DETERMINATS AND TRENDS OF UNMET NEED FOR FAMILY PLANNING AMONG MARRIED WOMEN AGED 15-49 IN ETHIOPIA: A STUDY INOROMIY REGION

(THESIS)

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Declaration

I, declare that the thesis has been composed by my own and that the work has not been submitted for any other degree or professional qualification. All sources of material used for the study have been duly acknowledged.

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ACRONYMS

CSA	Central Statistics Agency
CPR	Contraceptive Prevalence Rate
EDHS	Ethiopian Demographic Health Survey
FGAE	Family Guidance Association of Ethiopia
FP	Family Planning
HEP	Health Extension Packages
HIV/AIDS	Human Immunodeficiency Virus /Acquired Immunity Deficiency Syndrome
ICF	Inner City Fund
KAP	Knowledge, Attitude and Practice
MDG	Millennium Development Goal
STD	Sexually Transmitted Disease
SSA	Sub-Saharan Africa
TFR	Total Fertility Rate
UNFPA	United Nations Family Planning Association
WFS	World Fertility Survey
EAs	Enumeration Areas
PMA	Performance Monitoring and Accountability

ABSTRACT

Background: Out of ten married women or in-union women one in most regions of the world has an unmet need for family planning; that is to say, they are required to give up or late childbearing but to prevent pregnancy they do not use a modern contraceptive method. Despite increases in contraceptive use in developing countries, the total number of women with unmet need remains high and has even increased slightly, from 210 million in 2003 to 225 million in 2014. In Ethiopia unmet need for family planning for currently married women, age 15-49 is 22%. That is more than 1 in 5 married women in Ethiopia who have an unmet need for family planning. The objective of this study was to assess the changes in family planning practice, explain the changes in the level of unmet need for FP to analyze demographic, socioeconomic, and institutional determinants of unmet need for FP among married women between EDHS 2000 - 2016 surveys in Oromia region.

Method: Data was obtained from the Ethiopian Demographic and Health Surveys (EDHS)performed in 2000, 2005, 2011, and 2016. Data concerning a total of 5,830 currently married women, aged 15-49, was considered in the analysis. The data from all EDHS was collated so as to follow the trends throughout the period considered for the survey. Descriptive analysis was used to examine the trends and multivariable logistic regression was used to identify factors associated with unmet need for both spacing and limiting and binary logistic analysis was used to identify factors associated with total unmet need.

Results: Results show that the total unmet need for contraceptives in the Oromia region was generally declining overtime except for 2005 when it tended to rise. That is it was 38.7% for 2000, 41.3% for 2005, 30.7% for 2011, and 28.3% for 2016. Unmet need for family planning shows a declining trend with women who had no media exposure (radio and TV) across the four EDHS. The major reasons for not using contraception were the women wanting more children, religious prohibition, and fear of side effects, respondent and husband opposition to using, and woman sub-fecundity or infecundity. The multivariable analysis identifies higher odds of unmet needs among women at younger age, primary education, living in rural area, no media exposure about family planning and for currently working women. Also the analysis shows lower odds of unmet need for women with small number of children, older age at first intercourse and large number of ideal children.

Conclusion and recommendation: There was a higher level of unmet need in the Oromia region in all four surveys. The level of unmet need in rural residents was higher than that of urban residents. The finding shows family planning messages had a positive effect on unmet needs. Therefore, the government is recommended to increase family planning messages delivered through radio, TV, and health facility workers during ANC, PNC, delivery, and immunization.

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Firstly unmet need for family planning was defined as a whole woman who is married, not amenorrheic and not pregnant and who would like to limit their reproduction but not using any contraception (Westoff.F.Charles, 1978). Latter it was redefined to include all fecund women who are married or living in union, who are not using contraception and who either do not want to have any more children or want to postpone their next birth for at least two more years and pregnant and amenorrheic women are included to the unmet need group unless their pregnancy or last birth was intended(Westoff, 1988).According to (Bradley.S.E.K, et al., 2012)Unmet need for family planning was defined as currently married women who are pregnant or postpartum amenorroehic (menstruation period not returned since last live birth in the last 2 years but did not want current pregnancy/last birth at all, hence these are unmet need for limiting. Women wanted who current pregnancy/ last birth to be later these are unmet need for spacing. Women wanted who current pregnancy/ last birth at that time in this case had no unmet need even with wontedness of current pregnancy/last birth missing not using contraception. Women who are classified as infecund have no unmet need because they are not at risk of becoming pregnant.

The gradual change of the definition of unmet need for family planning was important to identifying and detail understanding of the various socioeconomic, demographic, and institutional determinants for those women not to use a modern contraceptive. The increment of unmet need for family planning among married women aged 15-49 years has a greater risk of unintended/unwanted pregnancy. Its consequences exposed the women to pregnancy complication, induced abortion, also consideredas one of contributors to high maternal and infant mortalities, leading,to high fertility rates and for rapid population growth. Hence it becomes a country's main objectives to address unmet need for family planning by setting structured policies and planning programs to meet these and prepare a valuable blueprint program and plan, and decision-makers require considering the reasons why women with unmet need are not using contraceptives. Out of ten married women or in-union women, one in most regions of the world have an unmet need for family planning; that is to say, they want to stop or delay childbearing

but are not using any method of contraception to prevent pregnancy(UN, 2017). Worldwide in 2017, 12 % of married or in-union women are estimated to have an unmet need for family planning. The level was higher in Africa (22 %) (UN, 2017). Another study estimates, despite increases in contraceptive use in developing countries, the total number of women with unmet need remains high and has even increased slightly, from 210 million in 2003 to 225 million in 2014(Singh, et al., 2014).According to the Ethiopiandemographic and health survey (EDHS), although interventions made by Ethiopian Federal Ministry of Health (EFMOH) and Health Extension Program, have significantly improved access to family planning services (Eshetu, 2013), still 22% of currently married women have an unmet need for family planning (CSA & ORS Macro, 2016).There were differences among different regions of Ethiopia in unmet need for family planning, for instance, 31.4% in Amhara region, 31% in Oromia region, and 24% in SNNP among reproductive age married women, (Afework, et al., 2019).

Understanding the progress of unmet need for FP, in the study region isimportant to get supplementary information and determine whom to specifically target to lower unmet need for FP by adopting utilization of modern contraceptive through FP programs in Oromia National Regional State. Such information is significant to Ethiopian policy decision-makers, planners, and the Ministry of Health package implementation specifically FP strategies to addressing and minimize unwanted pregnancy and induced abortion. Accordingly, this current study aimed to examine the changes of FP practice and level of unmet need along with the socioeconomics, demographic and institutional determinants of unmet need for FP in Oromia National Regional State between 2000 and 2016.

1.2. Statement of the Problem

In Ethiopia unmet need for family planning for currently married women, age 15-49 is 22%. That is more than 1 in 5 married women in Ethiopia have an unmet need for family planning: 13% want to delay childbearing, while 9% want to stop childbearing. Unmet need for family planning varies regionally. For Example, it is 29% for Oromia, 21% for SNNPR, 18% for Tigrai and 17% for Amhara (CSA, 2016). From this, it can be seen that the highest unmet need for family planning occurs in Oromia and the lowest one in Amhara. The population groups of currently known to be at high risk of unmet need for FP are in Oromia National Regional States.

Contraceptives are used by the majority of married or in-union women in almost all regions of the world. Worldwide in 2017, 63% of in-union or currently married women of reproductive age group were using some form of contraception, including any modern or traditional methods of contraception. However, contraceptive use was much lower in Africa (36 %) compared to the other major regions in the world (UN, 2017).

Ethiopia is making a noteworthy improvement in modern family planning use, but still, availability and accessibility of family planning services vary between urban and rural areas (CSA, 2016). One of the targets of the Ministry of Health of Ethiopia for improving maternal and child health is to increase the contraceptive prevalence rate (CPR) from 42% to 55% by 2020 (FMoH, 2015).The percent distribution of currently married women age 15-49, by the contraceptive method they currently use, according to background characteristics. Overall, 41% of currently married women are using modern methods of family planning, and 1% is using traditional methods. The use of any modern contraceptive method varies notably by region also. For instance, it is 39% for Oromia, 45% for SNNPR, 36.3% for Tigrai, and 50% for Amhara (EPHI and ICF, 2019). From this, it can be seen that the highest CPR occurs in Amhara and the lowest one relatively in Tigrai and Oromia. This suggests that in Ethiopia the current use of modern family planning methods utilization remains low (Bekele, et al., 2016).

The CPR among married women increases from 37% among women age 15-19to 52% among women age 20-24 and then declines steadily to 18% among women age 45-49 (EPHI and ICF, 2019). A similar study revealed that respondents age 15-24 years were 3.3 times more likely to use modern family planning than those aged above 45 years (Andualem, et al., 2017). The same study conducted in (Tesfalidet, et al., 2015)whose age category was 25-34 years were more

likely to utilize modern contraceptive methods than other age groups. It is consistent with the studies conducted in Mali, and Pakistan (Esther, et al., 2008)(Hammad, et al., 2010). From this maternal age is inversely proportional to the use of modern contraceptives.

Contraceptive use increases with women's education and household wealth. 58% of women with more than secondary education are using any contraceptive method compared with 32% of women with no education. Similarly, a study conducted in, (Clara, et al., 2015) improvements in women's educational attainment increase the likelihood of use of modern contraceptives. Likewise, 28% of women in the lowest wealth quintile are using any contraceptive method compared to 53% of women in the highest quintile. The same study conducted by(Westoff. F, 2012)found that the use of family planning is higher for the highest wealth quintile as compared to the lowest wealth quintile.

Different studies agree determinants influencing unmet need for family planning were: older age, high-parity, and being non-Muslim women (Anne, 2015). Knowledge of at least one method of contraceptive became positively associated with unmet need for contraceptives. This finding is similar to South Ethiopia by (Assefa, et al., 2011)where both unmet needs for spacing and limiting found to be higher compared with those who don't know at least one method (Kelemu, et al., 2014). A visit to a health facility, exposure to family planning from media, and an educational difference between a husband and wife rural residence (Tesfayi, et al., 2013), contraception related factors like availability, accessibility, affordability, side effects as a cause for unmet need (Bahiya, et al., 2015), partner attitude towards family planning services utilization, current menstrual status, healthcare providers visit and discussion about family planning issues (Getiye, et al., 2013), high for young married women in the richest wealth quintile and among unmarried women(Kerry, 2014), Women who were housewife/farmers were more likely to have unmet need than those employed women (Ewnetu, et al., 2015). Number of living children, ever use of contraceptive methods (Araya, et al., 2017). The study conducted in (Afework, et al., 2019) showed there were disparities among different regions of Ethiopia for instance unmet need for family planning among reproductive age married women in Amhara region, 13.4%, in Oromia region 31.0% and 24.0% (SNNP) of Ethiopia. In spite of all these problems, no addressed study conducted to examine the pattern of change of FP, the level of unmet need with the effect of socioeconomic, demographic, and institutional determinants of unmet need for FP among married women in the study area, Oromia region.

This study highlights to identify and examine the changes in FP practice and the level of unmet need for family planning through annually recorded EDHS data from 2000 -2016 among married women aged (15-49) in Oromia National Regional State as well as understand the magnitude and the effects of socioeconomic, demographic and institutional determinants linked with unmet need for family planning in the region it is important that enables to identify FP accessibility, availability and affordability and policy interventions that prove the maximum possibility of success and failure. In addition to this, the study contributes to identify the challenges of FP implementation strategies and reproductive health services delivery in the region.

The rise in unmet need for FP regardless of the increment of the use of a modern contraceptive method indicates those married or actively in union women face challenges in meeting their reproductive intentions and having the desired number of children. A Logical understanding and awareness of challenges and married women's characteristics with unmet need for family planning is important for this selected region because it is a densely populated region in the country from the other regions including the two administration cities. It is believed that the varies proportions of the unmet need for family planning knowledge on contraceptives and understanding the determinants for unmet need for family planning in the selected region can provide useful information for policymakers, planners, and program managers as well as for Oromia National Regional State and other stakeholders who have role in the implementation of family planning programs. As a result itinfluences declining child and maternal mortality in addition to reduced unwanted pregnancy and its pregnancy complication including the intentions of induced abortion. Overall the purpose of the thesis being proposed is to examine the practical change of FP and the level of unmet need for FP with the effects of socioeconomic, demographic, and institutional determinants between the surveys in the study region.

1.3. Research Questions

1) What changes were there in family planning practice between the surveys in the study region?
2) Was there a change of unmet need for family planning level between the surveys in Oromia National Regional State?
3) What were the demographic, socioeconomic, and institutional determinants of unmet need for FP in the study regions?

1.4. Research Objective

1.4.1.General Objective

The aim of this study was to examine the trend of family planning practice, explain the changes in the level of unmet need for FP, and to analyze the changes of demographic, socioeconomic, and institutional determinants of unmet need for FP among married women between EDHS 2000 - 2016 surveys in the study region.

1.4.2. Specific Objectives

1) To examine the changes of family planning practice between the four surveys in the study region.
2) To describe the changes of unmet need for family planning level among married women between surveys in Oromia National Regional State.
3) To analyze changes in the effects of demographic, socioeconomic and institutional determinants of unmet need for family planning among women between the surveys in the study region.
4) To indicate(explain) the trend and their difference between unmet need for spacing and unmet need for limiting

1.5. Significance of the Research

In this study, the determinants and trends of unmet need for family planning currently married women aged from 15-49 in Oromia National Regional State annually recorded data from 2000-2016 EDHS aim of informing health service for interventions. With the study results, awareness can be raised and family planning efforts can be reinforced to address unrealistic view of risk and promote uptake of family planning services. In addition, understanding the changes in characteristics and degree of unmet need for family planning support, and strive for planners to produce FP programs. Also the study provides recommendations to rational policy makers to plan and accomplishment of economic interventions into realizing women's need for FP to decline the unmet need for FP consequences of unintended pregnancy and its complications as well as induced abortions for the improvement of reproductive health service delivery.

1.6. Scope and Limitation of the Research

The determinants of unmet need for FP among married women aged 15-49 study was carried out based on EDHS 2000 to 2016 in the selected region of Oromia. The Oromia region area covers 284,538k.m^{2}with the population of 35,466,785, (CSA, 2013). This study restricted only unmet need for family planning married women in the Oromia region without the inclusion of men hence, due to the large population size of this region that leads to miss information about the influence of unmet need for family planning both men and women.Besides, the research is limited to quantitative data analysis and could not use qualitative research that could have helped for more understanding of the determinants of unmet need of FP among married women aged 15-49 between surveys in the study region.

1.7. Organization of the Study

This research thesis was organized into five major chapters. The first chapter deals with the introduction that includes the background of the study, statement of the problem, research question, objective, significance and scope and limitation of the research. The second chapter deals with a detailed literature review. The third chapter is containing the research design and methodology, chapter four describes in detail results and discussion and lastly in chapter five includes conclusions and recommendation.

Operational Definition of Terms

a) **Unmet need for family planning**: is referring to the case were women who prefer to space or limit childbearing but not using any effective modern contraceptive to fulfill its.
b) **Unmet need for spacing**: women with unmet need for spacing births are those who are fecund and sexually active but are not using any method of contraception, and report wanting to delay the next child.
c) **Unmet need for limiting**: are those who desire no additional children and who do not currently use a contraceptive method.
d) **Family Planning:**is the decision-making process by couples, together or individually, on the number of children that they would like to have in their lifetime, and the age interval between children. This means that both halves of a couple have equal rights to decide on their future fertility. In planning their future children, partners need to have the right

information on when and how to get and use methods of their choice without any form of coercion. Such planning therefore helps mothers and their children enjoy the benefits of birth spacing and having planned pregnancies. (Yifru, et al., 2003)

e) **Fecund:** a woman of reproductive age who is not pregnant at the moment but is capable of childbearing.

f) **Amenorrhea:** is the absence or abnormal cessation of spontaneous menstruation in a woman of reproductive age. It is a normal feature in prepubertal, pregnant, lactating and postmenopausal women and should be excluded before diagnosis. Amenorrhoea is a symptom, not a disease, and has a variety of causes. Once pregnancy is excluded, the challenge is to determine the exact cause of amenorrhoea. (Oliver, 2016)

g) Postpartum amenorrhea: is the length of time between the termination of pregnancy and the first successive ovulation following the pregnancy during the reproductive span of a woman. (N. Sanajaoba, et al., 2012)

CHAPTER TWO

2. LITERATURE REVIEW

Introduction

This chapter put forward thoroughly the background of the empirical review of other research journals produced by different authors related to the study. Theoretical perspective associated with unmet need for family planning, issues, and definition of the concept of unmet need and synthesis of the reviewed literature in terms of existing knowledge base and research gap. It enables the researcher to acquire a detailed understanding of the magnitude of demographic and socioeconomic and institutional determinants of the unmet need for FP.

2.1. Conceptual Literature

2.1.1. Concept of Unmet Need for Family Planning

The concept of unmet need was developed more than 42 years ago (Westoff, 1978) and has been refined several times over the years (Westoff and Pebley, 1981; Westoff, 1988 ;). The basic objective is to estimate the proportion of women not using contraception who either want to cease further childbearing (unmet need for limiting) or who want to postpone the next birth at least two more years (unmet need for spacing). These estimates, along with the proportion currently using contraception, are intended to measure the total demand for family planning. Its usefulness lies in identifying groups of women who might be receptive to program efforts and in evaluating the effectiveness of these efforts. Another purpose is to assess the potential impact on the level of fertility because there is a strong association between contraceptive prevalence and fertility use as (Westoff, 2006).

Unmet need has been a core concept in the international population field for more than three decades. Under the level KAP-gab for knowledge, attitudes, and practice regarding family planning, the concept had its origins in the first fertility and family planning surveys carried the 1960s. From the outset, the KAP-gab was recognized as a preeminent rational for investments in family planning programs because of its causal

link to unwanted childbearing. As unmet need has come to occupy a central position, not surprisingly it has been subjected to careful study. Uncertainty and criticism of the concept of its validity and its utility as a guide for policy formulation and program design were clearly articulated and gained wide currency in the 1990s. (John, et al., 2000). And also the measure of unmet need for contraception represents a core concept in the field of family planning and is one of the most important indicators for family planning policy, programs, and research (Rebecca, et al., 2014).

In addition to that, the concept of unmet need has served to mediate between the concerns of governments and social scientists focused primarily on controlling population growth and those of public health professionals and human rights activists who advocate for a focus on women's health and rights (Gilda Sedgh, et al., 2007).

The contraceptive prevalence rate (CPR) remains the contraception parameter of first interest in most quarters, but as time has gone by the prevalence of unmet need has assumed almost equal stature. Because unmet need joins together contraceptive behavior and fertility preferences, the concept represents a marked shift in emphasis, although it is not always recognized as such. An increasing emphasis on unmet need unavoidably brings with it greater attention to the demand for children (John, et al., 2000).

Unmet need for family planning is a valuable concept that is widely used for advocacy, the development of family planning policies, and the implementation and monitoring of family planning programs worldwide. Its definition and calculation are now gaining an unprecedented level of attention from donors as the family planning movement is revitalized. Policymakers and program planners are monitoring information on unmet need as never before, in part due to its recent inclusion as an MDG indicator. Also, it is a valuable indicator for national family planning programs because it shows how well they are achieving the key mission of meeting the population's felt need for family planning (Baral, 2015).That simplification and standardization of the unmet need definition will help ensure the quality and comparability of a key MDG indicator. In turn, better data on unmet need should help to inform advocacy efforts for family planning and maternal and child health policies and programs across the globe (Bradley.S.E.K, et al., 2012).

Unmet need refers to the gap between women's reproductive intentions and their contraceptive behavior. It poses a challenge to family planning program shows can

programs reach women whose reproductive attitudes resemble those of contraceptive users but who, for some reason or combination of reasons, are not using contraception (Genene, et al., 2008).

2.2. Theoretical Literature

According to the Theory of Planned Behavior (TPB), the intention to have or not to have a child is determined by three kinds of considerations. The first is termed behavioral beliefs; which refer to the perceived positive or negative consequences of having a child and the subjective values or evaluations of these consequences. In their aggregate, behavioral beliefs lead to the formation of a positive or negative attitude toward having a child. The second kind of consideration has to do with the perceived expectations and behaviors of important referent individuals or groups, combined with the person's motivation to comply with the referents in question. These considerations are termed normative beliefs and they combine to produce a perceived social pressure or subjective norm with respect to having a child. Thirdly, control beliefs are concerned with the perceived presence of factors that can influence a person's ability to have a child. Together with the perceived power of these factors to facilitate or interfere with having a child, control beliefs produce a certain level of perceived control (or self-efficacy) in relation to having a child (Ajzen, et al., 2013).

Nevertheless, it is true that TPB is focused on the controlled aspects of human judgment and decision making. According to the theory, subjective information in the form of behavioral, normative, and control beliefs provides the foundation for attitudes, subjective norms, and perceptions of control; and these variables lead to the formation of intentions which, ultimately, result in behavior. It is in this sense, and only in this sense, of internal consistency that the decision to have or not to have a child is considered reasoned. The focus on reasoned action should not be misinterpreted to mean that the TPB posits a rational actor who reviews all available information in an objective, unbiased fashion and carefully plans every behavior (Ajzen, et al., 2013). The greater control individuals have on their fertility, ranging from effective contraceptive methods to fertility treatments, combined with increasing social acceptance of choices regarding fertility, renders necessary the understanding of how decisions about childbearing are made (Klobas, 2011) and the impact these decisions have on fertility patterns. Under these circumstances, the occurrence of an unintended birth, for example, is more likely

due to ineffective actual control than to rationality issues(Barber, 2011)(Philipov, 2011).In other words, within the TPB framework, the focus is on the intention and not on the outcome.

People's failure to realize their initial childbearing intentions can be attributed to at least two factors. First, in many countries, there is a tendency to postpone having children due to conflicting career aspirations or other motivations. As a result of declining fertility with age, individuals, and couples who intend to have a certain number of children early in their relationship may fail to realize their intentions (Sobotka, 2004). Second, new information can become available that produces changes in previously formed intentions. This is likely to be the case with intentions to have another child. For example, once a child has been born, individuals and couples learn from the experience, and the new information becomes an input into the attitudes, subjective norms, and perceived control that determines intentions for the future (Ajzen, et al., 2013).Individuals are assumed to take into account factors that promote or hinder their ability to perform the behavior, and these salient control beliefs lead to the formation of perceived behavioral control. This refers to the perceived capability of performing the behavior. Because many behaviors pose difficulties in execution, it is useful to consider perceived behavioral control over having a child in addition to intentions. Like Attitudes and subjective norms, perceptions of behavioral control follow consistently from readily accessible beliefs about resources and obstacles that can facilitate or interfere with the ability to have a child, such as income or wealth, labor force status, and education (Billar, et al., 2009). According(Ajzen, et al., 2013).fertility imitations are also expected to result in having, or not having, a child to the extent that people are capable of attaining their goals, that is to the extent they have actual control over having a child.

2.3. Empirical Literature

2.3.1. Prevalence of Unmet Need for FP among Currently Married Women.

At least one in ten married or an in-union woman in most regions of the world has an unmet need for family planning. Worldwide in 2015, 12 % of married or in-union women are estimated to have had an unmet need for family planning; that is, they wanted to stop or delay childbearing but were not using any method of contraception.

The level was much higher, 22 %, in the least developed countries. Many of the latter countries are in sub-Saharan Africa, which is also the region where unmet need was highest 24 %, double the world average in 2015. In general, unmet need is high where contraceptive prevalence is low. Unmet need in 2015 was highest above 20 % in the regions of Eastern Africa, Middle Africa, Western Africa, and Melanesia, Micronesia, and Polynesia. (DESA, 2015).

The higher percentage of unmet need mainly because of lack of knowledge about contraception (70.5%), followed by fear of side effects (21.3%) and familial pressures (13.9%). A review on unmet need for family planning in developing countries found that substantial increases in contraceptive prevalence can be achieved in the absence of changes in the demand for children by meeting the existing unmet need (John, et al., 2000).

The study was done by (Prateek, et al., 2012)who reported 28.9% had unmet need for spacing and 22.7% had unmet need for limiting in Africa as well as in some regions a study conducted among married Nigerian, Botswana, and Srilanka accordingly with the definition of unmet need for family planning towards with limiting and spacing as shown the above three developing countries married women in Nigerian between 2003 and 2013 stated that there was no significant change in the trends in unmet need to space fertility.(Valekar, et al., 2017).

Trends in unmet need for family planning in the period for which we have observed data on unmet need for family planning 1990-2010, unmet need for family planning decreased worldwide, in developing regions as a whole and in many sub-regions. Worldwide, unmet need fell from 15.3 % (14.0–16.8) in 1990, to 12.4 % (11.0–14.1). In the 2000s, the largest decline in unmet need was in Eastern Africa by 3.4 percentage points and by 3.2 percentage points in Western Asia. In 2010, the unmet need for family planning was lowest in Eastern Asia (4.4 %) (2.4 –7.9), followed by Northern America (6.6 %), (3.7–11.5) and Northern Europe (6.7 %), (4.3 –10.5). Unmet need was 20 % or higher in Eastern Africa (26.5 %, 24.8–28.3), Middle Africa (25.7 %, 22.0–29.8), and Western Africa (24.9 %, 22.4–27.8)(Vladimira, et al., 2013).

According to an Ethiopian demographic health survey (EDHS, 2016), 22% of currently married women have an unmet need for family planning. The study was conducted in

Ethiopia (Hailemariam, 2016). Revealed that in their country Unmet need for contraception increased from 35.1% in 2000 to 37.4% in 2005. Unmet need for spacing remained constant at about 25%, while unmet need for limiting increased by 20% between 2000 and 2005.

One of the Amhara Zone that is Dessiea town study conducted the prevalence of the unmet need for modern contraceptive was 44% (Masresha, et al., 2017) which is much higher than compared to a cross-sectional study in Enemy District, in 2013 and West Belessa district in 2015 both Northwestern Ethiopia showed 25.6% and 39.5% unmet need for contraceptives respectively (Afework, et al., 2019).

Women in SNNP with a higher number of living children (5 or more) were significantly more likely to have an unmet need for limiting births than women with less than five living children. Moreover (Assefa, et al., 2011).The Amhara women are less likely to have an unmet need for spacing than all other women, but a greater need to limit than Sidamo and Tigraway women (Antenane, 2002).

The study conducted by (Afework, et al., 2019)age of women was statistically significant that an increase by one year of age of the women, the odds of being unmet need for family planning would be 20% less likely. Similarly, a demographic health survey comparative reports 34 in developing countries in 2014 reveals that unmet need to family planning was higher among younger women (age 15–19) than older women (age 20–24) and also another cross-sectional study in 2015 in West Belessa District, North Western Ethiopia, among married women with 35years and above were 70% less likely to have unmet need than women with 15–19 age group (Getiye, et al., 2013) and(Macquarrie, 2014). This might be younger age groups have no adequate information regarding contraception and comprehensive education of sexuality and also the majority of Ethiopians reside in rural areas in which contraceptive use among adolescent age groups believed to be shameful (Afework, et al., 2019).

The study conducted Shire-Enda- Selassie, Northern West of Tigrai, the prevalence rate of unmet need for family planning in this study was 21.4%, for spacing 14.5%, and for limiting 6.9% which is in line with Tigrai region, 22%. 15% for spacing and 7% for limiting, EDHS 2011 (Gelawdiwose, et al., 2016), but when compared to the study on Amhara Zone Dessie town(Masresha, et al., 2017) the prevalence rate of unmet need for family planning less two-fold. The study conducted by (Yibrah, et al., 2018)revealedthat

the level of unmet need for family planning among married women was 31.5 % in Rural Tigrai. Despite the high level of unmet need in Ethiopia, much less is known about the determinants of unmet need for family planning for married women in rural areas of Tigrai. Furthermore, women's fertility level in rural areas (5.2) is more than twice for women in urban areas of Tigrai, Ethiopia.

2.3.2. Demographic determinants of unmet need for FP among married women aged 15-49

Many studies have identified quite a several demographic factors as significant determinants of unmet need for FP among women. These include age (Assefa, et al., 2011), (Westoff, 2006),(Westoff. F, 2012).Occupation (Abdel, et al., 2013), inequalities and household wealth, (Westoff. F, 2012), household headship (male or female), women's autonomy.

Findings on age as a determinant of unmet need among women are equivocal; in some studies (UN, 2011), unmet need was found to be more prevalent among younger women including adolescent women, while in others (Hameed, et al., 2011), and it was more prevalent among older adult women. The marital status could also determine unmet need for FP among women. A study revealed that in Hungary, unmet need was higher among those in marital unions than among those in less formal relationships (Erik, 2000). Opposition from husbands or partners (Khan, et al., 2008), could also make currently married/cohabiting women more likely to have a higher unmet need for FP than never married women, however, global evidence emerging from studies shows that there have been declines in unmet need among unmarried sexually active women (Westoff. F, 2012). Women who marry young have a greater need to limit than space, than women who married for the first time between age 18 and 24. The unmet need for limiting increases with the number of living children, while the unmet need for spacing increases with the ideal number of children (Antenane, 2002).

According to the study of (Antenane, 2002) lactation amenorrhea (LAM) is considered a method of birth control only during the first sixth months after birth and under specific circumstances, it was cited as the main reason for the non-use of a contraceptive by 26% of women with unmet need. This misconception was also reinforced in the current survey as 35% of women with unmet need reported that lactation during the first year postpartum protects her from getting pregnant.

Women who believed that modern contraceptives are against the culture were 4 times more likely to have unmet need of FP (Ahmed, 2018).The findings are also inconsistent with two similar studies conducted in Ethiopia, Awi Zone, Amhara regional state (Ewnetu, et al., 2015) and Hashemene town, Oromia region (Mota, et al., 2015) and the study conducted in Sudan (Okud, et al., 2013). This shows the importance of uplift those factors, and thus reduces unmet needs of FP significantly.

2.3.3. Socio-Economic determinants of unmet need for FP among married women

While in Eastern Sudan, higher education among women and their husbands was found to have a significant association with having unmet need for FP (Abdel, et al., 2013); in Ethiopia on the contrary, women with unmet need for both spacing and limiting were found more likely to have lower levels of education unmet need for family planning in SNNP is one of the highest in the country, with a little over one-third of currently married fecund women having unmet need for contraception. Therefore, interventions aimed at reducing unmet need should be targeted towards rural women and women with no or little education (Assefa, et al., 2011) .

Generally, in SSA, most of the declines in unmet needs are among women with some education, particularly beyond the primary school level (Westoff, 2006).(Westoff. F, 2012).Looking at occupation, findings from studies in Ethiopia (Assefa, et al., 2011). Kenya (Ojakaa, 2008). And Eastern Sudan (Abdel, et al., 2013)show that unmet needsdecreases with women's employment. For instance, housewives in Eastern Sudan (Abdel, et al., 2013)and women with no work other than household chores in Ethiopia (Assefa, et al., 2011). Were significantly more likely to have unmet needs.

planning programs and other providers are at first not able to meet the increased demand for contraceptives or address concerns about health and side effects, unmet need increases in the wealthier quintiles, while it remains low in the poorest quintiles where demand for family planning remains low.

Household headship may also influence unmet need for FP among women. Expectedly, in female headed households, women could talk more easily with female head of a household about their reproductive health challenges and female household heads could better understand female health problems, and thus encourage women to visit health facilities (Adhikari, et al., 2010).

A study in Sri Lanka found that women in female-headed households used health services more frequently than did those in male-headed ones. Also, women's autonomy in decision making or control over household resources (ability to keep money aside) has been described as having a significant positive effect on women's demand for and utilization of health products and services such as contraceptives, prenatal and prenatal care services among others (Maitra, 2004),and(Adhikari, et al., 2010).

The two widely used indicators in the literature for the place of residence are a region of residence and urban-rural residence. Some studies ((Assefa, et al., 2011).(Khan, et al., 2008)(Arshad, et al., 2010), have linked these two indicators with differentials in unmet need for FP. For example, two of these studies found both unmet need for spacing and limiting to be higher in rural areas (Arshad, et al., 2010),(Assefa, et al., 2011); and another in Uganda, found the levels of unmet need to be much higher among women living in the Northern region than in the South. Knowledge of FP methods instinctively, knowledge of FP methods would readily come to mind as a determinant of unmet need for FP. Evidence from the literature also confirms this line of thought.

Women who had no access to mass media (radio, television, and newspaper) had a higher level of unmet need for spacing and limiting births compared to those who had exposure to mass media (Assefa, et al., 2011), (Ojakaa, 2008). A similar study conducted in India (Samia, et al., 2015)Print and electronic media are important sources of information that influence the thinking of the masses. Access to media services was seen in 87.8% of rural and 90.9% of urban respondents in the present study. Those women who had exposure to media services in the present study had significantly lower unmet needs and higher contraceptive usage both in rural and urban areas as compared to those who did not.

(Dutta, et al., 2013). Conclusions resulting from a few studies in SSA however differ on if exposure to FP related interventions triggers unmet need or not. For example, a study in Ethiopia revealed that women with unmet need for both spacing and limiting were more likely to have never been visited by a family planning worker (Assefa, et al., 2011), while in Kenya, contact with health services was significantly linked to unmet need for FP with the implication that contact with health services generates demand for FP but often does not meet this demand (Ojakaa, 2008). In addition, Ethiopian women age 15-19, women who have at least one living child, women who reside in rural areas

of the country, women who belong to the Oromo ethnic group, nonimmigrant's, uneducated women, women who have never discussed family planning with a health worker either at a health facility or at their home, women who have never discussed family planning with their husband, women who disapprove of family planning and women who believe that their husband disapproves of family planning the determinants of independent variables on unmet need is significantly higher (Antenane, 2002). A similar study conducted in Nepal (Kamala, 2017)shows that the age of the woman, number of living children, education, occupation, ethnic affiliation, and place of residence are statistically associated with unmet need for family planning among married young women.

2.4. Synthesis of the review

The concept of unmet need was developed more than 25 years ago and has been refined several times over the years. The basic objective is to estimate the proportion of women not using contraception who either want to cease unmet need for limiting or spacing. It has served to mediate between the concerns of governments and social scientists focused primarily on controlling population growth and those of public health professionals and human rights activists who advocate for a focus on women's health and rights and also the measure of unmet need for contraception represents a core concept in the field of family planning and is one of the most important indicators for family planning policy, programs, and research.

A method of quantitative approach was used for this study. The quantitative approach enables the researcher to identify the magnitude and levels of unmet need for FP and to analyze the determinants of unmet need among women of reproductive ages between survey periods. For this purpose, this research adopts an explanatory design based on DHS survey data collected in cross-section for 2000 and 2016 (years).

According to the literature, diverse determinants including age, marital status, level of education, religion, culture, breastfeeding, ethnicity, wealth status, exposure to media, visited by family planning worker, number of living children, and number of marriage have been found to be significantly associated to unmet need for family planning. Misunderstanding of the risk health related to these methods that impact contraceptive use which is an important way to keep up unmet need high especially among married

women. In spite of this, married women fear side effects, fear of being seen by others, and familial pressures were determinants for the utilization of modern contraceptive those could be also contributed to the increment of unmet need for family planning.

Finally, the role of the proposed research is to address the gap and understands the level of determinants associated with unmet need for family planning in the region it is important that enables to identify FP accessibility, availability and affordability, and policy interventions that prove the maximum possibility of success and filer.

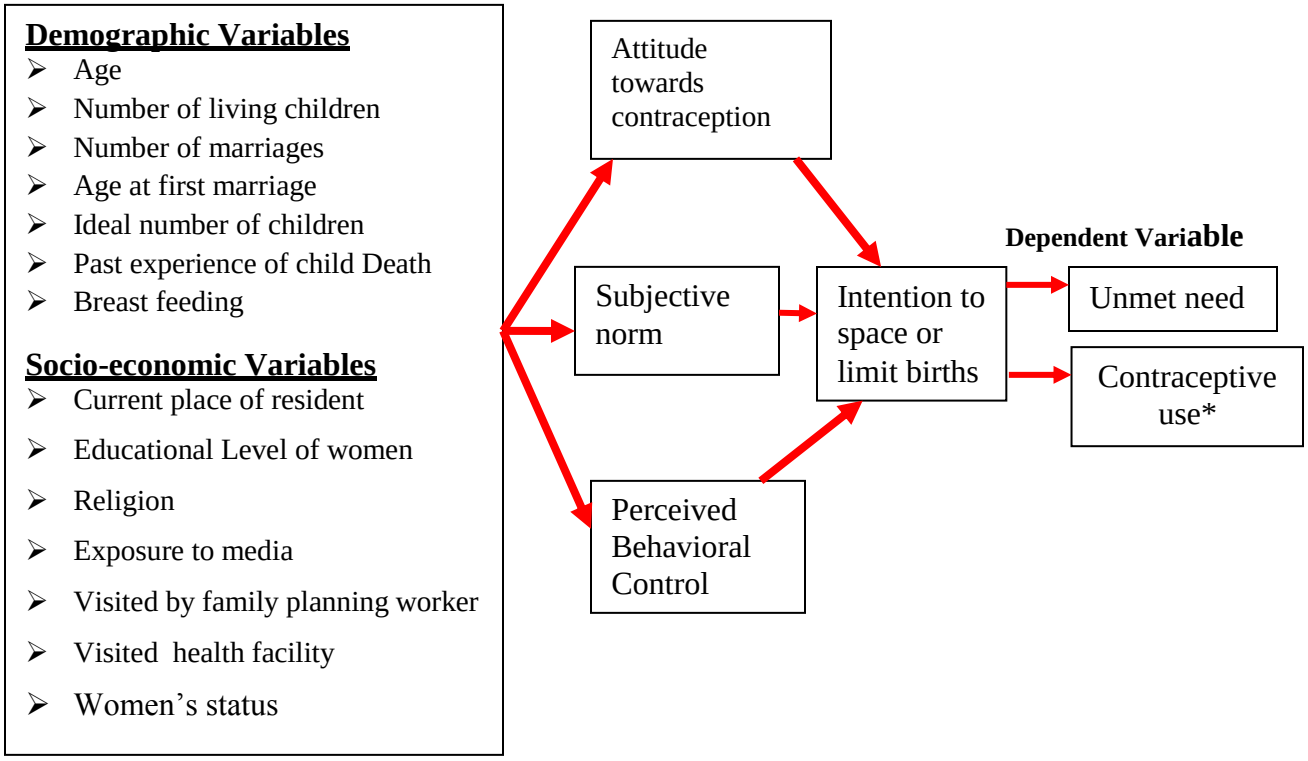
The Oromia National Regional State Health Bureau is paramount important in reducing the risk of unmet need for family planning to improve mainly women and couples access to education and encouraging open discussion family planning problem among couples could considerably enhance the utilization of family planning and consequently reduce unintended pregnancy and abortion as well as its complication.

2.5. Conceptual Framework

This Conceptual framework tries to show the process of attaining the association of dependent and independent variables of unmet need for FP among currently married women. The concept of unmet need for FP brings out the gap between women's reproductive intentions and their contraceptive use behavior. The data on unmet need for family planning can guide someone in understanding the utilization of contraceptives in the community as well as its prevalence rate. In addition to this, the theoretical framework illustrates the pathways by which demographic, socioeconomic, and institutional determinants and their influence to achieve the dependent variable.

Figure 1. Conceptual framework of unmet need for family planning

Independent Variables



Graphical Diagram Showing the Relationship between Unmet need for FP and Predictor Variables

* Contraceptive use is not an outcome under study in this research
Sours: The Researcher on the bases of reviewing the literature.

CHAPTER THREE

3. RESEARCH METHODOLOGY

INTRODUCTION

This study aimed to analyze about unmet need for family planning among married women aged 15- 49 between surveys in the study region, using the Theory of Planned Behavior. To conduct this research, data from 2000 to 2016 EDHS were used.

Research Approach

A quantitative research approach was used for this study. The quantitative approach enables the researcher to identify the magnitude and levels of unmet need for FP. The quantitative research approach is the research that emphasizes numbers and figures in the collected and analyzed data. The researcher was investing in describing the changes of FP practice and the level of unmet need including demographic, socioeconomic, and institutional determinants of unmet need for FP in the study region based on secondary data, DHS result of between 2000-2016.

3.1. Research Design

The objective of this research is to analyze the determinants of unmet need among women of reproductive ages between survey periods. For this purpose, this research adopts an explanatory design based on cross sectional survey data of four rounds of EDHS collected in from 2000 and 2016 (years). Although analysis of changes in the determinants requires better data (e.g. some longitudinal), the DHS is the only available data known to the researcher.

3.2. Research Method

This study used data from the four rounds of EDHS 2000, 2005, 2011 and 2016 to identify determinants of unmet need for contraception in Oromia. The Oromia National Regional State selecting purposively for this study due to highest unmet need among the other regions including the two city administration observed between the surveys, based on a nationally representative sample that provides estimates at the national and regional levels and for urban and rural areas. The conducted survey targeting on women age 15-49 and men age 15-59 in randomly selected households across Ethiopia on fertility, marriage, fertility preferences, awareness and the use of

family planning methods, child feeding practices, nutritional status of women and children, adult and childhood mortality, awareness and attitudes regarding HIV/AIDS, female genital mutilation, domestic violence, and height and weight of women (CSA, 2016).

3.1.1. Sampling Techniques and Sample Size

The EDHS survey used a two stage stratified cluster sampling technique to select the study participants. In stage one, after each administrative region was stratified into urban and rural strata, Enumeration Areas (EAs) were selected using a probability proportional to EA size. In stage two, a household listing operation was carried out in all of the selected EAs and a fixed number of households from each EA were selected (CSA, 2000)(CSA , 2005)(CSA, 2011)(CSA, 2016). This study was based on recorded data of Ethiopia Demographic and Health Survey (EDHS) data for the years 2000 (n=1649), 2005 (n=1466), 2011 (n=1401), and 2016 (n=1314). The surveys were implemented by the Central Statistical Agency (CSA) and Inner City Fund (ICF) international, and funded by the United States Agency for International Development, and the Government of Ethiopia(CSA, 2000)(CSA , 2005)(CSA, 2011)(CSA, 2016).

The Study population

The target populations were all married reproductive age women in Oromia National Regional State.

Inclusion Criteria

Women in the reproductive age group who were currently married, not using any method of contraception, but did not want any more children and wanted to wait for two or more years before having another child.

Exclusion Criteria

The exclusion criteria were unmarried, separated/divorced, widows and pregnant women due to contraceptive failure.

3.1.2. Data Collection Techniques and Procedures

The DHS Program's standard Demographic and Health survey questionnaires and interviewer's data collection techniques were used to collect data between 2000 to2016. The data collection procedures in 2000 EDHS were started in early February 2000 and lasted until the end of May 2000, EDHS2005 the survey was fielded from April 27 to August 30, 2005. The fieldwork was

closely monitored for data quality through regular field visits by senior staff from PHCCO, ORC Macro, and other member organizations of the Steering Committee, in 2011 EDHS the quality control teams regularly visited and often stayed with the EDHS teams throughout the fieldwork period to closely supervise and monitor them. Data collection took place over five months from 27 December 2010 to 3 June 2011 and the study also uses the data collected 2016 EDHS which was conducted from January 18, 2016, to June 27, 2016, based on a nationally representative sample that provides estimates at the national and regional levels and for urban and rural areas (CSA, 2000) (CSA, 2005) (CSA, 2011) (CSA, 2016).

3.1.3. Descriptions of the Variables and Measurements

Variables	Definition	Measurements
Unmet need (for contraceptives)	A woman is said to be facing an unmet need for modern contraceptives, if she wants to use one or a combination of these methods, but is unable to get it.	A value of 1 will be assigned if a woman is facing an unmet need for modern contraceptives; and 0 will be assigned otherwise.
Age	Complete number of years since the birth of a women	Reproductive age group from 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49 *(45-49 is the reference group in the model)*
Number of living children	Quantity or the number of children currently living with their family.	0, 1-3, 4 and above
Ideal number of children	The number of children that a woman or man would have if they could go back to the time when they did not have any children and could choose exactly the number of children to have in their whole life.	0, 1-3, 4 and above
Past experience of child death	It is death of child in the past time.	0, 1, 2,3 and above
Current place of resident	Current place of residence isactual place live there.	Urban, (*Rural is the reference group in the model)*
Educational level of women	Educational attainment, the number of grades completed.	No education, primary education and secondary education and above*(secondary and higher education is the reference group in the FP total unmet need, no education for unmet need for FP).*
Exposure to media	A women's past experience in attending media (especially radio, TV) as related to FP and or contraceptives ets	A value of 1 will be assigned if a woman follow up media 0 will be not follow up.*(yes is the reference group in the model)*
Visited by family planning worker	A woman's past experience of being visited by health worker related to FP and/or contraceptives.	A value of 1 will be assigned if a woman visited by health profession person 0 will be not visited.
Work status	The legal status and classification of someone in employment as either an employee or working on their own account (self-employed).	A value of 1 if a woman currently working, but 0 will be assigned not currently working .*(yes is the reference group in the model)*

3.1.4. Data Analysis Techniques

The 2000-2016 EDHS data was analyzed using Statistical analysis software's Statistical Packages for Social Science (SPSS) version 23. Both descriptive and inferential statistics were employed for the analysis. Descriptive statistics describe the profile of respondent women using percentage, median, and mean of different variables. In addition, they were used to describe the levels and trends of unmet need for family planning. Binary logistic regression model and multinomial logistic regression were used to determine the association between demographic, socioeconomic, and institutional determinants conceptualized as behavioral, normative, and control beliefs following the framework unmet need for contraceptives family planning among married women in the study region.

Logistic regression is applied when the dependent variable is qualitative in nature or categorical. Qualitative variables are either binary (dichotomous) variable or multiple categories. Logistic regression is the form of regression, which is used when the dependent variable is dichotomous and the independent variables are of any type. Since the dependent variable "total unmet need" was a categorical variable with two categories having unmet need and not having unmet need we use binary logistic regression model. Also for the dependent variable of unmet need with categories unmet need for spacing, unmet need for limiting and no unmet need we use multinomial logistic regression because the numbers of categories are more than two and the variable is nominal.

The model is:

$$P(Y = 1|X) = \pi(x) = \frac{e^{(\beta_0+\beta_1x_1+\beta_2x_2+\cdots+\beta_px_p)}}{1+e^{(\beta_0+\beta_1x_1+\beta_2x_2+\cdots+\beta_px_p)}}$$

Where Y =the dependent variable, X= the independent variables, β_0= the constant of the equation and, β_i= the coefficient of the ith predictor variable.

Then the logit of the multiple logistic regressions is given by the equation

$$logit[\pi(x)] = ln\left[\frac{\pi(x)}{1-\pi(x)}\right] = \beta_0 + \beta_1x_1 + \beta_2x_2 + \cdots + \beta_px_p$$

In order to estimate the parameters, maximum likelihood-based iteration algorithms can be employed.

ASSUMPTION OF LOGISTIC REGRESSION

- The dependent variable must be a dichotomy (two categories) for binary logistic regression model.
- The independent variable need not be interval, no linearly related and no equal variance with each group.
- The group must be mutually exhaustive; a case can only be one group and every case must be a member of one of the group.
- Larger sample are needed than for linear regression because maximum like hood coefficients are large sample estimates.
- The logit regression equation should have a linear relationship with the logit form of the dependent variable.

CHAPTER FOUR

4. Result and Discussion

4.1. Background Characteristics

4.1.1. Socio-Demographic characteristics of women

The background characteristics of the respondents are presented in Table 4.1. A total of 1649, 1466, 1401, and 1314 married women from Oromia region were included in EDHS in the years 2000, 2005, 2011, and 2016 respectively.

Table 4.1 shows that among the women included in the survey 49%, 48.6%, 52.6%, and 46.6% were less than 29 years in EDHS 2000, 2005, 2011, and 2016 respectively. Majority of the respondents' partner was in the age group 30-45 42.8%, 44.2%, 46.4% and 46.8% in the survey year 2000, 2005, 2011, and 2016 respectively. Majority of the respondents live in rural areas 92.4%, 91.2%, 86.5% and 91.1% in 2000, 20005, 2011 and 2016 respectively. The number of women with no education decreases in the survey years 84.3% in 2000 while 63% in 2016. A similar trend was also shown in partner's education level, 64.3% with no education in 2000 decreases to 43.4% in 2016. The number of both women and partners with primary and above education levels had in general increasing trend. Majority of the respondents were Muslim 46.6%, 50.1%, 50.1% and 55.2% followed by Orthodox 33.9%, 29.7%, 24.9% and 20.8% in survey year 2000, 2005, 2011 and 2016 respectively. The numbers of women currently working were 48%, 30.1%, 40%, and 31.8% in the survey year 2000, 2005, 2011, and 2016 respectively.

The majority of the women included from Oromia region had three or more children 57.6%, 64.2%, 60.4%, and 64.9% in the survey year 2000, 2005, 2011, and 2016 respectively. The number of women who married at age below 15 was 44%, 44.4%, 37.8%, and 38.3% in the survey year 2000, 2005, 2011, and 2016 respectively.

Ideal numbers of children for the majority of the women were three or more 76.6%, 68.3%, 70.2%, and 65.7% in the survey year 2000, 2005, 2011, and 2016 respectively. The number of women who lost one or more children was declining by 49.4%, 39.1%, 35.8%, and 28% in the survey year 2000, 2005, 2011, and 2016 respectively.

Table 4.1 Socio-Demographic characteristics of the respondents in Oromia region, EDHS 2000-2016

Variables	EDHS 2000		EDHS 2005		EDHS 2011		EDHS 2016	
	N	%	N	%	N	%	N	%
Age 5-year groups								
15-19	145	8.8%	120	8.2%	112	8.0%	81	6.2%
20-24	334	20.2%	264	18.0%	246	17.5%	236	17.9%
25-29	330	20.0%	329	22.4%	381	27.2%	296	22.5%
30-34	280	16.9%	249	17.0%	228	16.3%	279	21.2%
35-39	222	13.4%	213	14.5%	205	14.6%	203	15.4%
40-44	188	11.4%	145	9.9%	114	8.1%	124	9.4%
45-49	153	9.3%	148	10.1%	117	8.3%	98	7.4%
Type of place of residence								
Urban	126	7.6%	129	8.8%	190	13.5%	117	8.9%
Rural	1526	92.4%	1339	91.2%	1213	86.5%	1200	91.1%
Highest educational level								
No education	1393	84.3%	1130	77.0%	876	62.4%	830	63.0%
Primary	198	12.0%	257	17.5%	441	31.4%	394	29.9%
Secondary	56	3.4%	75	5.1%	46	3.3%	66	5.0%
Higher	5	0.3%	6	0.4%	40	2.9%	27	2.1%
Religion								
Orthodox	560	33.9%	436	29.7%	350	24.9%	274	20.8%
Catholic	6	0.4%	23	1.6%	3	0.2%	13	1.0%
Protestant	211	12.8%	229	15.6%	320	22.8%	276	21.0%
Muslim	770	46.6%	735	50.1%	703	50.1%	727	55.2%
Traditional	98	5.9%	33	2.2%	22	1.6%	19	1.4%
Other	7	0.4%	12	0.8%	0	0.0%	0	0.0%
Partner's education level								
No education	1061	64.3%	800	54.7%	617	44.0%	571	43.4%
Primary	421	25.5%	484	33.1%	631	45.0%	559	42.4%
Secondary	140	8.5%	153	10.5%	77	5.5%	122	9.3%
Higher	20	1.2%	25	1.7%	70	5.0%	60	4.6%
Don't know	8	0.5%	1	0.1%	7	0.5%	5	0.4%
Respondent currently working								
No	859	52.0%	1026	69.9%	841	60.0%	898	68.2%
Yes	792	48.0%	442	30.1%	561	40.0%	419	31.8%
Age at first marriage								
<= 15	727	44.0%	652	44.4%	531	37.8%	504	38.3%
16 - 18	618	37.4%	448	30.5%	508	36.2%	459	34.9%
19 - 24	293	17.7%	318	21.7%	323	23.0%	290	22.0%
25+	14	.8%	50	3.4%	41	2.9%	64	4.9%
Number of living children								
0	176	10.7%	121	8.2%	115	8.2%	99	7.5%
1 – 2	524	31.7%	405	27.6%	440	31.4%	364	27.6%
3 – 4	453	27.4%	425	29.0%	413	29.4%	358	27.2%
5+	499	30.2%	517	35.2%	435	31.0%	496	37.7%
Number of children who have died								
0	836	50.6%	894	60.9%	901	64.2%	948	72.0%
1 – 2	622	37.7%	449	30.6%	397	28.3%	327	24.8%
3+	194	11.7%	125	8.5%	105	7.5%	42	3.2%
Ideal number of children								
Can't decide / never thought about it	50	3.0%	0	0.0%	0	0.0%	0	0.0%
As God wishes	223	13.5%	160	10.9%	167	11.9%	155	11.8%
Non-numeric response	10	.6%	44	3.0%	31	2.2%	7	.5%
0-2	102	6.2%	238	16.2%	219	15.6%	278	21.1%

3-4	430	26.0%	468	31.9%	497	35.4%	362	27.5%
5+	836	50.6%	534	36.4%	488	34.8%	503	38.2%
DK	0	0.0%	22	1.5%	0	0.0%	12	0.9%

Source: Extracted from the raw data of EDHS 2000-2016

4.1.2. Current pregnancy status and information about FP

The purpose of the information it is to show whether the women have some information about family planning. Preferred future method is to show what the women want to use in the future where the information will be important for FP workers in the area for planning.

Table 4.2 shows that 15.3%, 13.5 %, 12.2 %, and 11.3 % of the women were currently pregnant in the survey year 2000, 2005, 2011, and 2016 respectively. 49.6%, 52.4 %, 49.8 %, and 46.3 % of women were currently breastfeeding their last child in the survey year 2000, 2005, 2011, and 2016 respectively. The numbers of women having no radio were 72 %, 59.8 %, 52.1 %, and 64.7 % in the survey year 2000, 2005, 2011, and 2016 respectively which shows the majority of women have no radio. Also, the majority of women have no television 95 %, 95.2 %, 89.6 %, and 89.2 % in the survey year 2000, 2005, 2011, and 2016 respectively. The numbers of women who heard about family planning on radio last months were 14.1 %, 31.2 %, 34.6 %, and 23.9 % in the survey year 2000, 2005, 2011, and 2016 respectively. The numbers of women who heard about family planning on TV last months were 1.3 %, 6.3 %, 12.3 %, and 10 % in the survey year 2000, 2005, 2011, and 2016 respectively. The numbers of women who visited a health facility in the last 12 months were 45.6%, 29.6%, 38.3%, and 43.7% in the survey year 2000, 2005, 2011, and 2016 respectively. Among those women who visited a health facility in the last 12 months 23.3%, 26.5%, 23.9%, and 40.1% were told about family planning in the facility in the survey year 2000, 2005, 2011, and 2016 respectively. The numbers of women who were visited by family planning workers in the last 12 months were 1.2 %, 7.6 %, 16.4 %, and 26.7 % in the survey year 2000, 2005, 2011, and 2016 respectively. The majority of the women testify the decision about using contraception was made by jointly 56.1%, 81.4%, 80.1%, and 72.8% in the survey year 2000, 2005, 2011, and 2016 respectively.

Table 4.2: Current pregnancy status and information about FP

	EDHS 2000		EDHS 2005		EDHS 2011		EDHS 2016	
	N	%	N	%	N	%	N	%
Currently pregnant								
No or unsure	1400	84.7%	1270	86.5%	1232	87.8%	1168	88.7%
Yes	252	15.3%	198	13.5%	171	12.2%	149	11.3%
Current pregnancy wanted								
Then	135	53.8%	106	53.8%	102	60.0%	101	67.8%
Later	76	30.3%	47	23.9%	51	30.0%	35	23.5%
Not at all	40	15.9%	44	22.3%	17	10.0%	13	8.7%
Wanted last child								
Wanted then	757	61.7%	638	55.9%	644	63.1%	699	72.5%
Wanted later	238	19.4%	261	22.9%	269	26.4%	169	17.5%
Wanted no more	232	18.9%	243	21.3%	107	10.5%	96	10.0%
Currently breastfeeding								
No	833	50.4%	699	47.6%	704	50.2%	707	53.7%
Yes	819	49.6%	769	52.4%	699	49.8%	610	46.3%
Has radio								
No	1189	72.0%	878	59.8%	731	52.1%	852	64.7%
Yes	386	23.4%	569	38.8%	637	45.4%	448	34.0%
Not dejure resident	77	4.7%	21	1.4%	35	2.5%	17	1.3%
Has television								
No	1570	95.0%	1398	95.2%	1256	89.6%	1176	89.3%
Yes	5	0.3%	49	3.3%	111	7.9%	124	9.4%
Not dejure resident	77	4.7%	21	1.4%	35	2.5%	17	1.3%
Heard FP on radio last months								
No	1419	85.9%	1010	68.8%	918	65.4%	1002	76.1%
Yes	232	14.1%	457	31.2%	485	34.6%	315	23.9%
Heard FP on TV last months								
No	1629	98.7%	1375	93.7%	1230	87.7%	1185	90.0%
Yes	22	1.3%	93	6.3%	173	12.3%	132	10.0%
Heard FP newspaper last months								
No	1631	98.8%	1412	96.2%	1344	95.8%	1282	97.3%
Yes	20	1.2%	56	3.8%	59	4.2%	35	2.7%
Visited by FP worker last 12m								
No	1632	98.8%	1356	92.4%	1171	83.6%	965	73.3%
Yes	20	1.2%	111	7.6%	229	16.4%	352	26.7%
Visited health facil. last 12m								
No	899	54.4%	1034	70.4%	864	61.7%	741	56.3%
Yes	753	45.6%	434	29.6%	536	38.3%	576	43.7%
At health facility, told of FP								
No	577	76.7%	319	73.5%	407	76.1%	345	59.9%
Yes	175	23.3%	115	26.5%	128	23.9%	231	40.1%
Decision maker for using contraception								
Mainly respondent	28	28.6%	24	12.8%	59	16.1%	66	17.2%
Mainly husband, partner	15	15.3%	11	5.9%	14	3.8%	38	9.9%
Joint decision	55	56.1%	153	81.4%	293	80.1%	279	72.8%

Source: Extracted from the raw data of EDHS 2000-2016

4.1.3. Current contraceptive method and preferred future method

Table 4.3 shows the current contraceptive method and preferred future methods. The table shows the majority of the women were not using any contraception method 94.1%, 86.4, 73.6%, and 70.9% in the survey year 2000, 2005, 2011, and 2016 respectively showing a

decreasing trend. Among the women included in the study 1.8%, 3.3%, 2.3%, and 1.3% were using the pill for family planning in the survey year 2000, 2005, 2011, and 2016 respectively. Injection users show an increasing trend of 1.4%, 8.6%, 18.8%, and 19.9% in the survey year 2000, 2005, 2011, and 2016 respectively. The table also shows an increasing trend in modern contraceptives use 3.8%, 12.9%, 25.1%, and 28.5% in the survey year 2000, 2005, 2011, and 2016 respectively. In EDHS2000 preferred future method of family planning for the majority of women was pill 46.3% followed by injection 38.7% while in EDHS2005 the majority was injection 64.4% followed by pill 21.6%.

The number of non-user women who had the intension to use the modern contraceptive method in the near future was 43.6%, 51.1%, 41.7%, and 33.7% in the survey year 2000, 2005, 2011, and 2016 respectively.

Table 4.3: Current contraceptive method and preferred future method

	EDHS 2000		EDHS 2005		EDHS 2011		EDHS 2016	
	N	%	N	%	N	%	N	%
Current contraceptive method								
Not using	1554	94.1%	1269	86.4%	1032	73.6%	934	70.9%
Pill	30	1.8%	49	3.3%	32	2.3%	16	1.2%
IUD	1	0.1%	3	0.2%	4	0.3%	24	1.8%
Injections	23	1.4%	126	8.6%	264	18.8%	262	19.9%
Diaphragm	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Condom	4	0.2%	2	0.1%	2	0.1%	0	0.0%
Female Sterilization	5	0.3%	4	0.3%	3	0.2%	3	0.2%
Male Sterilization	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Periodic Abstinence	30	1.8%	5	0.3%	15	1.1%	6	0.5%
Withdrawal	5	0.3%	5	0.3%	4	0.3%	1	0.1%
Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Norplant	0	0.0%	1	0.1%	47	3.3%	67	5.1%
Current use by method type								
No method	1554	94.1%	1269	86.4%	1032	73.6%	934	70.9%
Folkloric method	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Traditional method	35	2.1%	10	0.7%	19	1.4%	7	0.5%
Modern method	63	3.8%	189	12.9%	352	25.1%	376	28.5%
Pattern of use								
Currently using	98	5.9%	199	13.6%	371	26.4%	383	29.1%
Used since last birth	0	0.0%	63	4.3%	96	6.8%	118	9.0%
Used before last birth	120	7.3%	64	4.4%	119	8.5%	130	9.9%
Never used	1434	86.8%	1142	77.8%	817	58.2%	686	52.1%
Intention to use								
In next 12 months	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Use later	721	46.4%	749	59.2%	585	56.9%	438	46.9%
Unsure about timing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Unsure about use	19	1.2%	13	1.0%	33	3.2%	25	2.7%
Does not intend	813	52.4%	504	39.8%	410	39.9%	471	50.4%
Never had sex	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Preferred future method								
Pill and IUD	333	46.3%	164	21.9%				

Injections, condom and Female Sterilization	279	38.8%	485	64.8%				
Periodic Abstinence and Withdrawal	10	1.4%	8	1.0%				
Norplant and Other	19	2.6%	57	7.6%				
Don't know	78	10.8%	34	4.5%				
Contraceptive use & intention								
Using modern method	63	3.8%	189	12.9%	352	25.1%	376	28.5%
Using traditional method	35	2.1%	10	0.7%	19	1.4%	7	0.5%
Non-user intend to	721	43.6%	749	51.0%	585	41.7%	438	33.3%
Does not intend to	833	50.4%	520	35.4%	447	31.9%	496	37.7%

Source: EDHS 2000-2016

4.1.4. Reason for not using contraception

Table 4.4 shows the reasons for not using modern contraceptives. In EDHS 2000 majorities 62.1% were not using a modern contraceptive method due to fertility-related reasons and among these 45.7% was because they want more children. Opposition to use was the next reason not to use modern contraceptive methods which accounts for 15.9% and among these 5.8% was due to religious prohibition, 5.4% was due to the woman opposition and 4.7% was due to husband opposition. In EDHS 2005 the highest 35.9% was not using modern contraceptive methods due to method related reasons and among these 18.6% was because of other unlisted reasons. Fertility related was the next reason not to use modern contraceptive methods which accounts for 35.8% and among these 13.2% was because the mother want more children and 11.1% was because the woman was infecundity or sub-fecund.

In EDHS 2011 majorities 39.4% were not using modern contraceptive methods due to method related reasons and among these 19.4% were because of fear of side effects. Fertility related was the next reason not to use modern contraceptive methods which accounts for 31.3% and among these 21.3% was because the mother wants more children, 5% was due to infrequent sex and 3.2% was because of the woman was infecundity or sub-fecund. In EDHS 2016 majorities 42.8% were not using modern contraceptive methods due to opposition to using and among these 17.2% was because of the woman opposition, 16.6% was due to religious prohibition and 7.1% was due to husband opposition. Method related was the next reason not to use modern contraceptive methods which accounts 31.1% and among these 18.5% was because of fear of side effects and 5.2% was due to the woman opposition and 4.7% was because of other unlisted reasons.

Table 4.4: Percentage of currently married women (age 15-49) in Oromia region by reason for not using contraception, EDHS 2000-2016

Main reason not to use a meth.	EDHS 2000		EDHS 2005		EDHS 2011		EDHS 2016	
	n	%	n	%	n	%	N	%
FERTILITY-RELATED								
Infrequent sex	18	2.2%	24	4.7%	31	5.0%	25	6.8%
Menopausal, hyster.	62	7.5%	35	6.8%	11	1.8%	3	0.8%
Sub-fecund, infecund	56	6.7%	57	11.1%	20	3.2%	25	6.8%
Wants more children	380	45.7%	68	13.2%	133	21.3%	36	9.8%
OPPOSITION TO USE								
Respondent opposed	45	5.4%	20	3.9%	15	2.4%	63	17.2%
Husband opposed	39	4.7%	29	5.6%	34	5.4%	26	7.1%
Others opposed	0	0.0%	1	0.2%	7	1.1%	7	1.9%
Religious prohibit.	48	5.8%	59	11.5%	65	10.4%	61	16.6%
LACK OF KNOWLEDGE								
Knows no method	57	6.9%	21	4.1%	31	5.0%	2	0.5%
Knows no source	19	2.3%	14	2.7%	31	5.0%	4	1.1%
METHOD-RELATED								
Health concerns	45	5.4%	46	8.9%	0	0.0%	0	0.0%
Fear side effects	26	3.1%	17	3.3%	121	19.4%	68	18.5%
Lack of access	1	0.1%	1	0.2%	18	2.9%	6	1.6%
Cost too much	1	0.1%	2	0.4%	2	0.3%	5	1.4%
Inconvenient to use	2	0.2%	1	0.2%	27	4.3%	6	1.6%
Interfere with body	1	0.1%	2	0.4%	28	4.5%	3	0.8%
Other	22	2.6%	96	18.6%	47	7.5%	19	5.2%
DK	10	1.2%	20	3.9%	3	0.5%	8	2.2%

Source: EDHS 2000-2016

4.2.Levels of Unmet Need for Family Planning

Figure.2 shows that out of 1649 women included in EDHS 2000 in Oromia region 98 (6%) were using contraceptive (2.7% for spacing and 3.3% for limiting) and among the remaining 94% not using modern contraception, 15.3% were pregnant or amenorrheic and 78.7% were not pregnant. Out of 15.3% of pregnant women 4.7% were mistimed pregnancy (unmet need for spacing), 2.4% were unintended pregnancy (unmet need for limiting) and 8.2% were intended pregnancy (no unmet need). Out of 78.7%, not pregnant women, 66.8% were fecund and 11.9% were infecund (no unmet need). Of the fecund women 17.9% want child later (unmet need for spacing), 13.7% want no more child (unmet need for limiting) and 35.2% want a child soon (no unmet need). The levels of unmet need for spacing in 2000 was 22.6% (4.7+17.9), the levels of unmet need for limiting in 2000 was 16.1% (2.4+13.7) and the total levels of unmet need in 2000 were 38.7% (22.6+16.1).

Figure.2 shows that out of 1466 women included in EDHS2005 in Oromia region 13.6% were using contraceptive (5.7% for spacing and 7.9% for limiting) and among the remaining 86.4% not using modern contraception, 13.5% were pregnant or amenorrheic and 72.9% were not pregnant. Of pregnant women 3.1% were mistimed pregnancy (unmet need for spacing), 3% were unintended pregnancy (unmet need for limiting) and 7.2% were intended pregnancy (no unmet need). Out of 72.9%, not pregnant women, 58.5% were fecund and 14.4% were infecund (no unmet need). Of the fecund women 19.5% want child later (unmet need for spacing), 15.7% want no more child (unmet need for limiting) and 23.3% want a child soon (no unmet need). The levels of unmet need for spacing in 2005 was 22.6% (3.1+19.5), the levels of unmet need for limiting in 2005 was 18.7% (3+15.7) and the total levels of unmet need in 2005 were 41.3% (22.6+18.7).

Figure.3 shows that out of 1401women included in EDHS2011 in Oromia region 371 (26.5%) were using contraceptive (15.1% for spacing and 11.4% for limiting) and among the remaining 73.5% not using modern contraception, 12.2% were pregnant or amenorrheic and 61.3% were not pregnant. Out of 12.2% pregnant women 3.7% were mistimed pregnancy (unmet need for spacing), 1.2% was unintended pregnancy (unmet need for limiting) and 7.3% were intended pregnancy (no unmet need). Out of 61.3%, not pregnant women, 49.2% were fecund and 12.1% were infecund (no unmet need). Of the fecund women, 16.4% want a child later (unmet need for spacing), 9.4% want no more child (unmet need for limiting) and 23.4% want a child soon (no unmet need). The levels of unmet need for spacing in 2011 was 20.1% (3.7+16.4), the levels of unmet need for limiting in 2011 was 10.6% (1.2+9.4) and the total levels of unmet need in 2011 were 30.7% (20.1+10.6).

Figure.3 shows that out of 1314women included in EDHS2016 in Oromia region 29.2% were using contraceptive (15.9% for spacing and 13.3% for limiting) and among the remaining 70.8% not using modern contraception, 11.3% were pregnant or amenorrheic and 59.5% were not pregnant. Out of 11.3% of pregnant women 2.7% were mistimed pregnancy (unmet need for spacing), 1% was unintended pregnancy (unmet need for limiting) and 7.6% were intended pregnancy (no unmet need). Out of 59.5%, not pregnant women, 47.7% were fecund and 11.8% were infecund (no unmet need). Of the fecund women 14.2% want child later (unmet need for spacing), 10.3% want no more child (unmet need for limiting) and 23.2% want a child soon (no unmet need). The levels of unmet need for spacing in 2016 was 16.9%

(2.7+14.2), the levels of unmet need for limiting in 2016 was 11.3% (1+10.3) and the total levels of unmet need in 2016 were 28.2% (16.9+11.3).

The level of unmet need for family planning was carried out on the currently married women of 15–49 years by using the Westoff model (Fig 2 and Fig 3). The total unmet need for contraceptives in the Oromia region was 38.7%, 41.3%, 30.7%, and 28.3% in the survey year 2000, 2005, 2011, and 2016 respectively.

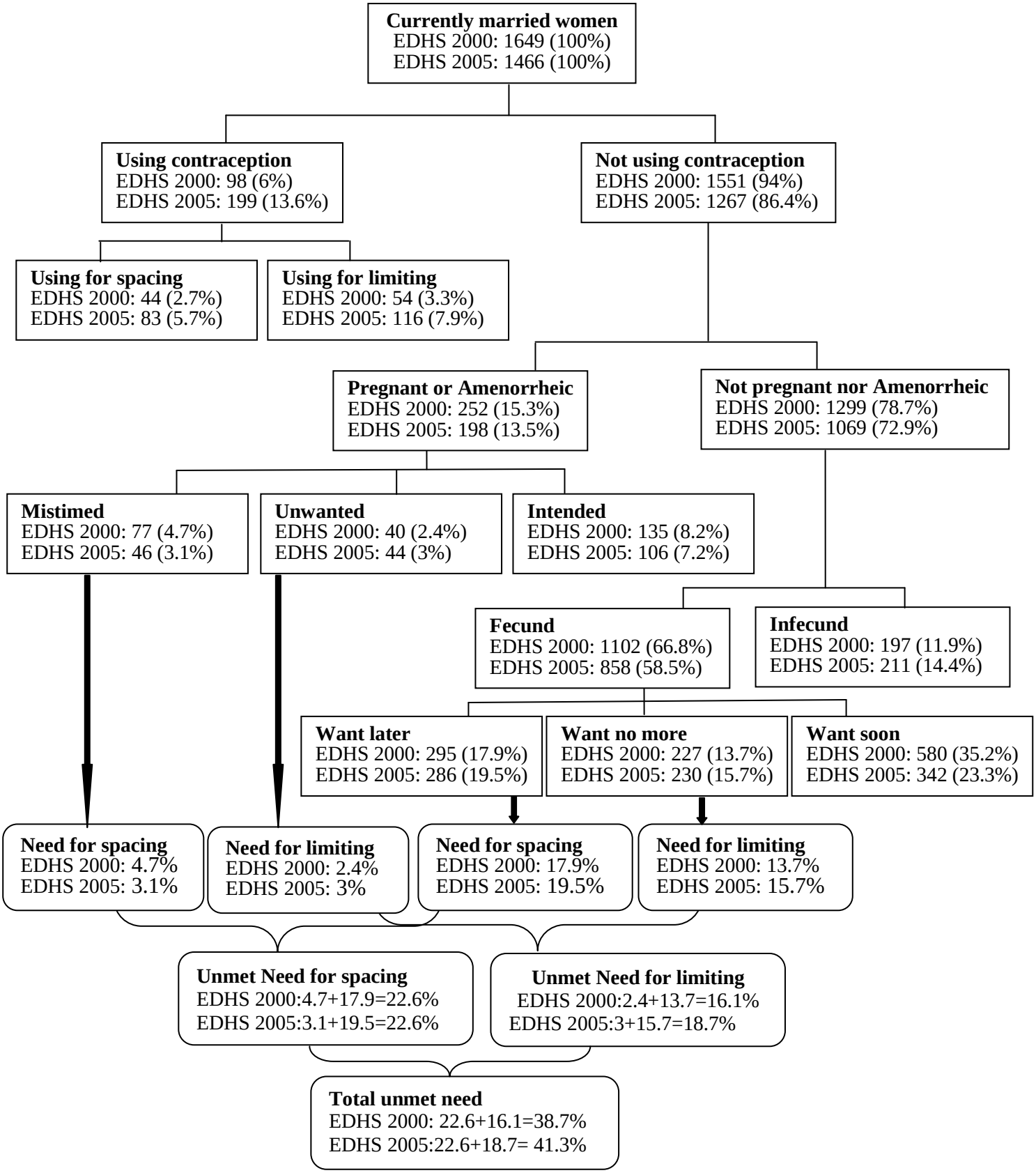


Figure 2: Unmet need for family planning of Oromia Region, EDHS 2000 & 2005.

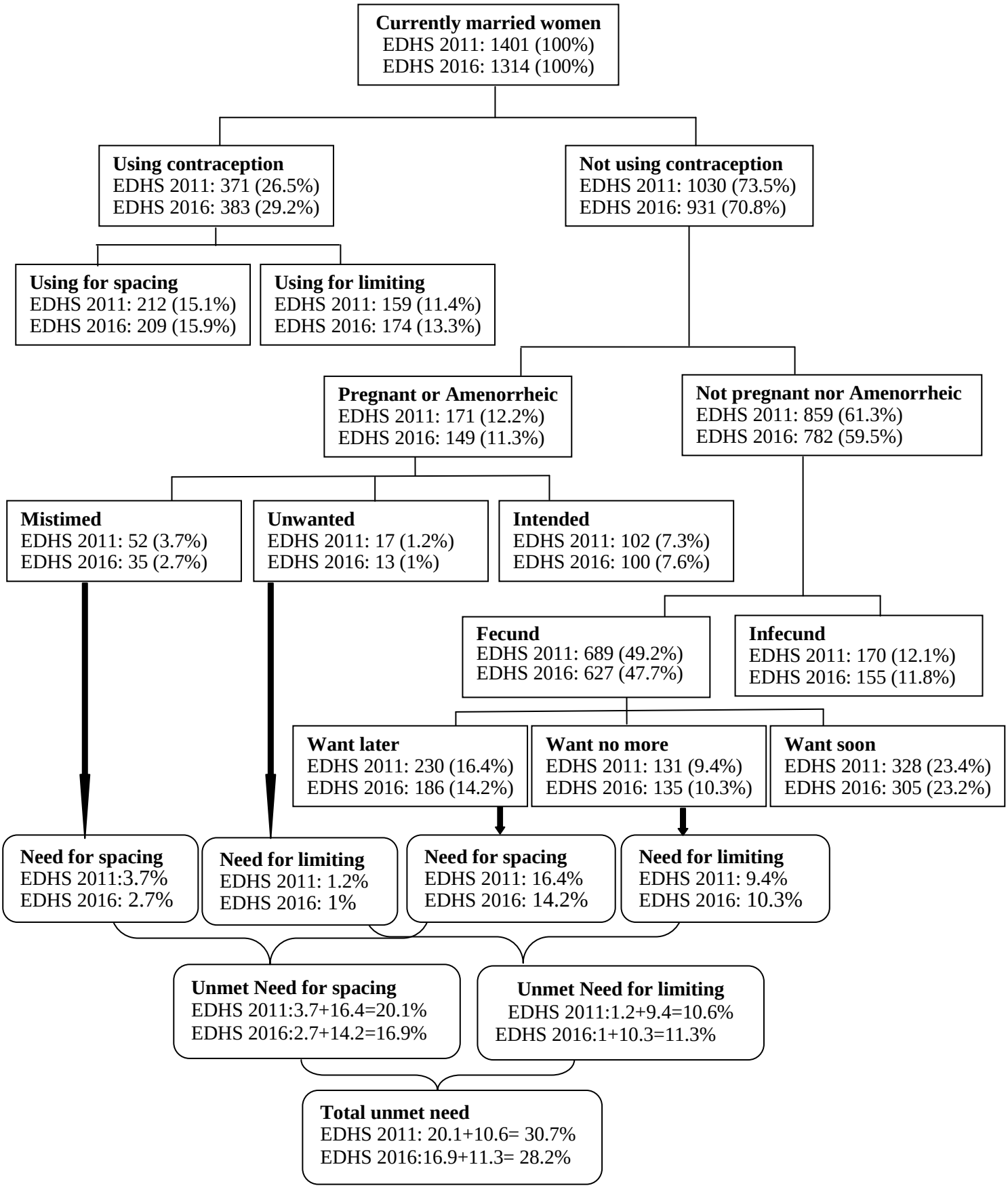


Figure 3: Unmet need for family planning of Oromia Region, EDHS 2011 & 2016.

4.3. Trends in the Unmet Need for Family Planning

This section presents the level of change in unmet need, currently using (met need), total demand, and percent of demand satisfied in the four consecutive EDHS for the Oromia region. Figure 4.2 shows both met needs and unmet needs over time. Table 4.5 shows total demand and percent of demand satisfied.

Unmet need for family planning increases slightly by 2.6% from 38.7% in 2000 to 41.3% in 2005. The increase in unmet need is attributed almost only to unmet need for limiting 2.5%. But for the next two consecutive EDHS, the trend for unmet need show a strict decline. There was a 10.7% decline from 2005 to 2011 and a 2.6% decline from 2011 to 2016. A detailed look into the figure shows there was an increase in unmet need for limiting from 2011 to 2016 by 0.7% as well. Unmet need for spacing on the other hand show a decline from 2005 to 2016.

The prevalence of contraceptive use shows an increasing trend from 2000 to 2016. Contraceptive use increases from 6% in 2000 to 13.6% in 2005 showing an increase of 7.6%, from 13.6% in 2005 to 26.4% in 2011 showing an increase of 12.8%, and from 26.4% in 2011 to 29.1% in 2016 showing an increase of 2.7%. Met need for family planning also increased strictly for both limiting and spacing from 2000 to 2016. The met need for spacing in 2016 was almost six times of met need for spacing in 2000. The met need for limiting in 2016 was four times of met need for limiting in 2005.

Met need and unmet need for family planning together give the demand for family planning. It shows the proportion of married women that demand contraception either to space or limit birth. Demand for family planning shows an increasing trend from 2000 to 2016. Demand for family planning increased from 44.7% to 57.1% from 2000 to 2016. The demand for spacing shows an increasing trend from 2000 to 2016. Although the demand for limiting increases from 19.5% in 2000 to 26.6% in 2005, it shows a decline from 26.6% in 2005 to 21.8% in 2011 and then it shows an increase from 21.8% in 2011 to 24.4% in 2016.

The proportion of met need (current use) from the total demand give percent demand satisfied. The percent of women whose demand satisfied was increasing from 13.42% in 2000 to 50.96% in 2016 showing almost four-fold increase. The percent demand satisfied for both spacing and limiting had an increasing trend.

Table 4.5: Trend in total demand for contraception and its components for currently married women, Oromia, Ethiopia, EDHS 2000 - 2016

Demand for contraception	EDHS 2000	EDHS 2005	EDHS 2011	EDHS 2016
Unmet need for				
Spacing	22.50%	22.60%	20.10%	16.80%
Limiting	16.20%	18.70%	10.50%	11.20%
Total	38.70%	41.30%	30.60%	28.00%
Current use for (%)				
Spacing	2.70%	5.70%	15.10%	15.90%
Limiting	3.30%	7.90%	11.30%	13.20%
Total	6.00%	13.60%	26.40%	29.10%
Total demand for (%)				
Spacing	25.20%	28.30%	35.20%	32.70%
Limiting	19.50%	26.60%	21.80%	24.40%
Total	44.70%	54.90%	57.00%	57.10%
Percent demand satisfied for				
Spacing	10.71%	20.14%	42.90%	48.62%
Limiting	16.92%	29.70%	51.83%	54.10%
Total	13.42%	24.77%	46.32%	50.96%

Source: EDHS 2000-2016

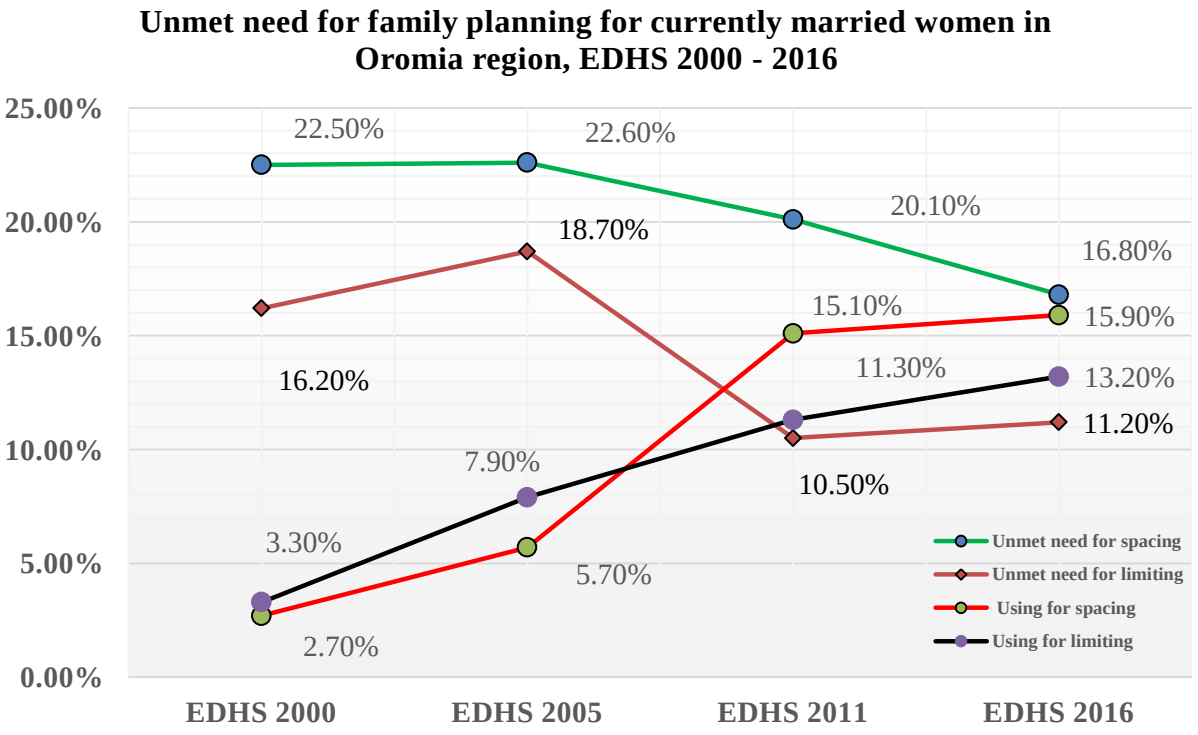


Figure 4: Trend in unmet need and current use for contraception among currently married women, Oromia, Ethiopia, EDHS 2000 - 2016

4.3.1. Trend in unmet need by different background characteristics

Table 4.6 shows the trend in unmet needs and current use for contraception by different background characteristics.

Unmet need for spacing for women with no education and secondary and above education showed a declining trend while women with primary education showed an increasing trend across the four EDHS surveys. Unmet need for limiting for women with no education showed a declining trend for the first three surveys and an increase in the last survey while for women with primary education it showed an increasing trend across the first three EDHS surveys and a decline in the last survey. But unmet need for limiting women with secondary and above education showed a decline in the first survey and shows an increasing trend for the last three surveys.

The level of unmet needs is in urban areas is different from that of rural areas. In general, women in rural areas have a greater unmet need than women in urban areas. The trend shows up and downs in the four EDHS surveys. Unmet need for spacing for women with no TV showed a declining trend across the four EDHS surveys. Similarly, unmet need for limiting for women with no TV showed a declining trend across the first three EDHS surveys but it shows an increase in the last survey. Both unmet needs for spacing and unmet need for limiting for women with no Radio showed a declining trend across the first three EDHS surveys but it shows an increase in the last survey. Among women who were visited by the FP worker last 12m, there was a decline in unmet needs across the four surveys.

Table 4.6: Trend in unmet need and current use for contraception by different characteristics among currently married women, Oromia, Ethiopia, EDHS 2000 - 2016

	EDHS 2000		EDHS 2005		EDHS 2011		EDHS 2016	
	Unmet need %		Unmet need %		Unmet need %		Unmet need %	
	Spacing	Limiting	Spacing	Limiting	Spacing	Limiting	Spacing	Limiting
Age 5-year groups								
15-19	12.1	2.2	13.3	5.5	13.8	0.7	9.0	2.0
20-24	29.0	9.4	23.8	10.2	19.9	4.7	19.5	6.8
25-29	25.8	13.9	28.9	19.3	37.2	17.6	29.4	10.8
30-34	15.3	19.9	17.8	19.0	14.2	20.3	24.4	23.6
35-39	9.1	21.0	12.0	20.8	9.9	25.0	12.2	27.7
40-44	7.0	22.1	3.9	16.1	3.9	18.9	4.1	16.2
45-49	1.6	11.6	0.3	9.1	1.1	12.8	1.4	12.8
Highest educational level								
No education	78.2	87.3	75.9	81.4	63.5	70.9	61.5	74.3
Primary	17.5	9.4	20.8	16.8	34.4	27.0	35.7	22.3
Secondary and Higher	4.3	3.4	3.3	1.8	2.1	2.0	2.7	3.4
Type of place of residence								
Urban	5.4	8.2	3.0	5.8	6.7	8.8	1.8	6.1
Rural	94.6	91.8	97.0	94.2	93.3	91.2	98.2	93.9
Heard FP on radio last months								
No	84.9	86.5	73.4	73.4	72.7	68.9	79.6	86.5
Yes	15.1	13.5	26.6	26.6	27.3	31.1	20.4	13.5
Heard FP on TV last months								
No	98.9	98.9	96.1	96.7	94.3	93.9	93.7	95.9
Yes	1.1	1.1	3.9	3.3	5.7	6.1	6.3	4.1
Visited by FP worker last 12m								
No	98.9	98.1	92.2	91.9	83.7	84.5	69.2	81.8
Yes	1.1	1.9	7.8	8.1	16.3	15.5	30.8	18.2

Source: EDHS 2000-2016

4.4. Factors influencing unmet need for contraception among married women

Multivariable analysis was carried out to determine independent predictors of unmet need for family planning. Multinomial logistic regression is used to identify factors associated with unmet need for spacing and unmet need for limiting (the reference category is currently married women with no unmet need). Binary logistic regression analysis was used to determine risk factors for the total unmet need for FP.

Table 4.9 presents results from the multinomial binary logistic regression of unmet need for limiting vs. no unmet need and unmet need for spacing vs. no unmet need for currently married women. The data from the four consecutive EDHS was collated. The purpose of collation is the data from all EDHS was collated so as to follow the trends throughout the period considered for the survey and because the objective of the study was not to study for each year separately. The goodness of the model for the multinomial logistic regression was assessed by Deviance and Pearson Chi-square test (Table 4.7). The insignificant P-value ($P > 0.05$) of Deviance and Pearson shows that the model was good. The classification table (Table 4.8) shows that 65.4% of unmet need categories (unmet need for spacing, unmet need for limiting, and no unmet need) were correctly predicted by the model.

Results from the multinomial binary logistic regression show that the significant predictors of unmet need for spacing were: DHS survey year, a number of living children, the ideal number of children, women's current age, age at first marriage, current breastfeeding, heard about FP on the radio last months and place of residence.

Results from the multinomial logistic regression show that the significant predictors of unmet need for limiting were: DHS survey year, number of living children, number of children who have died, women's current age, age at first intercourse, the ideal number of children, currently breastfeeding, heard about FP on radio last months, watch about FP on TV last months and currently working.

The odds of unmet need for spacing was higher among women at a lower age than the highest age group15-19 compared to women at upper age group 45-49, currently, pregnant women compared to not pregnant, currently breastfeeding women compared to women not breastfeeding, women living in rural areas compared to those living in urban areas, women

not having media exposure (radio) about FP last month compared to women who have the exposure women in earliest DHS 2000 compared to women in the last DHS 2016, Women with late first marriage compared to those with early and women with a larger number of children (actual, ideal).

Table 4.9 also shows that the odds of unmet need for limiting was highest among married women at a lower age than highest age 45-49, currently breastfeeding than not breastfeeding, currently working than not working, not heard about FP on TV last month than heard and women in earliest DHS than in the last DHS 2016. Also, the odds of unmet need for limiting increases as the number of living children and the number of children who have died increases and as age at first intercourse and the ideal number of children decreases.

Table 4.7: Goodness of fit test for multinomial logistic regression

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	11318.047	11496	.880
Deviance	9163.596	11496	1.000

Table 4.8: Classification table for multinomial logistic regression

Classification

	Predicted			
Observed	No unmet need	Spacing	Limiting	Percent Correct
No unmet need	3658	56	63	96.8%
Spacing	1129	47	24	3.9%
Limiting	718	17	92	11.1%
Overall Percentage	94.8%	2.1%	3.1%	65.4%

Table 4.9: Results of Multinomial logistic regression on unmet need for FP among married women, Oromia region, EDHS 2000-2016

	Unmet need for Spacing Vs No unmet need				Unmet need for Limiting Vs No unmet need			
Unmet need fora	Exp(B)	95% Confidence Interval for Exp(B) Lower Bound	Upper Bound	Sig.	Exp(B)	95% Confidence Interval for Exp(B) Lower Bound	Upper Bound	Sig.
Age 5-year groups								
15-19	34.676	16.001	75.146	.000	3.083	1.528	6.220	.002
20-24	20.024	9.776	41.018	.000	2.251	1.282	3.951	.005
25-29	18.302	9.439	35.488	.000	2.287	1.439	3.634	.000
30-34	11.316	6.057	21.143	.000	2.321	1.575	3.421	.000
35-39	7.568	4.109	13.938	.000	2.278	1.618	3.206	.000
40-44	4.966	2.652	9.297	.000	2.145	1.551	2.968	.000
45-49	Ref.	.	.	.	Ref.	.	.	.

Partners age	.998	.988	1.007	.623	1.007	.997	1.018	.164
Highest educational level								
No education	1.212	.787	1.867	.382	1.021	.585	1.783	.941
Primary	1.448	.951	2.204	.085	1.171	.678	2.023	.571
Secondary and Higher	Ref.	.	.	.	Ref.	.	.	.
Partner's education level								
No education	.829	.632	1.088	.177	1.131	.793	1.614	.496
Primary	.954	.735	1.238	.721	1.075	.760	1.521	.683
Secondary and Higher	Ref.	.	.	.	Ref.	.	.	.
Religion								
Orthodox and Catholic	.985	.664	1.462	.942	1.595	.989	2.571	.055
Protestant	.966	.643	1.453	.870	1.101	.665	1.822	.708
Muslim	1.242	.848	1.820	.266	1.289	.804	2.067	.292
Traditional and Other	Ref.	.	.	.	Ref.	.	.	.
Respondent currently working								
No	.924	.798	1.071	.296	.806	.680	.955	.013
Yes	Ref.	.	.	.	Ref.	.	.	.
Type of place of residence								
Urban	.506	.357	.717	.000	1.140	.796	1.634	.475
Rural	Ref.	.	.	.	Ref.	.	.	.
Age at first marriage	1.046	1.020	1.072	.000	.989	.964	1.016	.435
Age at first intercourse	.999	.996	1.001	.287	.996	.994	.999	.003
No. of living children	1.194	1.132	1.259	.000	1.372	1.305	1.443	.000
No. of children who have died	1.036	.954	1.125	.400	1.158	1.080	1.241	.000
Ideal no. of children	.998	.996	1.000	.072	.996	.994	.999	.003
Currently breastfeeding								
No	.681	.585	.794	.000	.711	.593	.852	.000
Yes	Ref.	.	.	.	Ref.	.	.	.
Heard FP on radio last months								
No	1.207	1.013	1.438	.035	1.237	1.003	1.525	.047
Yes	Ref.	.	.	.	Ref.	.	.	.
Heard FP on TV last months								
No	1.259	.867	1.830	.226	1.714	1.064	2.762	.027
Yes	Ref.	.	.	.	Ref.	.	.	.
Visited by FP worker last 12m								
No	.863	.692	1.077	.192	1.262	.951	1.674	.108
Yes	Ref.	.	.	.	Ref.	.	.	.
Visited health facil. last 12m								
No	1.068	.925	1.233	.370	1.082	.911	1.285	.369
Yes	Ref.	.	.	.	Ref.	.	.	.
Year								
EDHS 2000	2.009	1.565	2.579	.000	1.893	1.415	2.533	.000
EDHS 2005	1.915	1.531	2.396	.000	2.240	1.731	2.899	.000
EDHS 2011	1.484	1.134	1.941	.004	1.339	.969	1.850	.077
EDHS 2016	Ref.	.	.	.	Ref.	.	.	.
Intercept				.000				.000

The goodness of the model for the binary logistic regression was assessed by Hosmer and Lemeshowtest (Table4.10). The insignificant P-value (P > 0.05) of the test shows that the model was good. The classification table (Table 4.11) shows that 66.5% of the total unmet need was correctly predicted by the model.

Table 4.10: Goodness of fit test for binary logistic regression

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	10.634	8	.223

Table 4.11: Classification table for binary logistic regression

Observed		Predicted		
		unmet need for family planning		
		No unmet need	Unmet need	Percentage Correct
unmet need for family planning	No unmet need	3385	391	89.6
	Unmet need	1553	474	23.4
Overall Percentage				66.5

The logistic regression results in table 4.12 show the crude ORs and adjusted ORs associated with the total unmet need for FP. Women's current age, highest educational level, place of residence, DHS survey year, number of living children, number of children who have died, the ideal number of children, age at first marriage, age at first intercourse, currently breastfeeding, heard about FP on the radio last months, heard about FP on TV last months and currently working was a significant predictor of total unmet need.

The odds of total unmet need was highest among married women at a lower age than highest age 45-49, primary education than no education, currently breastfeeding than not breastfeeding, living in rural than in urban, not hearing about FP on radio and TV last month than hearing, currently working than not working and women in earliest DHS than in the last DHS 2016. Also, the odds of total unmet need increases as the number of living children, age at first marriage, and the number of children who have died increases and as age at first intercourse and an ideal number of children decreases.

Table 4.12: Results of binary logistic regression analysis for total unmet need for FP among married women, Oromia region, EDHS 2000-2016

	COR	95% C.I.for EXP(B) Lower	Upper	Sig.	AOR	95% C.I.for EXP(B) Lower	Upper	Sig.
Age 5-year groups				.000				.000
15-19	2.320	1.746	3.084	.000	9.293	5.707	15.132	.000
20-24	1.880	1.467	2.408	.000	5.401	3.533	8.257	.000
25-29	2.243	1.764	2.851	.000	4.757	3.303	6.851	.000
30-34	2.214	1.729	2.836	.000	3.353	2.434	4.618	.000
35-39	2.339	1.814	3.016	.000	2.760	2.054	3.708	.000
40-44	2.291	1.746	3.008	.000	2.376	1.772	3.185	.000
45-49	Ref.				Ref.			
Partners age	.994	.990	.999	.014	1.001	.994	1.009	.737
Highest educational level								.030
No education	Ref.				Ref.			
Primary	.959	.842	1.092	.529	1.190	1.019	1.389	.028
Secondary and Higher	.414	.311	.551	.000	.859	.597	1.237	.415
Partner's education level								.550
No education	1.380	1.149	1.658	.001	.927	.732	1.173	.529
Primary	1.426	1.179	1.725	.000	.996	.793	1.250	.972
Secondary and Higher	Ref.				Ref.			
Religion								.048
Orthodox and Catholic	.956	.698	1.308	.777	1.205	.865	1.679	.271
Protestant	.820	.592	1.135	.231	1.013	.717	1.431	.942
Moslem	1.089	.801	1.479	.587	1.255	.908	1.736	.169
Traditional and Other	Ref.				Ref.			
Type of place of residence								
Urban	.436	.352	.540	.000	.724	.555	.944	.017
Rural	Ref.				Ref.			
Respondent currently working								
No	.987	.883	1.102	.812	.878	.777	.992	.037
Yes	Ref.				Ref.			
Age at first marriage	.965	.950	.981	.000	1.023	1.004	1.043	.019
Age at first intercourse	1.000	.999	1.001	.892	.998	.996	1.000	.017
Number of living children	1.121	1.096	1.146	.000	1.278	1.228	1.329	.000
Number of children who have died	1.028	.982	1.076	.234	1.099	1.037	1.164	.001
Ideal number of children	.999	.997	1.000	.103	.997	.995	.999	.003
Currently breastfeeding								
No	.502	.450	.560	.000	.704	.621	.800	.000
Yes	Ref.				Ref.			
Heard FP on radio last months								
No	1.385	1.219	1.572	.000	1.216	1.051	1.408	.009
Yes								
Heard FP on TV last months	Ref.				Ref.			
No	2.669	2.064	3.451	.000	1.412	1.035	1.926	.029
Yes	Ref.				Ref.			

Visited by FP worker last 12m								
No	1.226	1.036	1.451	.018	1.006	.833	1.215	.950
Yes	Ref.				Ref.			
Visited health facil. last 12m								
No	1.086	.972	1.213	.143	1.076	.954	1.214	.231
Yes	Ref.				Ref.			
Year								.000
EDHS 2000	1.621	1.387	1.894	.000	1.986	1.614	2.444	.000
EDHS 2005	1.806	1.541	2.117	.000	2.050	1.703	2.467	.000
EDHS 2011	1.135	.962	1.340	.132	1.445	1.154	1.809	.001
EDHS 2016	Ref.				Ref.			
Constant					.018			.000

4.5.Discussion

This study aimed to examine the trend of family planning practice, explain the changes in the level of unmet need for FP and to analyze the changes of demographic, socioeconomic, and institutional determinants of unmet need for FP among married women between EDHS 2000 - 2016 surveys in Oromia region. The finding of this study revealed that 38.7% (22.5% to space and 16.2% to limit), 41.3% (22.6% to space and 18.7% to limit), 30.7% (20.1% to space and 10.6% to limit), and 28.2% (16.9% to space and 11.3% to limit) of respondents had unmet need for family planning which was higher than the national 36% (22% to space and 14% to limit), 34% (20% to space and 14% to limit), 25% (16% to space and 9% to limit) and 22% (13% to space and 9% to limit) in survey year 2000, 2005, 2011 and 2016 respectively. Over these periods, unmet need for family planning declined by 10.4 percentage points from 38.7% in 2000 to 28.3% in 2016. Out of this, unmet need for spacing decreased from 22.5% in 2000 to 16.8% in 2016 and unmet need for limiting declined from 16.2% in 2000 to 11.2% in 2016.

In this study age of women were statistically significant determinant of unmet need for family planning. Women in the age group 15-19 was 9.3 times more likely to have unmet need of family planning than women in the age group 45-49. While women's in the age group 20-24 was 5.4 times more likely to have unmet need for family planning than women in the age group 45-49. As expected women in the age group 15-19 was 34.7 times more likely to have unmet need for spacing while it was only 3.1 times more likely to have unmet need for limiting than women in the age group 45-49. This is because women in the age group 45-49 most of the time have their ideal number of children so they want to limit rather than to space. Similarly a demographic health survey comparative reports in developing countries

by,(Macquarrie.K, 2014)DHS Further Analysis by (Placeholder1),national level survey by performance monitoring and accountability (PMA 2020) by (Afework, et al., 2019)reveals that unmet need to family planning was higher among younger women and also another cross sectional study in West Belessa District by (Mihret, 2015)found that among married women with 35 years and above were 70% less likely to have unmet need than women with 15–19 age group. The reason we found unmet need for family planning significantly higher among women of younger age groups might be due to lack of experience in marriage, fear of husband as majority of woman lives in rural area and lack of knowledge.

The study found that mothers living in urban residences were 27.6% less likely to have unmet need for family planning than mothers living in rural areas. Women living in urban residences were 49.4% less likely to have unmet need for spacing than mothers living in rural areas. The higher unmet need among women in rural areas could be explained by the fact that women in rural areas are more likely to be far from health facilities, less educated, have less access to mass media, and less aware of family planning than women in urban areas. The result was consistent with these two studies by (Arshad, et al., 2010)and (Assefa, et al., 2011) who found that both unmet need for spacing and limiting to be higher in rural areas.

The number of living children was a significant predictor of unmet need for family planning. As the number of children increases the odds of unmet need for family planning has increased. The odds of unmet need for family planning would be 1.26 times more likely as the number of children increased by one. When the number of children increases by one the odds of unmet need for spacing were 1.2 times more likely while it was 1.4 times more likely to have unmet need for limiting. Similarly, a national-level survey of PMA 2020 by (Afework, et al., 2019) reveals that as parity increase with one birth the odds of being unmet need for family planning were twice more likely and also another cross-sectional study in West Belessa District by (Mihret, 2015)revealed that, the odds of having unmet need for contraception increase as the number of living children increases. The increase in unmet need for an increase in living children may be due to a lack of finance and health aspect of the mother and the child. That is a mother needs to space orlimit after the birth of her last child for her recovery and better health of the child.

Also the ideal number of children was significant predictors of unmet need for family planning. As the number of ideal children increases the odds of having unmet need decreases. This study was consistent with a study done by Stephen A. and Martin E. in rural areas of

Burkina Faso in 2014 (Stephen, et al., 2014) who found that unmet need was higher among married women who claimed that the ideal number of children should be 1-2 than those who reported at least three children as an ideal number. This might be due to mothers who wish a small number of ideal children most of the time are in higher need of contraceptive to limit or space while a mother with a large number of ideal children have less need of contraceptive because of their need to have many children while they are fertile.

The number of children who have died was a significant predictor of unmet need for family planning. An increase in the number of children who have died shows an increase in the odds of having unmet need for family planning. The result was not consistent with a study done by Nzokirishaka A. and Itua I. using the 2010 Burundi Demographic and Health Survey in 2018 (Nzokirishaka, et al., 2018) which revealed that the experience of the loss of a girl child was found significantly associated with unmet need for limiting and that of a son with both unmet needs for limiting and total unmet need. The result shows that a woman who lost no girl was 27% less likely to have unmet need for limiting and a woman who lost no boy was 25% less likely to have unmet need for limiting. This might be due to mothers in the study area have many children and the loss of a child may not change their desire for limited spacing.

Our study reveals that women currently not working was 1.3% less likely to had unmet need for family planning than women currently working. Women currently not working were 19.4% less likely to had unmet need for limiting than women currently working. This finding was consistent with a cross-sectional study done in DebreBirhan town by (Solomon, et al., 2019) which reveals that a respondent whose occupation is employed was found to be 13.99 times more likely to had an unmet need for family planning compared with self-employed. But this finding was not consistent with a study done in Dangla by(Ewnetu, et al., 2015) that reveals women who are none employed found to be 6.81 times more likely to had unmet needs compared with respondents who was employed.

Age at first marriage and age at first intercourse were other significant predictors of unmet need for family planning. As the age at first intercourse increases by one, the woman was 0.2% less likely to have unmet need for family planning. In this study as age at first marriage increases the odds of unmet need for family planning and unmet need for spacing increases. This result was in contrary with DHS Further Analysis by (Ayele, et al., 2013)who report early marriage is inversely associated with the unmet need to limit and space births and a cross-sectional study age at first marriage (AOR=2.11, 95% CI: 1.28-3.50) Gonji Kola

District by (Biadgie, et al., 2019) where women married before 18 years were more likely to have unmet need for FP.

This study also revealed that exposure to media (radio and TV) was significant predictors of unmet need for family planning. Women who were not heard about family planning on the radio were 1.22 times more likely to have unmet need for family planning than women who heard about family planning on the radio. Similarly, women who were not heard about family planning on TV were 1.4 times more likely to have unmet need for family planning than women who heard about family planning on TV. The result was consistent with other studied by (Assefa, et al., 2011)and (Ojakaa, 2008) where women who had no access to mass media (radio, television, and newspaper) had a higher level of unmet need for spacing and limiting births compared to those who had exposure to mass media.

Women who were not currently breastfeeding were 29.6% less likely to have unmet need for family planning than women currently breastfeeding. Women who were not currently breastfeeding were 32% less likely to have unmet need for spacing and 40.7% less likely to have unmet need for limiting than women currently breastfeeding. This may be due to currently breastfeeding mothers most of the time wants to space between current child and next child or they may want to limit and less perceived risk of pregnancy due to breastfeeding.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

The aim of this study was to examine the trend of family planning practice, explain the changes in the level of unmet need for FP, and to analyze the changes of demographic, socioeconomic, and institutional determinants of unmet need for FP among married women between EDHS 2000 - 2016 surveys in Oromia region. The study reveals that there was a high prevalence of unmet need in the study area 38.7%, 41.3%, 30.7%, and 28.3% in the survey year 2000, 2005, 2011, and 2016 respectively which in general was declining.

The major reasons for not using contraception were the women wanting more children, religious prohibition, fear side effects, respondent and husband opposition, and the woman was Sub-fecund or infecund. The most currently used and preferred future method of contraception was pills and injection.

There was a different practice in urban and rural residents in unmet need for family planning. The level of unmet need in rural residents was higher than that of rural residents. The study found that mothers living in urban residences were less likely to have unmet need for family planning than mothers living in rural areas.

Exposure to media was a determinant of unmet need for family planning. Those women who have exposure to family planning messages from radio and/or TV were less likely to have unmet need for family planning than women with no exposure.

In this study, a smaller number of living children was associated with a low level of unmet need. As the number of living children increases the odds of unmet need also increases. From the finding, it can be said that frequent childbirth and risks associated with them may motivate the women to think either to space between or limit childbirth at all.

The study also identifies age, education, current working status, number of children who have died, the ideal number of children, age at first marriage, age at first intercourse, and current breastfeeding status as determinants of family planning.

The decline in unmet met need show that family planning program in Oromia in the study period was successful. Because the level of unmet need for family planning was much higher than the national level still much should be done to further decrease the level. This study focuses on the whole Oromia region and didn't identify the level of unmet need for specific zones and cities in the region, therefore, further study are required in this regard.

5.2.Recommendation

Based on the findings of the study, the following recommendations are forwarded

The level of unmet need in rural residents was higher than that of urban residents. Therefore the government should expand access to family planning services in rural areas.

Younger women in the age group 15-19 and 20-24 tend to exhibit higher unmet need than women who are in the upper ages of reproductive life. Unmet need is also found to be high among women who have large number of children. As a result family planning programmes and reproductive health strategies should give due to attention on such groups of women to address their demand apart from dealing with other groups of women.

Different reasons like fear of side effects, respondent and husband opposition, religious prohibition, women wanting more children and etc were mentioned as major factors for not currently using contraception among women with unmet needs. Thus, attention should be given in family planning programs to deal with such social issues by educating the women about the advantage of contraception and by encouraging religious leaders in the study area to stop preaching to their followers that contraceptives are bad.

There was a significant difference in unmet need for family planning between women who have family planning messages through radio and TV and those who don’t have. Therefore, the government should increase family planning messages delivered on radio and TV and the government should find a mechanism to reach those women in rural areas with no access to radio and TV. And also family planning education should be delivered to the women through health extension workers at their home and at health facility by health facility workers during ANC, PNC, delivery, and immunization.

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