kan biraa(Adda baasi-----)	
107	Tilmaama galii maatii kan ji'aa	-----ET birr	

Kutaa II: Seenaa Haala wal-hormaata haawwan ulfaa Aanaa mi'eso

Koodii	Gaaffii	Deebi'ii	Tarkanfii
201	Yeroo meeqaaf ulfoofte?	-----Lakkofsaan)	
202	Yeroo meeqaaf Deesse?	-----Lakkofsaan)	
203	Yeroo jalqaba ulfooftu umriin kee meeqa?	-----waggaa	
204	Yeroo ammati ijoollee meeqa qabda?	-----lakkofsaan	
205	Ijoollee meeqa argachuu feeta?	-----lakkofsaan	
206	Ulfa baastee beektaa?	1. Eeyyeen 2. Miti →	208
207	Gaaffii 206 Eeyyeen yoo tahe,yeroo meeqa?	1. Tokko 2. Lama 3. Sadiihii fii isaa ol	

208	Ulfa hin barbaachine ulfooftee beektaa?	1. Eeyyeen 2. Miti →	210
209	Gaaffii 208 Eeyyeen yoo tahe, ulfi hin barbaachifne yeroo meeqaafi?	-----lakkoofsaan	
210	Ulfi ammaa kun kan barbaadamuu?	1. Eeyyeen → 2. Miti	301
211	Gaaffii 210 miti yoo tahe, Ulfi kan yeroo hin egatinii, moo kan gonkumaahuu hin barbaanne?	1. Kan yeroo isaa hin egatini 2. Gonkumaahuu kan hin barbaachifne	
212	Yoo ulfii kee kan ammaa kun kan hin barbaachifne ykn, kan yeroo hin Eeggatin tahe, sababa maaliif ulfa hin ittisini?	1. Waa'ee qusannaa maatii beekuu dhabuu 2. Yeroo sanitti nin ulfaha ja'e hin yaanne ture 3. Amanttiin koo hin hayyamu 4. Sodaa miidhaa qusannaa maatii 5. Qusannaan maatii hoj-malee tahuun 6. Dagachuu qusannaa maatii 7. Filannoo abbaa manaattiin 8. Kan biraa(addaan baasi-----)	

Kutaa III: Haala qusannaa maatii kan haawwan ulfaa Aanaa Mi'eso.

Koodi	Gaafiilee	Deebi'ii	Tarkanfii
301	Waa'ee tajaajila qusannaa maatii dhageessee beektaa?	<ol style="list-style-type: none"> 1. Eeyyeen 2. Miti → 	303
302	Qusannaa maatii kanneen keessaa isa kam beekta? (Kan himan hundarratti marsi)	<ol style="list-style-type: none"> 1. Kiniina afaaniin liqimfamu 2. Kan ji'a sadihiif waraanamu 3. Kan waggaa sadihiif/shaniifgogaa harkkaa keessa ka'amu 4. Isa gadaameessa keessa ka'amu 5. Kondom 6. Mala uumamaa 7. Qusanna hatatamaa 8. Kan biraa (addaan baasi----- ---) 	
303	Ulfa ittisuuf qusannaa maatii gosa kamuu fayyadamtee beektaa?	<ol style="list-style-type: none"> 1. Eeyyeen 2. Miti → 	306
304	Gaaffii 303 Eeyyen yoo tahe, Gosa kam fayyadamtee beekta?	<ol style="list-style-type: none"> 1. Kiniina afaaniin liqimfamu 2. Kan ji'a sadihiif waraanamu 3. Kan waggaa sadihiif/shaniifgogaa harkkaa keessa ka'amu 4. Isa gadaameessa keessa ka'amu 5. Kondom 6. Mala uumamaa 7. Qusanna hatatamaa <p>Kan biraa (addaan baasi-----)</p>	
305	Qusannaa maatii fayyadamteef Eenyuutu murteesse?	<ol style="list-style-type: none"> 1. Si qofa 2. Abba mana keetii 3. Sii fii Abbaa mana keetii waliin 	

		<p>taatanii</p> <p>4. Ogeessa fayyaa</p> <p>5. Kan biraa(-----)</p>	
306	Gaaffii 303 miti yoo tahe, maaliif qusannaa maatii hin fayyadamne?	<p>1. Hubannoo dhaba</p> <p>2. Mala Aadaa fayyadamuu</p> <p>3. Amanttiin koo hin hayyamu</p> <p>4. Sodaa miidhaa qusannaa maatii</p> <p>5. Qusannaa maatii jiraachuu dhabuu</p> <p>6. Abbaan manaa diduu</p> <p>7. Daa'ima argachuu waaniin barbaadeef</p> <p>8. Kan biraa(adda baasii-----)</p>	
307	Waa'ee qusannaa maatii abbaa mana keetii waliin mari'attee beektaa?	<p>1. Eeyyeen</p> <p>2. Miti</p> <p>3. Abbaa manaa hin qabu</p>	
308	Waa'ee qusannaa maatiiyeroo hatatammaa dhageessee beektaa?	<p>1. Eeyyeen</p> <p>2. Miti →</p>	401
309	Gaaffii 308 eeyyeen yoo tahe mala kam beekta	<p>1. Kininii qusannaa kan yeroo hatatamaa</p> <p>2. Isa gadaameessa keessa ka'amu</p> <p>3. Kan biraa(adda baasii-----)</p>	

Kutaa IV: Gahiinssa odeeffannoo /tajaajila fayyaa

koodii	Gaafiilee	Deebi'ii	Tarkanfii
401	Dhaabbata fayyaa isinitti dhihoo gahuuf daqiiqaa fudhata?	<p>1. Daqiiqaa 30 gad</p> <p>2. Daqiiqaa 30 hanga 60</p> <p>3. Daqiiqaa 60 fii isaa ol</p>	

402	Ulfa ammaa kana dura ogeessi fayyaa hawaasaa daawwiif isin bira dhufeeraa?	1. Eeyyeen 2. Miti →	404
403	Ogeessii Fayyaa waa'ee qusannaa maatii isinii odeesseeraa?	1. Eeyyeen 2. Miti	
404	Radio ykn Televijiina ni qabduu?	1. Eeyyeen 2. Miti	

Baayyee Galatoomaa.

10.5 Annexes E: Curriculum Vitae

1. Personal identification

Full name : Kedir Hassen Mume

Date of birth 5/15/1992 G.C

Sex: Male

Place of birth: Goro Gutu woreda, East Harerghe Zone, Oromia Region, Ethiopia

Marital Status: Married

Nationality: Ethiopian

Address Phone no. +251-915427776, E-mail= kedirhasen927@yahoo.com

2. Educational Background

University: Mada Walabu University, November 3, 2015 G.C graduate in BSc Public Health Officer

Preparatory School: Karamile Secondary and Preparatory School

High School: Hades secondary school.

Elementary school: Hades Primary School

3. Language skill

Language Listening Speaking Reading Writing Remark

Language	Listening	Speaking	Reading	Writing	Remark
Afaan Oromo	✓	✓	✓	✓	Mother tongue
English	✓	✓	✓	✓	Excellent
Amharic	✓	✓	✓	✓	Good

3. Work Experience.....Four years

Three years at Boke tiko Health center, Boke woreda

One year at Mi'eso woreda health office

4. Computer skill.....Excellent in basic computer skills.