Levels and Trends in Unmet Need for Family Planning among Adolescents and Young Women in Ethiopia

Further Analysis of the 2000, 2005, and 2011 Demographic and Health Surveys

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This report is an analysis of the levels and trends in unmet need for family planning among adolescents and young women in Ethiopia using data from the 2000, 2005, and 2011 Ethiopia Demographic and Health Surveys (EDHS). The EDHS surveys were carried out under the aegis of the Ministry of Health and were implemented by the Central Statistical Agency (CSA). ICF International provided technical assistance as well as funding through the MEASURE DHS project, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide. Funding for the 2011 EDHS was provided by the government of Ethiopia and various international donor organizations and governments: the United States Agency for International Development (USAID), the HIV/AIDS Prevention and Control Office (HAPCO), the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the United Kingdom Department for International Development (DFID), and the United States Centers for Disease Control and Prevention (CDC). The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the donor organizations.

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ABSTRACT

Background: The population of Ethiopia is very young, with a median age of approximately 17.1 years, according to the 2007 Population and Housing Census of Ethiopia. Young people age 15-24 represented about 14 percent of the population, according to the 1984 Population and Housing Census, but by the time of the 2007 Population and Housing Census, this percentage had grown to 20 percent. In 1984 adolescent women accounted for about one-fifth of all women of reproductive age (age15-49); by 2007, they accounted for 25 percent. Similarly, the share of young women (age 20-24) among all women of reproductive age (age 15-49) increased from 17 percent in 1984 to 19 percent in 2007.

The 2011 Ethiopia Demographic and Health Survey (EDHS) reports that approximately a quarter of all pregnant young women age 15-24 feel that their pregnancies are mistimed or unwanted. Studies show that complications related to pregnancy and childbirth are among the leading causes of death worldwide for adolescent girls age 15-19. In Ethiopia, where early marriage and early sexual activity in marriage are prevalent, family planning gives couples the ability to limit the number and spacing of their children, potentially lowering the death rate for women in this age group.

Methods: Levels and trends in unmet need for family planning were examined, and results were compared for women age 15-24 and age 25-49. Pooled data from 2000, 2005, and 2011 EDHS surveys were used to conduct multinomial logistic regression analysis of factors associated with unmet need (for spacing and limiting) versus met need among currently married women age 15-24 and age 25-49. The study sample consisted of 7,170 women age 15-24 and 20, 773 women age 25-49.

Results: The analysis shows that unmet need for family planning has decreased over time as contraceptive use has risen. From 2000 to 2011, unmet need for spacing among currently married women age 15-19 dropped from 37 percent to 32 percent; among women age 20-24, unmet need dropped from 39 percent to 22 percent; and, among women age 25-49, unmet need fell from 36 percent to 26 percent. Multivariate analysis indicates that women in rural areas (age groups 15-24 and 25-49) show high levels of unmet need compared with women in urban areas. A significant decline in unmet need (both for spacing and for limiting) was observed in 2011 for both cohorts (age groups 15-24 and 25-49). Among women age 25-49, religion, a visit by a family planning worker, a visit to a health facility, exposure to family planning from media, and an educational difference between a husband and wife were significant predictors of unmet need for spacing. Rural residence, education, religion, and exposure to mass media family planning messages were significant predictors of unmet need for limiting. Among women age 15-24, rural residence, secondary or higher level of education, and a husband with more education than his wife were significant predictors of unmet need for spacing. Educational attainment up to the primary level, religion, and exposure to mass media family planning messages were significant predictors of unmet need for limiting.

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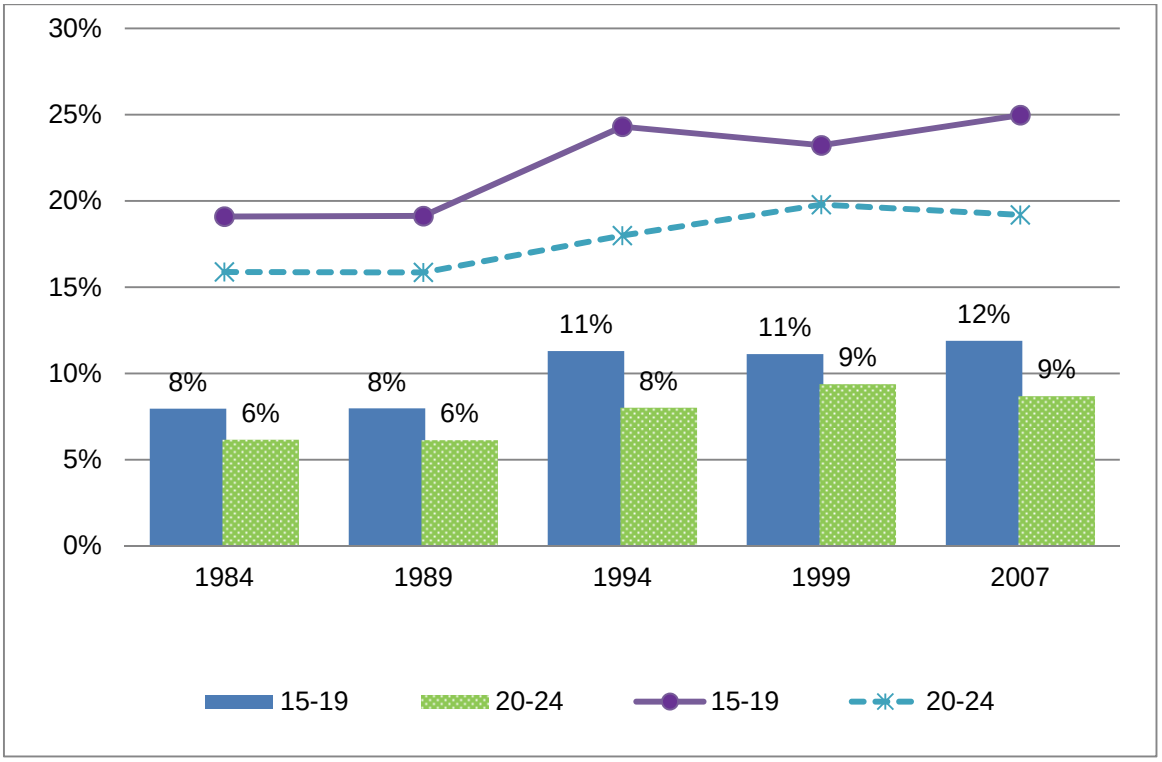
1. BACKGROUND

Ethiopia is the second most populous country in sub-Saharan Africa, with about 80 million people and a population growth rate of approximately 2.6 percent (CSA, 2008; UN, 2010). The population is very young, with a median age of approximately 17.1 years, according to the 2007 Population and Housing Census. The 1984 Population and Housing Census showed that youth age 15-24 represented about 14 percent of the population. This age group increased in size to approximately 20 percent in 2007. There are two possible consequences of a young population age structure: (1) current rapid population growth resulting from high fertility and a large annual increase in the number of women in their reproductive years and (2) a continuous increase in the number of women of childbearing age who will eventually give birth to girls who survive to puberty and beyond.

Figure 1 presents trends in the percentage of young women 15-24 in the overall population and in the percentage of women of reproductive age (15-49). The proportion of adolescent women (15-19) among all women of reproductive age (15-49) has increased substantially in the last two decades. In 1984 adolescent women accounted for about one-fifth of all women of reproductive age (15-49); this increased to one quarter, or 25 percent, in 2007. Similarly, the share of young women (20-24) among all women of reproductive age (15-49) increased from 17 percent in 1984 to 19 percent in 2007.

Figure 1 **Percentage of young people in the overall population (bar graph) and percentage of young women of reproductive age (line graph)**



Sources: 1984, 1994, and 2007 Population and Housing Censuses of Ethiopia, Central Statistical Agency (CSA) & UN Demographic Year Books

Adolescent and young women (age 15-24) constitute nearly one-fifth of the total population in Ethiopia, implying a need for accelerated reproductive health services. The major reproductive health problems faced by young people are gender inequality, early marriage, abduction, harmful traditional practices (such as female genital cutting), unwanted and closely spaced pregnancies, unsafe abortions, and STIs.

Lack of access to family planning and reproductive health services for young people contributes to many reproductive health problems, such as unwanted and closely spaced pregnancies, complications during delivery, maternal mortality and morbidity, unsafe abortions, and STIs. Approximately, a quarter of all pregnant adolescent and young women (age15-24) feel that their pregnancies are mistimed or unwanted (EDHS, 2011). In addition, complications relating to pregnancy and childbirth are among the leading causes of death worldwide for adolescent girls between age 15 and 19. One study showed that girls who give birth before age 16 are three to four times more likely to suffer maternal death than women in their twenties (Conde-Agudelo et al., 2005). Similarly, births to women age 15-19 have the highest risk of infant and child mortality (WHO, 2008; World Bank, 2001). Research shows that infants born to teenage mothers are 50 percent more likely to die in the first week of life than those born to mothers age 20 to 29 (WHO, 2008).

In sub-Saharan Africa, 33 percent of married adolescent women want to avoid a birth in the next two years, but 67 percent are not currently using any contraceptive method (IPPF, 2010). Although contraceptive use of adolescents is substantially less than that of all women of reproductive age, adolescent women have similar levels of unmet need. As a result, the percentage of adolescents who have their demand for contraception satisfied is much lower than that of all women age 15 to 49 (UN, 2011). The 2011 MDG Report noted that the progress in improving access to reproductive health care for adolescents is not satisfactory.

The government of Ethiopia has embarked on a new Health Sector Development Program IV (HSDP IV) for 2011 to 2015, which includes new and updated strategic approaches for HIV/AIDS, tuberculosis, malaria, maternal and child health (MCH)/family planning (FP), infectious diseases, noninfectious diseases, mental health, and health system strengthening. The Federal Ministry of Health has formulated and implemented a number of policies and strategies that provide an effective framework for improving health in the country. Among these are Making Pregnancy Safer (2000), the Reproductive Health Strategy (2006), the Adolescent and Youth Reproductive Health Strategy (2006), the Revised Abortion Law (2005), the policy on free service for key maternal and child health services, and introduction of critical new members of the health workforce, such as health extension workers. In particular, the national Adolescent and Youth Reproductive Health Strategy aims to enhance reproductive health and well-being among young people in Ethiopia age 10-24. The strategy envisions that young people will access and fully utilize reproductive health information and services to make voluntary informed choices over their reproductive health.

Use of contraception gives couples the ability to limit the number and spacing of their children. In addition, unintended pregnancies, abortions, illnesses, and deaths related to pregnancy and childbirth can be prevented. In particular, there are greater health benefits and opportunities for adolescents and young women. In Ethiopia, among currently married adolescent women and young women, 23 percent and 35 percent, respectively, use contraceptive methods (EDHS, 2011). In comparison, only 28 percent of currently married adult women (age 25-49) use contraceptive methods. Adolescent and young women have limited access to family planning and reproductive health information. A study by Ringheim and Gribble (2010) reported that married adolescents want to delay, space, or limit their births more often than older married adult women. However, success in avoiding unwanted or mistimed pregnancy often depends on having access to contraceptive information, methods, and services.

The focus of this study is to examine levels and trends of unmet need for family planning to space and/or limit childbirth among adolescents (15-19), young women (20-24), and adult women (25-49) who

are currently in union in Ethiopia and to identify factors associated with unmet need using the revised definition of unmet need for family planning (Bradley et al., 2012). In addition, the study investigates contraceptive prevalence and reasons for nonuse of contraception among adolescents (15-19), young women (20-24), and adult women (25-49). The study analyzes data collected from three Ethiopian DHS surveys conducted over a period of ten years from 2000 to 2011. Findings from this study may be used by policy makers to develop specific responses to issues of unmet need for family planning, to devise strategies to increase family planning coverage among adolescents and young women, and to evaluate the efficiency and effectiveness of national family planning programs.

2. DATA AND METHODS

The study uses data from three consecutive Ethiopia Demographic and Health Surveys (EDHS) conducted in 2000, 2005, and 2011. These surveys collected data from nationally representative samples of households and from women age 15-49 and men age 15-59 in the sampled households. The DHS surveys use a two-stage sampling design and a set of core questionnaires to gather a wide range of information on reproductive health, child nutrition, and related issues. In this study, the samples were weighted to create nationally representative estimates of indicators. The descriptive tables that examine levels and trends are based on weighted numbers. Details of sample design, including sample framework and implementation, are provided in the EDHS survey reports (www.measuredhs.com).

For this study, the terms *adolescents* and *young women* refer to young people age 15-19 and age 20-24, respectively. The term *youth* refers to individuals age 15-24. The term *adult women* refers to women age 25-49.

The 2000 EDHS survey covered a nationally representative sample of 15,367 women age 15-49, of whom 24.1 percent were age 15-19 and 18.6 percent were age 20-24. In the 2005 EDHS, 14,070 women age 15-49 were interviewed; 23.2 percent were age 15-19, and 18.1 percent were age 20-24. The 2011 EDHS interviewed 16,515 women age 15-49, of whom 24.3 percent were age 15-19 and 17.8 percent were age 20-24. Levels and trends of unmet need for adolescent and young women are compared with those for women age 25-49. In some cases, samples for adolescents and young women are combined and compared with those for women age 25-49. Differentials in unmet need by demographic and socioeconomic characteristics of women are also investigated. Further, in addition to using descriptive and bivariate analysis, the effect of each demographic and socioeconomic variable on the need for family planning is examined using multinomial logistic regression. The multivariate analysis examines factors associated with total unmet need and its two components (spacing and limiting) for all women and for currently married women. The three sets of DHS data are pooled for multivariate analysis. Results of these models are presented as relative-risk ratios (RRR) with 95 percent confidence interval.

2.1 Unmet Need

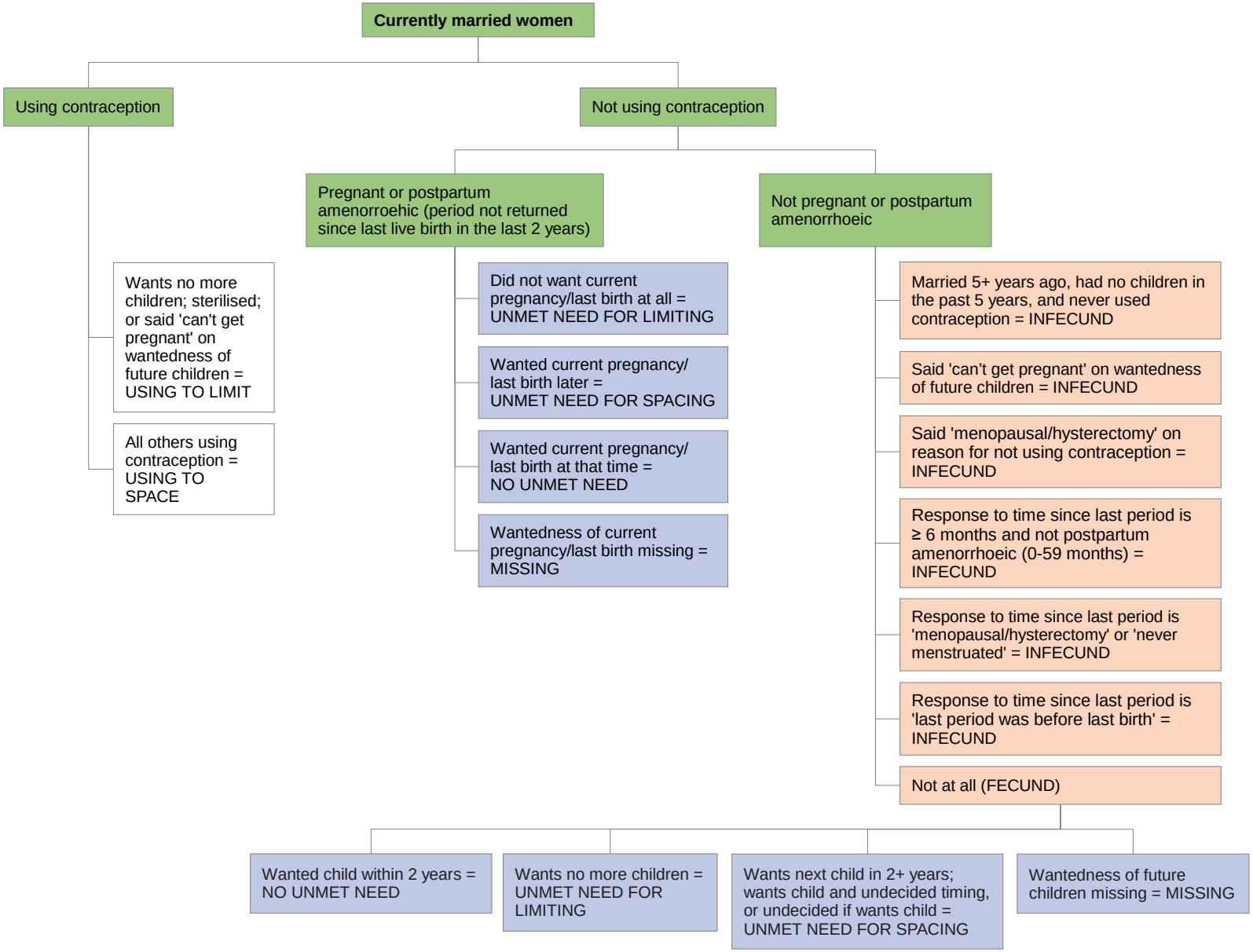
Unmet need for contraception measures the proportion of currently married women who (1) do not want any more children but are not using any form of family planning, or (2) want to postpone their next birth for two years but are not using any form of family planning. Unmet need for contraception, one of several indicators used to monitor family planning programs, was added as one of the Millennium Development Goals (MDGs) in 2008.

The concept of unmet need evolved as a result of the gap in contraceptive knowledge, attitudes, and practices (KAP). KAP surveys conducted in the 1960s showed a gap between some women's reproductive intentions and their contraceptive behaviours (Robey et al., 1996). The formulation of the concept and its calculation have been under continuous revision (Bogue, 1974; Westoff and Pebely, 1981; Nortman, 1982; Westoff, 1988; Bongaarts 1991; Westoff and Ochoa, 1991; Westoff and Bankole, 1995; Westoff and Bankole, 1996; and Bradley et al., 2012).

In 2012 a revised definition of unmet need (Figure 2) that can be consistently applied over time and across countries was developed by the DHS (Bradley et al., 2012). Some changes implemented in the revised method (algorithm to calculate unmet need) are removing calendar data from the calculation; removing data based on 'happy' and 'problem' survey questions; simplifying classification of unmet need for spacing versus unmet need for limiting; shortening the duration for which women are considered to be postpartum amenorrhoeic (only two years); standardizing the calculation of infecundity; restricting the use of the infecundity condition; and using data on hysterectomy and menopause from the survey question on reasons for currently using a method rather than from a question on reasons for not intending to use a method in the future.

Among the recommended changes, the largest impact on estimated levels of unmet need relates to use of data from the contraceptive calendar in the unmet need algorithm.

Figure 2 **Revised definition of unmet need for currently married women**



Women with unmet need for spacing are those who are not currently using a method of contraception, not currently pregnant or amenorrhoeic, are able to bear a child (fecund) and want to delay the next birth for two or more years, not currently using a method, are pregnant, or amenorrheic, or had a current pregnancy/last birth that was mistimed and want to delay the next birth.

Women with unmet need for limiting are those who are not currently using a method of contraception, not currently pregnant or amenorrhoeic, able to bear a child (fecund) but want to stop childbearing, not using a method of contraception but are pregnant or amenorrhoeic, and have an unwanted pregnancy and want no more children. Total unmet need refers to the sum of unmet need for spacing and for limiting. Total demand for family planning is the sum of total unmet need and total current contraceptive use (‘met need’). Percentage of total demand satisfied is calculated by dividing the total current use by the total demand.

3. RESULTS

3.1 Characteristics of the Study Population

Table 1 presents the distribution of the study population by selected background characteristics in 2000, 2005, and 2011. The proportions of adolescents and young women who were in union (married or living together) declined from 2000 to 2011. However, the proportion of adult women (age 25-49) in union did not change over the three surveys. In addition, there is evidence of a decline in fertility rates among adolescent and young women from 2000 to 2011 (EDHS, 2011).

There was a significant increase in the proportion of adolescents and young women who received primary education from 2000 to 2011. For instance, in 2011 about three times as many adolescent women received primary education as the same cohort in 2000. Similarly, the proportion of young women with primary education more than doubled in 2011 compared with 2000. In 2011, nearly eight in ten adolescent women (77 percent) read a newspaper, listened to the radio, or watched television at least once per week compared with only 42 percent in 2000. Overall, the proportion of adult women with media exposure doubled in 2011 compared with 2000. There is evidence of no significant increase in the proportion of women visiting health facilities across the three surveys. Overall, the proportion of women age 15-49 residing in urban areas has slightly increased in the 2011 EDHS.

Table 1 Distribution of adolescents, young women, and adult women of reproductive age, by selected background characteristics, Ethiopia 2000-2011

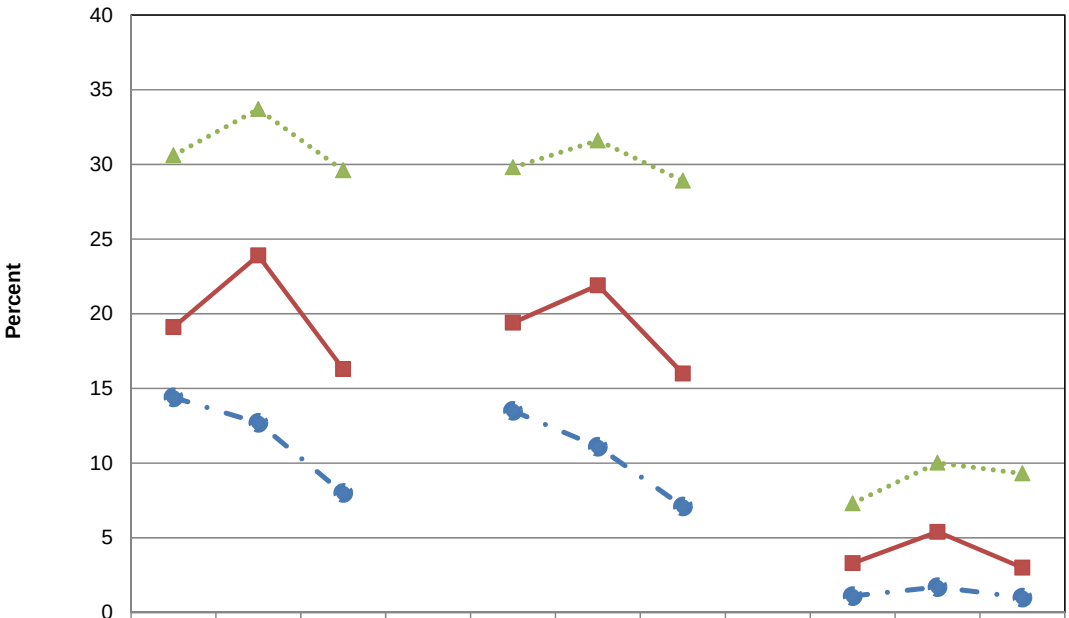
	15-19			20-24			25-29		
	DHS 2000	DHS 2005	DHS 2011	DHS 2000	DHS 2005	DHS 2011	DHS 2000	DHS 2005	DHS 2011
Marital status									
Never married	70.0	73.3	77.0	26.9	30.3	31.9	3.7	4.2	4.7
Currently married	23.2	21.8	19.1	63.2	61.8	60.1	80.9	82.1	81.1
Formerly married	6.8	4.9	3.9	9.9	8.0	8.0	15.4	13.6	14.3
Residence									
Urban	22.0	21.5	26.0	19.0	21.2	28.5	16.3	15.2	21.6
Rural	78.0	78.5	74.0	81.0	78.9	71.5	83.7	84.8	78.4
Region									
Tigray	6.3	7.0	7.3	5.5	6.2	6.8	6.6	6.4	6.4
Affar	0.9	0.9	0.8	1.1	0.9	1.0	1.3	1.1	0.9
Amhara	22.7	24.8	28.0	22.6	22.8	26.1	26.5	25.3	26.6
Oromiya	43.0	36.9	37.1	41.3	36.3	35.6	36.0	34.9	36.3
Somali	1.2	2.4	1.7	0.9	3.0	1.8	1.2	4.0	2.2
Benshangul-Gumuz	1.1	0.8	1.0	1.0	1.0	1.1	1.0	0.9	1.1
SNNP	18.6	20.0	17.7	21.8	21.4	19.3	22.4	21.8	20.5
Gambela	0.2	0.2	0.5	0.3	0.4	0.6	0.3	0.3	0.4
Harari	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Addis	5.4	6.1	5.2	4.8	7.2	6.9	4.0	4.5	5.0
Dire Dawa	0.5	0.5	0.4	0.6	0.5	0.4	0.5	0.5	0.4
Education level									
No education	61.0	40.1	17.3	70.5	60.2	38.0	82.7	77.9	68.8
Primary	26.3	43.6	70.2	17.3	22.5	40.1	10.8	13.7	23.9
Secondary and higher	12.6	16.4	12.5	12.2	17.3	21.9	6.5	8.5	7.3
Religion									
Orthodox Christian	50.7	52.2	50.5	47.6	49.2	48.0	51.4	48.0	46.2
Other Christians (Catholic + Protestant)	16.4	19.9	21.7	18.3	20.8	23.6	16.8	19.9	23.6
Moslem	29.6	26.3	26.9	30.7	28.0	26.6	28.2	29.5	28.6
Traditional + Other	3.3	1.6	0.9	3.4	2.0	1.8	3.6	2.5	1.7
Exposure to Media									
(Radio, TV, newspaper) at least once a week	42.3	57.5	76.6	38.6	51.0	71.2	29.3	40.4	63.3
Visit to Health Facility									
Visited at least once in last 12 month	19.9	15.0	17.4	39.3	28.1	37.9	42.0	27.5	37.8
Number of women	3,584	2,844	8,939	3,252	2,617	8,201	3,835	3,022	9,685

3.2 Age at First Marriage, First Sexual Debut, and First Birth

Early marriage and early childbearing are common in Ethiopia. Entry into first marriage is one of the key milestones influencing the reproductive health of adolescents and marks the point in a woman's life when childbearing becomes socially acceptable. Early marriage and early sexual activity within marriage present reproductive health risks for young women. The adverse outcomes of early marriage and sexual activity are not just health-related. They also curtail educational and employment aspirations of young women.

Figure 3 presents trends in the proportion of women married before age 15, women sexually active before age 15, and women with first birth before age 15, according to current age. The 2011 survey indicates only 8 percent of adolescent women were married or in union by age 15, only 7 percent had sexual activity before age 15, and only 1 percent had a birth before age 15. A decrease over time is observed in the proportion of adolescent women married or starting sexual activity by age 15. Similar trends are observed for young women (age 20-24). The trends suggest that age at first marriage is rising in Ethiopia. In particular, the data show that a higher proportion of women age 25-49 had married or had initiated sexual intercourse before exact age 15 compared with adolescent and young women.

Figure 3 **Percentage of women who were first married, had first sexual intercourse, and had first birth at age 15, Ethiopia 2000-2011**

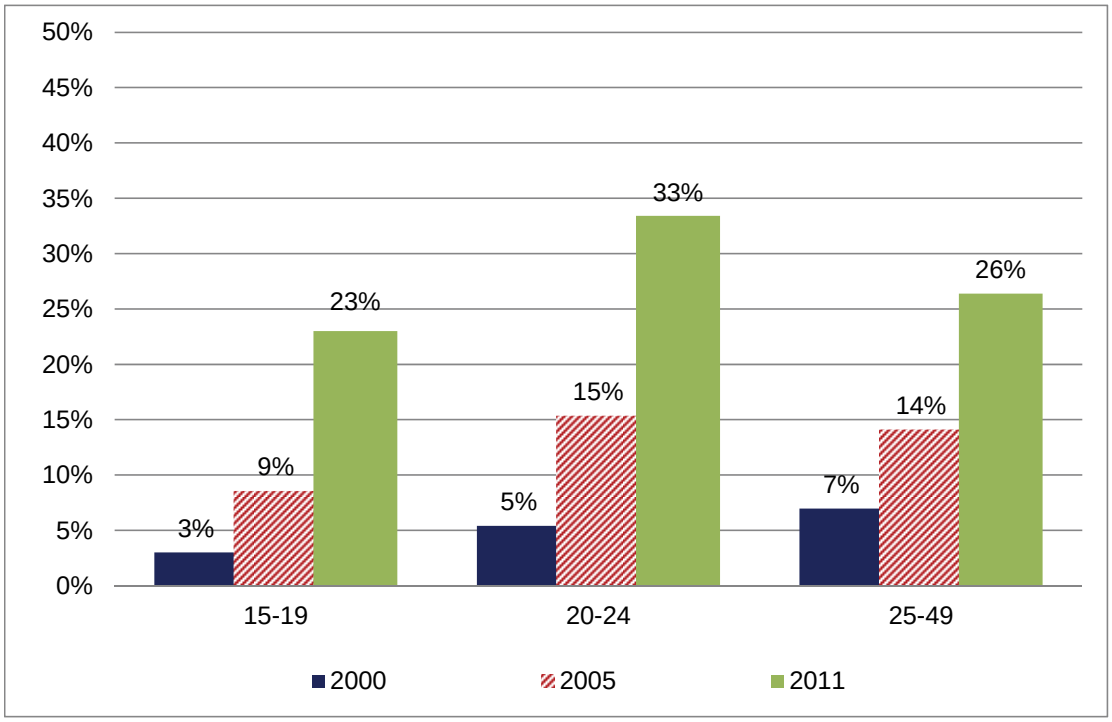


	First marriage at age 15			First sexual intercourse at age 15			First birth at age 15		
	2000	2005	2011	2000	2005	2011	2000	2005	2011
15-19	14.4	12.7	8.0	13.5	11.1	7.1	1.1	1.7	1.0
20-24	19.1	23.9	16.3	19.4	21.9	16.0	3.3	5.4	3.0
25-49	30.6	33.7	29.6	29.8	31.6	28.9	7.3	10.0	9.3

3.3 Contraceptive Use

The percentage of married women currently using a modern method of contraception has increased substantially over the past decade. The contraceptive prevalence rate for adolescent women increased from 3 percent in 2000 to 23 percent in 2011. Young women showed the most significant increase in contraceptive use over the last decade compared with adolescents and adult women, increasing from 5 percent to 33 percent. In addition, the current level of contraceptive use by young women in union exceeds that for women age 25-49 (Figure 4). However, current use of modern methods has generally increased more rapidly among adolescent women than among young women or adult women.

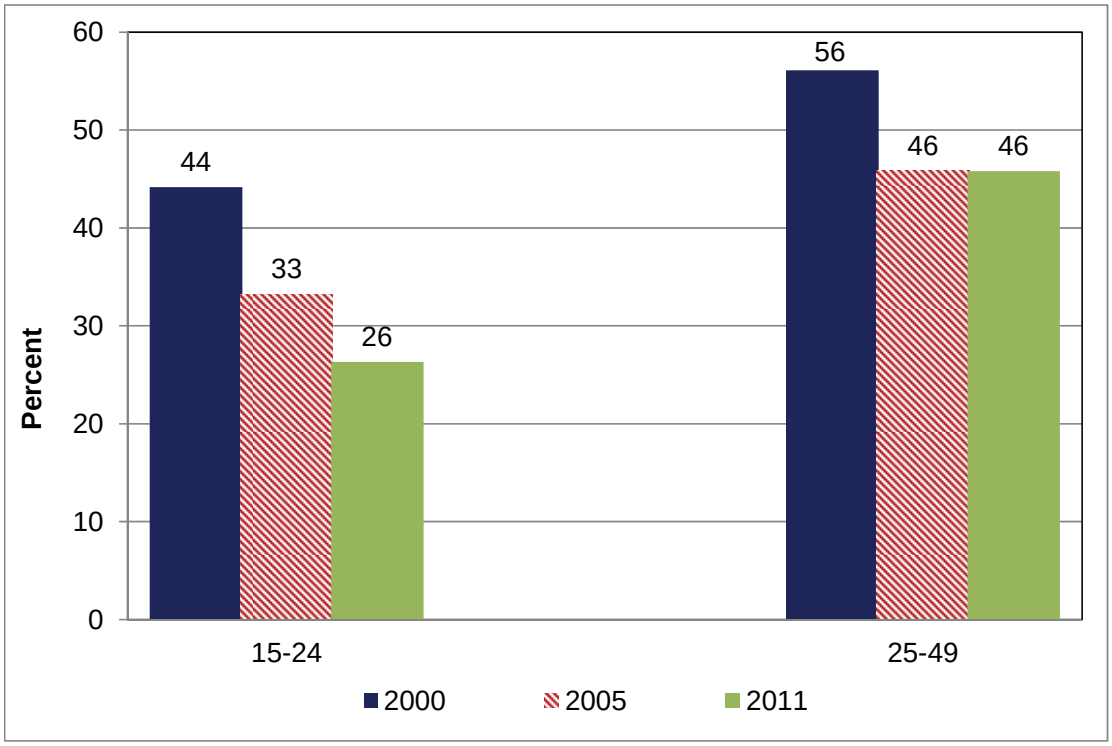
Figure 4 **Current use of modern contraceptive methods among currently married women, Ethiopia 2000-2011**



3.4 Intention to Use Contraception in the Future and Reasons for Not Using

Knowledge of respondents' intent to use contraception and respondents' reasons not to use contraception in the future have important implications for family planning programs. Figure 5 presents the trend in the proportion of currently married women age 15-24 and age 25-49 who are not using a contraceptive method and who do not intend to use one in the future. In 2000, more than half (56 percent) of married adult nonusers (age 25-49) and 44 percent of young female nonusers said they did not intend to use family planning in the future. The proportion of young women who do not intend to use contraception in the future decreased by nearly 40 percent in the last decade, dropping from 44 percent in 2000 to 26 percent in 2011. The trend shows a decline in the percentage of currently married young nonusers who do not intend to use family planning in the future.

Figure 5 **Percent distribution of currently married women age 15-24 and age 25-49 who are not using a contraceptive method and do not intend to use one in the future, Ethiopia 2000- 2011**



There could be many reasons that prohibit women from using contraceptives. Understanding the reasons why nonusers do not intend to use contraception in the future is important for family planning programs. Female youth age 15-24 and adult women age 25-49 who are not using contraception and who do not intend to use in the future reported their reasons for nonuse (see Table 2). In 2005, compared with adult women (age 25-49) a higher proportion of youth reported opposition to the use of contraception for personal reasons or husband's objections and for lack of knowledge as the reasons for not intending to use family planning in the future. However, a larger percentage of female youth and adult women reported religious prohibition as the main reason for not intending to use family planning in the future. In contrast, a significant proportion of the adult women reported fertility-related reasons as the main reason for not intending to use contraceptive methods in the future. About 14 percent of female youth and 15 percent of adult women indicated method-related reasons as their main reason for not intending to use contraceptive methods in the future.

Table 2 Percent of currently married women who are not using contraception and who do not intend to use in the future, by main reason for not intending to use, Ethiopia 2005

Reasons for not using in the future	15-24	25-49
Fertility-related reasons	24.9	36.1
Infrequent sex/no sex	0.3	3.8
Menopausal/had hysterectomy	--	8.4
Subfecund/infecund	0.3	6.4
Wants as many children as possible	24.3	17.5
Opposition to use	29.5	23.9
Respondent opposed	7.7	5.4
Husband/partner opposed	7.1	3.7
Others opposed	0.4	0.1
Religious prohibition	14.3	14.7
Lack of knowledge	16.9	10.6
Knows no method	13.1	8.1
Knows no source	3.8	2.5
Method-related reasons	14.0	14.7
Health concerns	8.9	11.3
Fear of side effects	3.9	2.4
Lack of access/too far	0.1	0.2
Costs too much	--	0.2
Inconvenient to use	0.5	0.1
Interferes with body's normal processes	0.5	0.1
Method not available	0.1	0.4
Other	11.1	11.9
Don't know/missing	3.8	3.0
Total	100.0	100.0
Number of women	752	2,702

-- not available

3.5 Trends in Unmet Need for Family Planning Among Adolescent, Young, and Adult Women

Figure 6 shows the level of and trends in unmet need for family planning among adolescent, young, and adult women currently in union.

The level of unmet need among adolescent, young, and adult women currently in union has changed in the past decade. The trend represented in the figure shows unmet need for family planning declining in all age groups. For adolescents and young women in union, unmet need for spacing was substantially higher than unmet need for limiting. For instance, unmet need among adolescents was 32.1 percent for spacing and 5.6 percent for limiting in 2000 but dropped to 30.3 percent for spacing and 2.4 percent for limiting in 2011. In contrast, there was almost no difference between unmet need for limiting and spacing for adult women age 25-49 across the three surveys (Figure 6). It is evident that adolescents have a higher level of unmet need for spacing compared with the other two groups of young women and adult women.

Figure 6 **Unmet need for family planning among adolescent, young, and adult women currently in union, Ethiopia 2000- 2011**

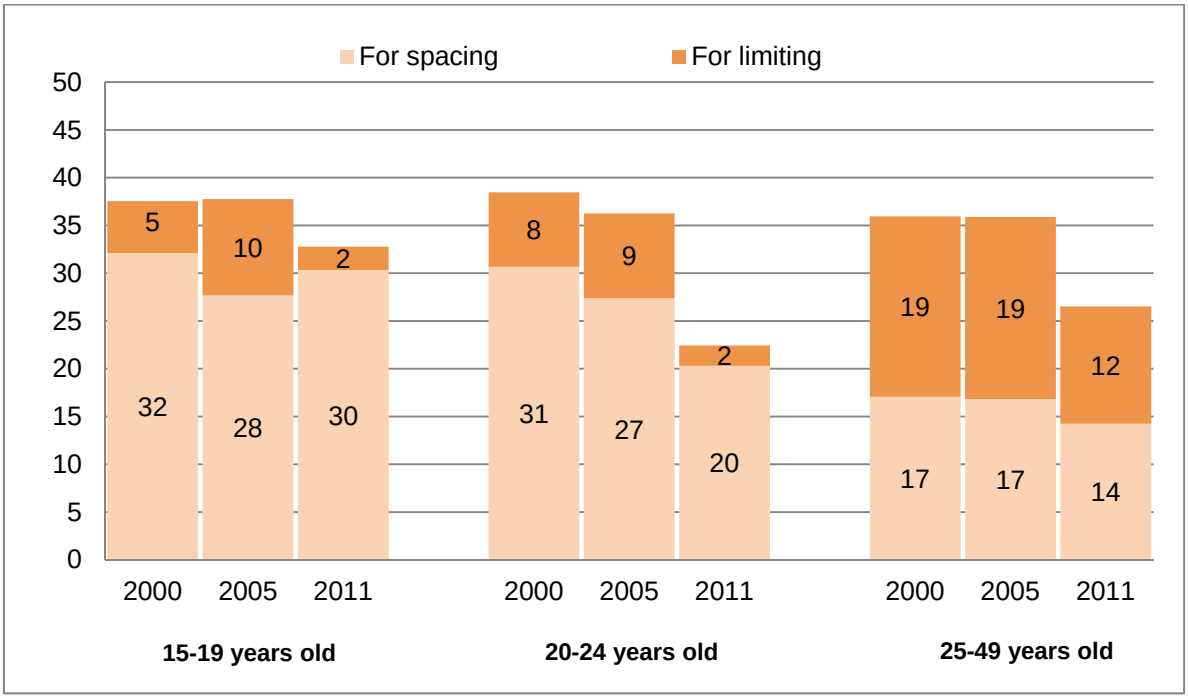


Table 3 presents trends in unmet need, contraceptive use, and total demand for family planning for currently married adolescents, young women, and adult women. In all three surveys, contraceptive use for spacing was higher than for limiting births among adolescents and young women, except among adult women age 25-49. Table 3 shows that, among adult women, current contraceptive use and unmet need increased more for limiting than for spacing between 2000 and 2011, an indication that a growing percentage of adult women do not want to have any more children. Overall, unmet need and current use of contraception for spacing among currently married women age 15-24 were higher than for women age 25-49. In contrast, unmet need and current use for limiting were about twice as high for women age 25-49 as for women age 15-24.

The total demand for family planning is the sum of the percentage of currently married women using contraception and the percentage with an unmet need. The findings in Table 3 show that total demand for family planning increased for currently married women. For instance, for adolescents the total demand increased from 41 percent in 2000 to 57 percent in 2011 and for young women age 20-24 the demand increased from 46 percent in 2000 to 57 percent in 2011.

The percentage of total demand satisfied is calculated as the ratio of the percent of current use for contraception to the total demand. This indicator helps to assess overall levels of coverage for family planning programs. In Table 3, the percentage of total demand satisfied increased between 2000 and 2011 for all women in union (adolescents, young women, and adult women). The percentage of total demand satisfied for adolescents and young women increased nearly four-fold from 2000 to 2011 (from 9 percent to 42 percent for adolescents and from 16 percent to 61 percent for young women, respectively).

Table 3 Unmet need, contraceptive use, and total demand for family planning for currently married adolescent, young, and adult women, Ethiopia 2000-2011

		Unmet need			Current use				
DHS year	Age group	For spacing	For limiting	Total	For spacing	For limiting	Total	Total demand	Demand satisfied
2000	15-19	32.1	5.4	37.5	3.3	0.6	3.9	41.4	9.4
	20-24	30.7	7.8	38.5	6.2	1.3	7.5	45.9	16.2
	25-49	17.1	18.9	36.0	3.2	5.6	8.7	44.7	19.6
	Total	20.9	15.7	36.6	3.7	4.3	8.1	44.6	18.1
2005	15-19	27.7	10.1	37.8	7.1	1.8	8.9	46.7	19.1
	20-24	27.4	8.9	36.3	12.7	4.0	16.7	52.9	31.5
	25-49	16.8	19.1	35.9	5.3	9.6	14.9	50.8	29.3
	Total	19.5	16.6	36.1	6.7	8.0	14.7	50.8	29.0
2011	15-19	30.3	2.4	32.8	22.5	1.2	23.8	56.5	42.0
	20-24	20.3	2.1	22.4	29.6	5.3	34.9	57.3	60.8
	25-49	14.3	12.3	26.5	12.8	14.9	27.7	54.2	51.1
	Total	16.5	9.8	26.3	16.4	12.2	28.6	54.9	52.1

3.6 Trends in Unmet Need by Sociodemographic Characteristics of Women

Table 4 presents the proportion of currently married women who have an unmet need for family planning by residence, education level, whether the respondent visited a health facility in the last 12 months, and whether the respondent was exposed to family planning or health messages via the media (TV, newspaper, or radio) (see Appendix A1 for an extended table that includes other sociodemographic characteristics).

The data in Table 4 indicate a huge disparity in unmet need between urban and rural areas. Overall, women in rural areas have greater unmet need than their urban counterparts. The urban-rural difference was more pronounced for spacing needs than limiting needs. In 2000-2011 total unmet need for spacing was nearly twice as high in rural areas. From 2000 to 2011, the levels of total unmet need among urban women age 15-24 declined by about 10 percent, whereas current use increased by 24 percent. Among urban women age 25-49, total unmet need declined by 10 percent and current use increased by 15 percent. In rural areas, total unmet need among women age 15-24 declined by 12 percent, and current use increased by 23 percent. In contrast, total unmet need among women age 25-49 declined by 10 percent and current use increased by 18 percent. Urban women age 25-49, showed a slightly higher increase in current use of contraception during 2000-2011 than their rural counterparts.

Table 4 clearly shows that increasing education is associated with the current use of contraception. In all three surveys, women with primary education showed a higher need for family planning (for both limiting and spacing) compared with women with no formal education or women with a secondary or higher level of education. In 2000, 2005, and 2011, among women age 15-24 with no education, primary education, and secondary or higher education, total unmet need declined by 11 percent, 16 percent, and 23 percent, respectively. Similarly, for the three education categories, unmet need for women age 25-49 also declined by 8 percent, 13 percent, and 17 percent, respectively.

Unmet need for spacing was higher among women age 15-24 who had heard or seen specific family planning or health messages (i.e., those with exposure to family planning via the media) compared with women age 25-49 in all the three surveys. For instance, in 2000, nearly 40 percent (33 percent for spacing and 6 percent for limiting) of women age 15-24 exposed to family planning via the media had an unmet need for family planning, whereas only 29 percent of women age 25-49 did so. In addition, between 2000 and 2011, unmet need among women age 15-24 exposed to family planning via the media declined by 17 percent, whereas, among women age 25-49 the decline in unmet need was only 7 percent.

Total unmet need for each survey year is greatest among women who visited a health facility. For all three survey years, women age 15-24 who visited a health facility had higher unmet need compared with those age 25-49. Between 2000 and 2011, unmet need (both for spacing and limiting) decreased for women in both age categories; however, substantial decline was observed among women age 15-24 who visited a health facility (about 20 percent).

Table 4 Percentage of currently married adolescent and young women (age 15-24), and adult women (age 25-49) who have an unmet need for family planning, by background characteristics, Ethiopia 2000-2011

	Unmet need						Current use					
	For Spacing		For Limiting		Total unmet need		For Spacing		For Limiting		Total current use	
	15-24	25-49	15-24	25-49	15-24	25-49	15-24	25-49	15-24	25-49	15-24	25-49
Residence												
Urban												
2000	17.7	10.9	7.5	14.2	25.2	25.1	30.9	13.2	5.4	22.2	36.3	35.4
2005	13.2	6.7	8.8	12.6	22.0	19.3	36.4	19.6	13.9	26.0	50.3	45.6
2011	12.0	6.5	3.6	9.0	15.6	15.5	49.1	25.7	10.8	24.5	59.9	50.2
Rural												
2000	32.8	18.0	7.0	19.6	39.8	37.6	2.2	1.7	0.6	3.1	2.8	4.8
2005	29.0	18.1	9.3	19.9	38.3	38.0	8.3	3.6	2.2	7.5	10.5	11.1
2011	25.8	16.0	2.0	13.0	27.8	29.0	23.0	9.9	2.6	12.8	25.6	22.7
Education												
No Education												
2000	30.5	16.6	6.7	19.5	37.2	36.1	2.0	1.5	0.5	3.9	2.5	5.4
2005	28.3	16.8	9.1	20.0	37.4	36.8	6.7	2.9	2.0	7.4	8.7	10.3
2011	24.3	14.8	1.9	13.1	26.2	27.9	18.0	9.2	3.5	13.1	21.5	22.3
Primary												
2000	35.5	22.4	8.7	17.3	44.2	39.7	11.4	7.8	2.1	10.2	13.5	18.0
2005	28.9	20.3	10.1	18.3	39.0	38.6	16.0	8.6	5.5	15.7	21.5	24.3
2011	25.3	14.8	2.5	12.1	27.8	26.9	30.4	17.6	5.1	18.2	35.5	35.8
Secondary and higher												
2000	28.7	13.8	7.6	11.8	36.3	25.6	32.6	22.6	7.3	24.4	39.9	47.0
2005	15.6	9.7	8.1	8.2	23.7	17.9	39.4	29.6	10.9	23.9	50.3	53.5
2011	10.6	5.6	2.3	2.9	12.9	8.5	61.7	37.4	2.4	23.8	64.1	61.2
Visited a health facility in the last 12 months												
Yes												
2000	33.5	18.8	7.6	19.1	41.1	37.9	8.8	4.9	1.9	8.8	10.7	13.7
2005	27.4	17.1	7.9	18.0	35.3	35.1	20.5	9.6	6.4	17.4	26.9	27.0
2011	18.9	14.5	2.7	10.8	21.6	25.3	35.9	16.5	7.2	19.2	43.1	35.7
No												
2000	29.5	15.8	6.7	18.8	36.2	34.6	2.7	1.9	0.5	3.1	3.2	5.0
2005	27.6	16.7	9.9	19.5	37.5	36.2	6.6	3.6	2.0	6.5	8.6	10.1
2011	26.3	14.1	1.9	13.3	28.2	27.4	22.1	10.4	2.0	12.2	24.1	22.6
Exposure to family planning messages from media												
Yes												
2000	33.2	12.9	6.3	15.8	39.5	28.7	13.9	10.3	2.3	17.2	16.2	27.5
2005	30.6	13.2	7.1	17.0	37.7	30.2	22.0	12.1	7.3	17.0	29.3	29.1
2011	18.8	11.0	3.7	10.8	22.5	21.8	41.2	18.7	4.1	19.7	45.3	38.4
No												
2000	30.7	17.8	7.2	19.4	37.9	37.2	3.5	2.0	0.9	3.5	4.4	5.5
2005	26.4	18.1	10.0	19.8	36.4	37.9	6.9	3.0	1.8	7.0	8.7	10.0
2011	25.8	16.0	1.5	13.1	27.3	29.1	20.4	9.7	4.1	12.5	24.5	22.2

3.7 Multivariate Analysis

Tables 5 presents relative risk ratios (RRRs) from multinomial logistic regression showing factors associated with unmet need for spacing and limiting for currently married women age 15-24 and age 5-49, separately. The following independent predictors were included in the model: residence, women's education, educational differences between husband and wife, religion, exposure to family planning and health messages from media, visit by health workers, health facility visit, household wealth, and DHS survey year.

The results from the multivariate analysis indicate that among women age 15-24 the independent predictors of unmet need for spacing were the following: urban-rural residence, education, educational difference between husband and wife, and survey year, whereas, education, religion, exposure to family planning from media, and survey year were independent predictors of unmet need for limiting. Among women age 25-49, urban-rural residence, educational difference between husband and wife, religion, exposure to family planning from media, visit by family planning worker, visit to a health facility, and survey year were the factors associated with unmet need for spacing. Urban-rural residence, education, religion, exposure to family planning from media, and survey year were the factors associated with unmet need for limiting.

Table 5 shows that urban-rural residence, educational difference between husband and wife, and survey year were common independent factors associated with unmet need for spacing for both age cohorts of women, i.e., women age 15-24 and age 25-49. Similarly, education, religion, exposure to family planning from media, and survey year were independent predictors of unmet need for limiting.

Rural residence is positively associated with unmet need for spacing for both age cohorts. Women who reside in rural areas have significantly higher unmet need for family planning than women in urban areas. In addition, for couples in which a husband is more educated than his wife, the relative risk of unmet need for spacing for the woman is higher than for couples in which both spouses have the same educational attainment.

Secondary or higher level of education is associated with a significant reduction in unmet need for spacing among women age 15-24 (RRR = 0.69, 95 percent CI = (0.52, 0.91)) and for limiting among women age 25-49 (RRR = 0.51, 95 percent CI = (0.41, 0.65)). Women age 15-24 who have been educated up to the primary level have a significantly higher unmet need for limiting (RRR = 1.04, 95 percent CI = (1.03, 1.87)) compared to those with no formal education. Difference in education—whether the husband is more educated than his wife or the wife is more educated than her husband—elevates the relative risk of unmet need for spacing among women age 15-24 and 25-49 but is not associated with unmet need for limiting.

Exposure to mass media family planning messages was significantly associated with a decrease in unmet need for spacing among women age 25-49 (RRR = .76, 95 percent CI = (.53, .95)) and with a decrease in unmet need for limiting among women 15-24 (RRR = .71, 95 percent CI = (.53, .95)) and 25-49 (RRR = .86, 95 percent CI = (.77, .96)). From the DHS survey in 2000 to the survey in 2011 there was a significant reduction in unmet need for spacing and limiting among women age 15-24 and age 25-49.

Wealth status and work status, were not significant predictors of unmet need for spacing or limiting among women age 15-24 and women age 25-49.

The independent effects of factors associated with total unmet need for family planning, obtained from binary logistic regression, were generally similar to those for unmet need for spacing and limiting. One notable exception is that visit by a family planning worker is significantly and positively associated with total unmet need among women age 25-49. Results are shown in appendix Table A2.

Table 5 Relative risk ratios from multinomial logistic regressions predicting unmet need for spacing and limiting, Ethiopia 2000-2011

	15-24		25-49	
	RRR	(95 % CI)	RRR	(95 % CI)
UNMET NEED FOR SPACING VS. NO UNMET NEED				
Residence (Ref = Urban)				
Rural	2.09**	(1.70, 2.57)	2.23**	(1.91, 2.61)
Education (Ref = No Education)				
Primary	1.06	(0.90, 1.26)	1.08	(0.93, 1.24)
Secondary and higher	0.69**	(0.52, 0.91)	0.88	(0.70, 1.11)
Religion (Ref = Ethiopia Orthodox Christian)				
Other Christian (Catholic + Protestants)	1.15	(0.98, 1.36)	1.26**	(1.12, 1.41)
Moslem	0.91	(0.80, 1.03)	1.13**	(1.03, 1.25)
Traditional + Other	0.97	(0.66, 1.44)	1.32**	(1.05, 1.66)
Currently working (Ref = No)				
Yes	1.01	(0.89, 1.15)	1.03	(0.95, 1.13)
Visited health facility in the last 12 months (Ref = No)				
Yes	0.96	(0.85, 1.09)	1.14**	(1.04,1.24)
Visited by Family Planning worker in the last 12 months (Ref = No)				
Yes	0.96	(0.77, 1.20)	1.16*	(1.01, 1.33)
Exposure to Family Planning from Media (Ref = No)				
Yes	1.01	(0.87, 1.17)	0.76**	(0.67, 0.85)
Difference in partner's education (Ref = Both same level of education)				
Wife more educated	1.21	(0.97, 1.52)	1.32**	(1.08, 1.61)
Husband more educated	1.24**	(1.08, 1.42)	1.46**	(1.32, 1.61)
Wealth Quintiles (Ref = Poor (low 40 percent))				
Middle	0.94	(0.81, 1.09)	0.92	(0.83, 1.03)
Rich (upper 40 percent)	1.08	(0.93, 1.25)	0.95	(0.85, 1.06)
Survey Year (Ref = DHS 2000)				
2005	0.85**	(0.74, 0.99)	0.94	(0.85, 1.05)
2011	0.72**	(0.62, 0.83)	0.81**	(0.73, 0.90)
UNMET NEED FOR LIMITING VS. NO UNMET NEED				
Residence (Ref = Urban)				
Rural	1.04	(0.73, 1.49)	1.59**	(1.38, 1.84)
Education (Ref = No Education)				
Primary	1.04**	(1.03, 1.87)	1.05	(0.91, 1.22)
Secondary and higher	1.04	(0.72, 1.82)	0.51**	(0.41, 0.65)
Religion (Ref = Ethiopia Orthodox Christian)				
Other Christian (Catholic + Protestants)	1.42**	(1.07, 1.89)	0.96	(0.85, 1.08)
Moslem	0.89	(0.70, 1.13)	0.64**	(0.59, 0.71)
Traditional + Other	1.83**	(1.04, 3.22)	0.71**	(0.55, 0.92)
Currently working (Ref = No)				
Yes	0.83	(0.66, 1.05)	1.03	(0.94, 1.12)
Visited a health facility in the last 12 months (Ref = No)				
Yes	1.00	(0.80, 1.25)	1.07	(0.98, 1.17)
Visited by Family Planning worker in the last 12 months (Ref = No)				
Yes	0.80	(0.49, 1.32)	1.07	(0.93, 1.23)
Exposure to Family Planning from Media (Ref = No)				
Yes	0.71**	(0.53, 0.95)	0.86**	(0.77, 0.96)
Difference in partner's education (Ref = Both same level of education)				
Wife more educated	1.12	(0.74, 1.69)	0.97	(0.79, 1.19)
Husband more educated	1.18	(0.92, 1.51)	1.00	(0.90, 1.11)
Wealth Quintiles (Ref = Poor (low 40 percent))				
Middle	1.14	(0.87, 1.50)	1.06	(0.95, 1.19)
Rich (upper 40 percent)	1.01	(0.77, 1.34)	1.11	(1.00, 1.23)
Survey Year (Ref = DHS 2000)				
2005	1.12	(0.89, 1.42)	0.96	(0.86, 1.06)
2011	0.23**	(0.16, 0.32)	0.61**	(0.55, 0.68)
Log likelihood	-5255.18		-15808.96	
Number of women	7,170		20,773	

Significance level: * p < .05; ** p < .01

4. DISCUSSION

The analysis showed that the levels and trends in unmet need for family planning have experienced a substantial positive change. From 2000 to 2011, unmet need among women age 15-24 and age 25-49 currently in union has dropped. The decrease in total level of unmet need is likely a result of an increase in use of contraception, particularly for the purpose of limiting births. From 2000 to 2011, the level of unmet need for spacing among women in union was higher than the level of unmet need for limiting. Consistent with findings from other similar studies, unmet need for spacing and limiting is highest among the youth (women age 15-24). The study showed that unmet need for family planning has decreased over time as contraceptive use has risen. From 2000 to 2011, unmet need for spacing among currently married women age 15-19 dropped from 37 percent to 32 percent; among women age 20-24 it dropped from 39 percent to 22 percent; and among women age 25-49 it dropped from 36 percent to 26 percent.

Use of a modern method of contraception increased substantially over the past decade. For instance, the contraceptive prevalence rate for adolescent women increased about seven-fold (from 3 percent in 2000 to 23 percent in 2011). As a result, the percentage of total demand satisfied increased between 2000 and 2011 for all women in union (adolescents, young women, and adult women).

The results from multivariate analysis showed the presence of high levels of unmet need in rural areas compared with urban areas. Among women age 25-49, educational attainment was significantly associated with unmet need for limiting only. In addition, visit to a health facility and visit by a family planning worker, were also significantly associated with unmet need for spacing among women 25-49.

Interestingly, wealth status, visit by a family planning worker, visit to a health facility, and work status were not significantly associated with unmet need for spacing and limiting for youth women. The lack of an independent effect of the two policy variables in the model, i.e., visit to a health facility and visit by a family planning worker, may be indicative of family planning outreach services not being effective in providing an appropriate message to the youth. However, this finding also calls for more research.

The government of Ethiopia has adopted a national Adolescent and Youth Reproductive Health Strategy to enhance reproductive health and well-being among young people in Ethiopia. In Ethiopia, where early marriage and early marital sexual activity is prevalent, use of family planning gives couples the ability to limit the number and spacing of their children. In addition, unintended pregnancies, abortions, deaths, and illnesses related to pregnancy and childbirth can be prevented.

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APPENDIX

Table A1 Percentage of currently married adolescent and young women (age 15-24), and adult women (age 25-49) who have an unmet need for family planning, by background characteristics, Ethiopia 2000-2011

	15-24						25-49					
	Unmet need:		Met need:				Unmet need:		Met need:			
Background characteristic	For spacing	For limiting	For spacing	For limiting	Total demand	Demand satisfied	For spacing	For limiting	For spacing	For limiting	Total demand	Demand satisfied
DHS 2000												
Residence												
Urban	17.7	7.5	30.9	5.4	61.5	59.1%	10.9	14.2	13.2	22.2	60.4	58.6%
Rural	32.8	7.0	2.2	0.6	42.5	6.4%	18.0	19.6	1.7	3.1	42.4	11.4%
Region												
Tigray	19.7	2.3	7.5	1.1	30.5	27.9%	16.8	14.7	5.5	5.5	42.4	25.8%
Affar	8.8	6.1	6.3	4.2	25.3	41.4%	4.4	6.5	2.5	4.2	17.5	37.9%
Amhara	33.5	11.0	3.6	1.0	49.1	9.5%	14.5	26.5	2.9	5.8	49.6	17.4%
Oromiya	31.0	5.7	4.9	0.7	42.3	13.2%	18.5	18.2	2.5	4.6	43.8	16.2%
Somali	7.7	5.8	3.3	0.3	17.1	21.1%	13.2	3.5	1.0	1.3	19.0	12.1%
Benishangul-Gumuz	26.7	6.5	10.2	1.4	44.8	26.0%	15.0	18.4	2.6	4.9	40.9	18.5%
SNNP	36.9	5.9	4.5	1.3	48.6	11.9%	20.3	15.1	2.1	4.4	42.0	15.5%
Gambela	28.0	14.0	9.9	2.0	53.9	22.1%	17.2	13.4	4.9	9.4	44.9	31.9%
Harari	20.3	10.5	15.1	6.3	52.3	41.0%	10.1	19.8	11.0	11.3	52.1	42.7%
Addis Ababa	19.6	7.2	39.6	8.9	75.2	64.5%	5.6	12.5	18.6	26.1	62.8	71.2%
Dire Dawa	18.6	3.4	21.0	5.7	48.7	54.8%	13.7	11.5	13.1	15.8	54.0	53.5%
Education												
No education	30.5	6.7	2.0	0.5	39.7	6.3%	16.6	19.5	1.5	3.9	41.5	12.9%
Primary	35.5	8.7	11.4	2.1	57.7	23.4%	22.4	17.3	7.8	10.2	57.7	31.2%
Secondary and higher	28.7	7.6	32.6	7.3	76.1	52.4%	13.8	11.8	22.6	24.4	72.5	64.7%
Religion												
Orthodox Christian	32.4	7.7	6.4	1.6	48.1	16.6%	15.5	23.7	3.9	6.9	50.0	21.6%
Other Christian (Catholic+Protestants)	34.0	5.1	5.2	0.5	44.7	12.8%	21.5	14.8	2.7	3.7	42.7	15.0%
Moslem	28.0	6.4	3.8	0.7	39.0	11.6%	16.6	14.5	2.6	4.6	38.3	18.6%
Traditional+Other	28.8	12.5	0.0	0.0	41.3	0.1%	20.3	10.1	1.5	3.9	35.8	15.3%
Currently working												
No	29.8	7.2	5.5	1.2	43.7	15.3%	17.1	17.0	3.1	4.4	41.6	18.0%
Yes	32.3	6.9	5.0	1.0	45.2	13.3%	17.1	20.3	3.2	6.5	47.1	20.6%
Visited health facility in the last 12 months												
No	29.5	6.7	2.7	0.5	39.3	8.1%	15.8	18.8	1.9	3.1	39.5	12.6%
Yes	33.5	7.6	8.8	1.9	51.7	20.6%	18.8	19.1	4.9	8.8	51.5	26.5%
Visited by Family Planning worker in the last 12 months												
No	31.3	7.1	4.8	1.0	44.2	13.2%	17.0	18.8	3.1	5.5	44.4	19.2%
Yes	23.3	0.0	28.4	7.1	58.7	60.4%	20.0	22.9	8.4	9.7	60.9	29.6%
Exposure to FP from Media												
No	30.7	7.2	3.5	0.9	42.3	10.3%	17.8	19.4	2.0	3.5	42.7	12.9%
Yes	33.2	6.3	13.9	2.3	55.7	29.1%	12.9	15.8	10.3	17.2	56.2	49.0%
Difference in partner's education												
Wife more educ.	34.6	15.0	10.2	2.2	62.1	20.0%	19.8	15.7	10.3	12.5	58.3	39.1%
Same level of educ.	28.7	7.7	1.8	0.7	38.8	6.3%	14.6	19.9	1.8	3.6	40.0	13.7%
Husband more educ.	34.3	4.9	9.5	1.5	50.2	21.9%	23.0	16.9	5.3	9.2	54.4	26.6%
Wealth Status												
Poor (low 40%)	30.58	6.93	1.27	0.07	38.9	3.4%	18.16	20.71	1.45	2.63	43.0	9.5%
Middle	29.38	8.54	1.30	1.22	40.4	6.2%	16.86	17.09	1.24	2.22	37.4	9.2%
Rich (upper 40%)	32.87	6.07	11.47	1.91	52.3	25.6%	15.93	17.69	6.17	10.64	50.4	33.3%

Continued…

Table A1—*Continued*

Background characteristic	15-24 Unmet need: For spacing	15-24 Unmet need: For limiting	15-24 Met need: For spacing	15-24 Met need: For limiting	15-24 Total demand	15-24 Demand satisfied	25-49 Unmet need: For spacing	25-49 Unmet need: For limiting	25-49 Met need: For spacing	25-49 Met need: For limiting	25-49 Total demand	25-49 Demand satisfied
DHS 2005												
Residence												
Urban	13.2	8.8	36.4	13.9	72.4	69.6%	6.7	12.6	19.6	26.0	64.8	70.3%
Rural	29.0	9.3	8.3	2.2	48.8	21.5%	18.1	19.9	3.6	7.5	49.1	22.6%
Region												
Tigray	25.5	3.1	12.3	1.7	42.6	32.9%	14.2	11.7	8.2	9.3	43.3	40.3%
Affar	15.3	9.7	4.3	5.5	34.7	28.2%	6.8	4.2	1.5	3.9	16.3	33.0%
Amhara	20.9	9.6	11.1	4.8	46.4	34.3%	12.5	19.4	5.4	10.8	48.0	33.6%
Oromiya	33.4	10.7	10.1	3.2	57.4	23.2%	20.1	23.5	4.0	9.7	57.3	24.0%
Somali	9.2	1.8	0.0	0.0	11.0	0.0%	9.6	4.9	2.1	1.8	18.4	21.4%
Benishangul-Gumuz	20.8	8.1	6.8	5.0	40.7	28.9%	12.6	20.7	3.1	7.7	44.0	24.5%
SNNP	33.5	10.1	9.5	1.2	54.4	19.8%	20.8	18.8	4.8	7.3	51.7	23.5%
Gambela	10.8	16.9	10.5	9.6	47.9	42.0%	10.0	13.6	4.2	9.8	37.6	37.2%
Harari	21.0	5.9	22.6	5.9	55.3	51.4%	13.2	10.2	16.6	19.2	59.2	60.5%
Addis Ababa	12.3	3.0	53.4	10.0	78.7	80.6%	4.8	7.8	25.0	30.3	67.9	81.5%
Dire Dawa	10.1	5.0	31.4	2.7	49.2	69.3%	8.5	8.1	18.0	15.9	50.5	67.1%
Education												
No education	28.3	9.1	6.7	2.0	46.1	18.8%	16.8	20.0	2.9	7.4	47.2	22.0%
Primary	28.9	10.1	16.0	5.5	60.6	35.6%	20.3	18.3	8.6	15.7	62.9	38.7%
Secondary and higher	15.6	8.1	39.4	10.9	74.0	68.1%	9.7	8.2	29.6	23.9	71.4	74.9%
Religion												
Orthodox Christian	25.2	9.6	14.4	4.9	54.1	35.6%	13.7	18.4	7.1	12.8	52.0	38.2%
Other Christian (Catholic+Protestants)	33.8	9.8	7.1	1.8	52.5	16.9%	22.2	19.8	4.1	10.4	56.5	25.7%
Moslem	27.6	8.5	8.7	2.1	46.9	23.1%	17.6	19.5	4.0	4.7	45.7	18.9%
Traditional+Other	26.5	9.7	0.0	0.0	36.2	0.0%	18.3	20.2	1.2	6.9	46.6	17.4%
Currently working					0.0							
No	27.1	9.6	9.3	2.7	48.7	24.6%	17.1	19.0	4.4	8.5	49.0	26.2%
Yes	29.2	7.8	17.6	5.8	60.5	38.7%	16.0	19.2	8.0	12.5	55.8	36.8%
Visited health facility in the last 12 months												
No	27.6	9.9	6.6	2.0	46.0	18.6%	16.7	19.5	3.6	6.5	46.3	21.8%
Yes	27.4	7.9	20.5	6.4	62.1	43.2%	17.1	18.0	9.6	17.4	62.1	43.6%
Visited by Family Planning worker in the last 12 months												
No	27.3	9.3	10.9	3.1	50.6	27.5%	16.7	19.1	5.2	9.1	50.1	28.5%
Yes	30.4	8.1	12.1	7.1	57.6	33.3%	17.9	18.2	7.1	14.3	57.6	37.2%
Exposure to FP from Media												
No	26.4	10.0	6.9	1.8	45.1	19.3%	18.1	19.8	3.0	7.0	47.9	20.9%
Yes	30.6	7.1	22.0	7.3	67.0	43.7%	13.2	17.0	12.1	17.0	59.3	49.1%
Difference in partner's education												
Wife more educ.	27.0	5.9	19.7	7.6	60.2	45.4%	15.7	14.9	13.2	13.4	57.3	46.6%
Same level of educ.	28.8	8.1	6.1	1.8	44.8	17.8%	15.2	19.7	3.0	6.9	44.9	22.1%
Husband more educ.	26.2	11.7	14.4	4.0	56.3	32.7%	19.8	18.7	8.2	13.9	60.6	36.5%
Wealth Status												
Poor (low 40%)	28.26	8.33	4.38	1.34	53.40	10.7%	19.06	18.93	1.77	3.60	43.40	12.4%
Middle	27.82	9.13	8.32	2.45	47.29	22.8%	17.97	21.87	4.15	8.27	52.30	23.8%
Rich (upper 40%)	26.48	10.39	20.21	6.18	32.81	80.4%	14.00	17.79	9.48	16.20	57.50	44.7%

Continued…

Table A1—*Continued*

Background characteristic	15-24						25-49					
	Unmet need:		Met need:				Unmet need:		Met need:			
	For spacing	For limiting	For spacing	For limiting	Total demand	Demand satisfied	For spacing	For limiting	For spacing	For limiting	Total demand	Demand satisfied
DHS 2011												
Residence												
Urban	12.0	3.6	49.1	10.8	75.5	79.4%	6.5	9.0	25.7	24.5	65.7	76.4%
Rural	25.8	2.0	23.0	2.6	53.3	48.0%	16.0	13.0	9.9	12.8	51.8	43.9%
Region												
Tigray	21.6	0.0	21.1	1.2	43.9	50.8%	13.5	10.6	12.6	9.6	46.3	48.0%
Affar	20.5	1.2	8.3	2.0	32.0	32.1%	9.5	5.2	6.3	2.9	24.0	38.5%
Amhara	22.6	3.5	29.5	5.8	61.4	57.5%	9.5	13.2	15.8	17.7	56.2	59.6%
Oromiya	26.9	2.3	25.4	3.8	58.3	50.0%	18.1	13.1	11.7	13.6	56.4	44.7%
Somali	17.2	0.0	4.5	0.5	22.2	22.4%	21.8	5.0	3.0	1.2	30.9	13.3%
Benishangul-Gumuz	20.9	4.5	28.2	5.4	59.0	56.9%	13.3	12.0	11.5	12.9	49.8	49.1%
SNNP	20.9	1.1	30.5	1.8	54.3	59.5%	14.7	12.4	8.7	15.8	51.5	47.4%
Gambela	17.8	2.8	34.4	8.2	63.3	67.3%	10.9	9.3	14.9	14.5	49.7	59.2%
Harari	23.3	1.7	27.8	6.8	59.6	58.1%	11.9	12.7	17.8	17.0	59.4	58.5%
Addis Ababa	6.6	1.5	63.8	11.6	83.4	90.3%	4.9	6.4	34.0	25.5	70.7	84.1%
Dire Dawa	21.5	2.0	29.6	5.1	58.2	59.7%	13.9	7.1	18.9	15.0	54.9	61.8%
Education												
No education	24.3	1.9	18.0	3.5	47.8	45.1%	14.8	13.1	9.2	13.1	50.2	44.5%
Primary	25.3	2.5	30.4	5.1	63.3	56.0%	14.8	12.1	17.6	18.2	62.8	57.1%
Secondary and higher	10.6	2.3	61.7	2.4	76.9	83.2%	5.6	2.9	37.4	23.8	69.7	87.8%
Religion												
Orthodox Christian	19.3	2.6	32.1	5.7	59.8	63.3%	10.4	12.9	16.0	18.2	57.5	59.5%
Other Christian (Catholic+Protestants)	21.9	1.5	32.3	4.3	60.0	61.1%	14.0	13.3	11.7	16.1	55.1	50.4%
Moslem	30.0	2.3	18.7	1.7	52.7	38.7%	19.8	10.3	9.6	9.8	49.5	39.3%
Traditional+Other	27.5	0.0	12.0	0.0	39.5	30.4%	19.1	18.4	5.1	4.9	47.4	21.1%
Currently working					0.0							
No	24.6	2.4	23.8	3.9	54.7	50.6%	15.0	13.6	10.1	13.1	51.9	44.8%
Yes	20.4	1.7	36.7	4.6	63.5	65.1%	13.1	10.2	17.1	17.8	58.1	60.1%
Visited health facility in the last 12 months												
No	26.3	1.9	22.1	2.0	52.3	46.1%	14.1	13.3	10.4	12.2	50.0	45.3%
Yes	18.9	2.7	35.9	7.2	64.7	66.6%	14.5	10.8	16.5	19.2	61.0	58.5%
Visited by Family Planning worker in the last 12 months												
No	23.3	2.1	27.0	4.2	56.5	55.1%	14.4	12.7	11.1	14.7	52.9	48.6%
Yes	24.2	2.9	31.0	3.2	61.2	55.9%	13.5	10.7	19.1	16.0	59.4	59.2%
Exposure to FP from Media												
No	25.8	1.5	20.4	4.1	51.7	47.3%	16.0	13.1	9.7	12.5	51.3	43.4%
Yes	18.8	3.7	41.2	4.1	67.8	66.8%	11.0	10.8	18.7	19.7	60.1	63.8%
Difference in partner's education												
Wife more educ.	25.1	3.0	31.0	4.9	63.9	56.1%	12.8	9.3	19.7	19.2	61.0	63.7%
Same level of educ.	25.0	1.9	20.9	3.3	51.0	47.3%	13.6	13.5	10.3	11.7	49.0	44.9%
Husband more educ.	21.6	2.2	31.1	4.4	59.4	59.9%	15.5	11.6	14.5	18.1	59.6	54.6%
Wealth Status												
Poor (low 40%)	26.85	2.64	17.10	1.64	48.2	38.9%	16.41	13.43	6.46	11.05	47.4	37.0%
Middle	26.21	1.80	22.93	4.92	55.9	49.9%	14.89	14.55	9.94	13.34	52.7	44.2%
Rich (upper 40%)	18.23	2.01	40.99	6.21	67.4	70.0%	11.71	9.94	20.80	19.78	62.2	65.2%

Table A2 Adjusted odds ratio of total unmet need for family planning, Ethiopia 2000-2011

	15-24		25-49	
	OR	95 % CI	OR	95 % CI
Residence (Ref = Urban)				
Rural	1.80**	(1.50, 2.18)	1.88**	(1.67, 2.10)
Education (Ref = No education)				
Primary	1.12	(0.96, 1.31)	1.06	(0.95, 1.19)
Secondary and higher	0.78	(0.61, 1.00)	0.67**	(0.56, 0.79)
Religion (Ethiopian Orthodox Christian)				
Other Christian (Catholic + Protestants)	1.20**	(1.03, 1.40)	1.09	(0.99, 1.19)
Moslem	0.91	(0.81, 1.02)	0.85**	(0.79, 0.92)
Traditional + Other	1.13	(0.79, 1.60)	0.97	(0.81, 1.17)
Currently working (Ref = No)				
Yes	0.97	(0.87, 1.09)	1.03	(0.96, 1.10)
Visited health facility in the last 12 months (Ref = No)				
Yes	0.97	(0.87, 1.08)	1.10	(1.03, 1.18)
Visited by Family Planning worker in the last 12 months (Ref = No)				
Yes	0.94	(0.76, 1.16)	1.12**	(1.00, 1.24)
Exposure to FP from Media (Ref = No)				
Yes	0.94	(0.82, 1.08)	0.81**	(0.74, 0.88)
Difference in partner's education (Ref = Both have same level of education)				
Wife more educated	1.19	(0.97, 1.47)	1.14	(0.97, 1.33)
Husband more educated	1.23**	(1.09, 1.40)	1.21**	(1.12, 1.31)
Wealth Quintiles (Ref = Poor (low 40 percent))				
Middle	0.98	(0.85, 1.12)	0.99	(0.91, 1.08)
Rich (upper 40 percent)	1.07	(0.93, 1.22)	1.03	(0.95, 1.11)
Survey Year (Ref = 2000)				
2005	0.91	(0.80, 1.04)	0.95	(0.88, 1.03)
2011	0.60**	(0.52, 0.69)	0.71**	(0.66, 0.77)
Log likelihood	-4261.17		-11937.7	
Number of women	7,170		20,773	

Significance level: * p < .05; ** p < .01