

# Factors affecting the intention of women to limit childbearing in rural Ethiopia

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## Abstract

**Background:** The level of fertility in Ethiopia, especially in the rural areas, is unacceptably high. High fertility has a negative impact on the environment as well as on the socio-economic development. Thus, understanding factors that influence the fertility intention of women is important for family planning and population policy.

**Objective:** The main objective of this study was to identify factors which influence women's intention to limit childbearing in rural Ethiopia.

**Methods:** The source of the data was the 2011 Ethiopia Demographic and Health Survey. A weighted sub-sample of 10,864 women was drawn from the survey women's dataset. Logistic regression was used to examine the effects that some demographic, socio-economic, and cultural characteristics had on the intention of rural women to limit childbearing.

**Results:** The adjusted odds-ratio (aOR with respective 95% confidence intervals) of intention to limit childbearing for the age categories 30-39 and 40-49 years were, respectively, 2.03(1.768-2.326) and 7.31(6.173-8.667) (referent age category of 15-29 years). For secondary and higher education aOR = 1.57(1.384-1.857) and primary education aOR = 1.07(0.945-1.216) (referent category no formal education). For women who were not exposed to any media aOR=0.87 (0.779-0.965) relative to women having access to mass media. AOR for women without knowledge about family planning was 0.62(0.504-0.740) compared to those who knew about FP methods. Visit by FP professional during the 12 months before the survey had the effect to reduce desire for childbearing (aOR=0.75; 0.659-0.845) compared with no visit. The respective aORs for Muslims and Copts were 0.71(0.653-0.823) and 0.99(0.866-1.32) (Protestants used as referent category). AORs for women who had never lived in marriage and for those who were married or had a partner, respectively, were 0.79 (0.587-1.066) and 0.26(0.220-0.307) (widowed/separated women are the referent group). For the low and middle economic categories aOR=1.40(1.139-1.716) and aOR=1.07(0.852-1.334) with high economic category taken as the reference group. There was no significant difference in the magnitudes of aORs when women are considered by their occupational status. With women having four or more children taken as the referent group, it was observed that aOR=0.07(CI: 0.051-0.090) for women who had no children; for women with 1-3 children aOR= 0.32(CI: 0.280-0.365). In the case of women who never lost a child aOR= 2.87(CI: 2.535-3.250) compared to those who had lost at least one child.

**Conclusion:** Providing family planning services to women who have achieved their fertility goals and educating females at large could contribute positively towards understanding issues surrounding limiting childbearing.

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## Introduction

The world population reached 7 billion in 2012 with 5.6 billion (80%) of this total living in the less developed regions. Whereas the population of developed regions was increasing at an annual rate of 0.34% that of the developing regions was increasing four times faster i.e. 1.37% annually, and the least developed countries as a group were experiencing even more rapid population growth, at 2.3% per year (1).

Measuring fertility intentions, and determining the extent to which they predict fertility behavior, is important for population policy and the implementation of family planning programs. Substantial evidence from more developed countries and growing evidence from less developed countries shows that preferences are associated with childbearing behavior, even after accounting for other socio-demographic characteristics. However, there is little evidence on how fertility desires predict fertility in sub-Saharan African settings, where rapid and radical socio-economic changes, coupled with

a massive HIV/AIDS epidemic, have placed immense strains on traditional marital and reproductive systems. In addition, the conditions under which preferences are more strongly or weakly associated with behavior are not well understood (2). In order to develop effective strategies for fertility control, it is necessary to identify those factors that are related with high fertility. It is hypothesized that women who got married early, illiterate, those from amongst living in rural areas and from low income circle, and have little knowledge of family planning, have high fertility (3).

Ethiopia is the second most populous country in Africa next to Nigeria, with an estimated population of some 81 million and a growth rate of 2.6% per year (4). Of the total population more than 84% live in rural areas. The fertility level of Ethiopia, especially in the rural areas, is unacceptably high. (Total Fertility Rate for rural and urban Ethiopia based on EDHS 2011 were 5.5 and 2.6, respectively). It is, on average, higher than the average for rural Sub-Sahara Africa. The reproductive role on top

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of the productive role of women puts them in a poor social and economic status. In developing countries like Ethiopia, pregnancy and child birth is 18 times more likely to end in the woman's death than in developed countries (5). Apart from the high fertility, there exist large variations in fertility between rural and urban areas, regions as well as various ethnic and religious groups in Ethiopia.

The situation in Ethiopia indicates that demographic and developmental factors reinforce each other so that high fertility and rapid population growth exert a negative influence on economic and social development. Low levels of economic and social development provide enabling conditions that favor a high fertility rate and rapid population growth. The rapid population growth does not match with available resources in Ethiopia where the economy has been agrarian based on household subsistence farming. The National Population Policy of Ethiopia (6) has the objective, among others, to reduce the total fertility rate (TFR) from 7.7 children per woman in 1990 to 4 children per woman in 2015 (6).

The two EDH surveys from 2000 (7) and 2005 (8) showed that the percentage of married women who desired to limit childbearing increased from 32 percent in 2000 to 42 percent in 2005. The key findings of the 2011 EDHS (9) are: 37 percent of currently married women age 15-49 and 29 percent of men want no more children or are sterilized; the desire to stop childbearing declined to 37 percent in 2011 (from 42 percent in 2005); women prefer a family size of 4.3 children, and men prefer 4.8 children. Women's ideal family size has declined in the last ten years, from 5.3 children in 2000 to 4.5 children in 2005 and 4.3 children in 2011; overall, the total wanted fertility rate (TWFR) in Ethiopia is 3.0 children per woman, 1.8 fewer than the TFR of 4.8 suggesting that the TFR is 60 percent higher than it would have been if unwanted births had been avoided. The overall total of 37 percent desire to stop childbearing decomposed by place of residence was almost the same in urban as well as in rural areas (37.1% and 36.9%, respectively).

It is, therefore, essential to document factors that are associated with or influence the intention of limiting fertility among Ethiopian women. The results may be useful in developing a plan of action based on recent developments with regard to childbearing. This could lead to updating the existing National Population Policy.

### Methods

The data for this study were obtained from 2011 EDH Survey (9). The survey was a follow up to (7) and (8) surveys and provided updated estimates of basic demographic and health indicators. The data set included a total of 16,515 women in the reproductive age out of which 10,864 lived in rural Ethiopia.

Accordingly, the response variable in the study was "women's intention to limit childbearing" in rural Ethiopia. The response, therefore, had to be dichotomized. Women were asked whether they "wanted to have a child" or "did not want any more children". On the basis of answers to these questions respondents were classified into two categories: those who "desired to have a child/more children" and those "desiring to limit childbearing" (10). It is worthwhile pointing out that a total of 352 women who reported that they were sterilized (and thus declared as in-fecund) were excluded from the analysis. The first category consisted of 7,634 (70%) (women who wanted a child within two years plus those postponing childbearing for two years) and those who wanted a child but were not sure of the timing. On the other hand, 3,230 (30%) women did not want any more children, meaning that they intended to limit childbearing in the context of this study.

The statistical methodology employed to study the relationship between intention to limit childbearing and the potential predictors from the survey was logistic regression. Based on the data set in (9) and literature review this study considered the following characteristics as independent variables: age of a woman, educational status, religion, wealth status, number of living children, knowledge of family planning, current use of any family planning method, exposure to the media, previous child death, marital status, family planning professionals' visit during the 12 months before the survey, and employment status.

The response variable in the logistic model, namely "intention to limit childbearing" is binary (in the current study coded 0 to mean a woman has desire to a child, and 1 otherwise). The study employed descriptive statistics (counts and percentages) to explain the empirical distribution of the socio-economic, demographic, cultural and environmental characteristics of the above mentioned factors/variables. In the logistic regression analysis the statistical significance of the independent variables was checked using chi-square tests for  $P < 0.05$ . After screening for significant variables has been accomplished, comparisons between/among categories of a single factor/variable (with a specified referent category) were made by controlling the remaining factors/predictors in the model. The findings of the analysis and the subsequent discussion make use of adjusted odds-ratios and confidence intervals. For computational purposes this study used SPSS, STATA and SAS statistical software packages.

### Results

The presentation about distribution of characteristics by their categories is based on Table 1 below. The percentage distribution of desire to limit childbearing by age was: 69.4%, 41.1% and 14.8% among the age groups 40-49, 30-39 and 15-29 years, respectively. From a total of 6,868 rural women who had no formal education 2,402

(that is 35%) desired to limit childbearing; from a total of 342 women with secondary and higher education 32 (9.4%) wanted to limit childbearing. These percentages (which sound reversed from a logical point of view) are not a reflection of what one would anticipate; the percentages are computations merely based on the totals in the two categories. A total of 9,764 women (90%) knew some form of family planning (FP) methods. About 69% of those who had knowledge about FP methods wanted more children while 31% wanted to limit childbearing. On the other hand, 1,659 women who had exposure to information from any kind of mass media (32.2%) had the desire to limit childbearing; 1,571 women (27.5%) who had no access to mass media did not wish to have more children. Close to 40% who had been visited by FP professionals and, 27.4% who were not visited by FP professionals (during the 12 months before the survey) intended to limit childbearing. Of those women who had used any FP method, some 42% had the desire to limit childbearing; about 28% who did not use any methods desired to limit childbearing. Around 32.3% of those in low economic category, 26.5% of middle and 23.3% of high level wealth categories intended to limit childbearing. About 30% of women who were not engaged in paid work wanted to limit childbearing; women who were employed in agriculture intended to limit children (29.5%) and 29.9% of non-agricultural employed women also showed desire to limit childbearing. Some 54% of the women who had four and more living children wanted to limit childbearing while 21.7% of those with 1-3 children wanted to limit childbearing. About 91% of mothers without a child desired to have children. Among women who never lost a child the level of intention was about 30% while the percentage was about 28% among those who had lost a child. The intention to limit childbearing was high (53.2%) among women who lived with partners or were married; the percentage was low (10.7%) among those without a partner. The proportions of Copts, Protestants and Muslims who intended to limit childbearing were 33.4%, 31.6% and 24.8%, respectively. Of course, the percentage of women belonging to the category "others" (including traditional beliefs, Catholics, etc.) was highest (40.5%). But given the fact that there were only 343 women (from the total of 10,864) in this category (of which 139 intended to limit childbearing) this percentage is not considered as significant.

With respect to the referent age category of 15-29 years, the aORs (with respective 95% confidence intervals of intention to limit childbearing) for the age categories 30-39 and 40-49 years were 2.03(1.768-2.326) and 7.31(6.173-8.667) respectively.

The referent category being no formal education the aOR for women with secondary and higher education was

1.57(1.384-1.857) while for those having primary education it was 1.07(0.945-1.216). This shows that whilst there is no significant difference between primary and secondary levels of education, women with secondary education were 57 percent more likely to limit childbearing.

Women who were not exposed to any media were 12.3% less likely to have intention to limit childbearing compared to women who were exposed to any media (referent category); this is implied by the estimated aOR=0.87(0.779-0.965).

Women without knowledge about FP were 39% less likely to want to limit childbearing than women who had knowledge about FP (aOR= 0.61; 0.504-0.740). The likelihood to limit childbearing among women who never used any FP methods was 38% lower compared to women who used any methods (aOR= 0.62; 0.539-0.713). Women who were not visited by FP professional during the 12 months before the survey were about 25% less likely to want to limit childbearing compared to women who were visited by FP worker during the past 12 months before the survey (aOR=0.75; 0.659-0.845).

Women who were followers of the Muslim religion were less likely (aOR=0.72; 0.633-0.823) to have a desire to limit childbearing than followers of Protestantism (referent category). Women, who are followers of Coptic orthodox showed the same level of desire (aOR=0.99; 0.866-1.132) to limit childbearing as Protestants.

AORs for women who had never lived in union and for those who were married or had a partner, respectively, were 0.79 (0.587-1.006) and 0.26 (0.220-0.307). In this case widowed/separated women formed the referent group. As the first interval covers 1 the empirical evidence shows that the level of intention to limit childbearing was the same for married women as well as those who had never lived in union.

While women in the low economic category had higher intention to limit childbearing (aOR=1.40 (1.139-1.716)) relative to women in the high economic category (reference group), those in the middle economic status had the same/comparable degree of intention to limit childbearing as women in the high income category (aOR=1.07; 0.852-1.334).

No statistically significant differences in the intention of limiting childbearing were observed within the three categories of working status. For those working in agriculture and non-agriculture sectors aOR=1.13(0.993-1.281) and aOR=1.06(0.922-1.228) – both values are close to the referent aOR value 1.

Table 1: Descriptive statistics on intention to limit childbearing

Factors/variables	Categories	Distribution by desire for no or more children				
		No more children		More children		Total
		Count	percent	count	percent	Total count
Age of a woman	15-29	955	14.8%	5,483	85.2%	6,438
	30-39	1,158	41.1%	1,658	58.9%	2,816
	40-49	1,117	69.4%	493	30.6%	1,610
Level of education	No education	2,402	35.0%	4,466	65.0%	6,868
	Primary	796	21.8%	2,858	78.2%	3,654
	Secondary and higher	32	9.4%	310	90.6%	342
Knowledge of FP methods	No	208	18.9%	892	81.1%	1,100
	Yes	3,022	31.0%	6,742	69.0%	9,764
Wealth index	Low	2,098	32.3%	4,389	67.7%	6,487
	Middle	935	26.5%	2,596	73.5%	3,531
	High	197	23.3%	649	76.7%	846
Number of living children	No	284	9.1%	2,828	90.9%	3,112
	1-3	833	21.7%	2,999	78.3%	3,832
	4 and more	2,113	53.9%	1,807	46.1%	3,920
Visited by FP worker during the last 12 months	No	2,405	27.4%	6,380	72.6%	8,785
	Yes	825	39.7%	1,254	60.3%	2,079
Previous child death	No	2,452	30.3%	5,633	69.7%	8,085
	Yes	778	28.0%	2,001	72.0%	2,779
Marital status	Never in union	237	10.7%	1,982	89.3%	2,219
	Currently in union	2,408	31.9%	5,137	68.1%	7,545
	Widowed/separated	585	53.2%	515	46.8%	1,100
Exposure to any form of media	No	1,571	27.5%	4,148	72.5%	5,719
	Yes	1,659	32.2%	3,486	67.8%	5,145
Religion	Coptic Orthodox	1,271	33.4%	2,538	66.6%	3,809
	Protestant	721	31.6%	1,559	68.4%	2,280
	Muslim	1,099	24.8%	3,333	75.2%	4,432
	"Others"	139	40.5%	204	59.5%	343
Current use of any methods of FP	No	2,575	27.6%	6,739	72.4%	9,314
	Yes	655	42.3%	895	57.7%	1,550
Occupation	Not working (= not paid)	1,642	30.2%	3,787	69.8%	5,429
	Agricultural	885	29.5%	2,116	70.5%	3,001
	Non-agricultural	703	29.9%	1,731	71.1%	2,434

Results based on the multiple logistic regression analysis are presented in Table 2 below using adjusted odds-ratios (aORs) and the 95% OR confidence intervals. The subsequent discussion draws on the numerical figures in this table.

In the case of women having four or more children taken as the referent group, it was observed that women who had no children were 93% less likely to want to limit childbearing (aOR=0.07; 0.051-.090). For women with 1-3 children the likelihood to limit childbearing was 68% lower compared to the referent category (aOR= 0.32; 0.280-0.365).

Those women who never lost a child were nearly three times more likely to intend to limit childbearing compared to those who had lost at least one child (aOR= 2.87; 2.535-3.250).

Table 2: Adjusted odds-ratios with respective 95 percent OR confidence intervals

Factors/variables	Categories	AOR	LOWER	UPPER
Age of a woman	40-49	7.31	6.173	8.667
	30-39	2.03	1.768	2.326
	15-29 (reference)	1		
Level of education	Secondary and higher	1.57	1.384	1.857
	Primary	1.07	0.945	1.216
	No education (reference)	1		
Knowledge of FP methods	No	0.61	0.504	0.740
	Yes (reference)	1		
Wealth index	Low	1.40	1.139	1.716
	Middle	1.07	0.852	1.334
	High (reference)	1		
Number of living children	No	0.07	0.051	0.090
	1-3	0.32	0.280	0.365
	4 and more (reference)	1		
Visited by FP worker during the last 12 months	No	0.75	0.659	0.845
	Yes (reference)	1		
Previous child death	No	2.87	2.535	3.250
	Yes (reference)	1		
	Never in union	0.79	0.587	1.066
Marital status	Currently in union	0.26	0.220	0.307
	Widowed/separated (reference)	1		
Exposure to any form of media	No	0.87	0.779	0.965
	Yes (reference)	1		
Religion	Coptic Orthodox	0.99	0.866	1.132
	Muslim	0.72	0.633	0.823
	Protestant (reference)	1		
Current use of any methods of FP	No	0.62	0.539	0.713
	Yes (reference)	1		
Occupation	Not working (= not paid)	1.13	0.933	1.281
	Agricultural	1.06	0.922	1.228
	Non-agricultural (reference)	1		

## Discussion

A total of 10,864 women of the reproductive age (15-49 years) who resided in rural Ethiopia at the time of the 2011 EDH survey were included in this study. It was learned that 7,634 (70%) women wanted a child within two years or desired to postpone childbearing for two years or wanted to have a child but were not sure of the timing. On the other hand, 3,230 (30%) women did not want any more children at all; this is the group that intended to limit childbearing.

The current study revealed that rural women who desired to have more children were: in high wealth status category, not visited by family planning workers during the last 12 months, had no access to media, had no children, had little information/knowledge about family planning, and were working in the non-agriculture sector.

A study in Ethiopia showed that desire to limit childbearing increased with an increase in wealth status (11). In addition, this study has indicated that rural women who were not working (meaning not paid work)

were about 13% more likely to want to limit childbearing than women who were working in the non-agriculture sector. A study (12) undertaken in Oromiya Regional State of Ethiopia came up with a similar finding.

Women who lost a child were about three times more likely to desire to have more children compared to those who had never lost a child. A study conducted in Butajira, Ethiopia, showed that women who lost one or more children had a seven-fold intention to have more children (13). Women who experienced child death might want more children to replace those who died and to achieve their desired fertility. This supports the existing hypothesis that behavioral reaction to child mortality involves replacement of a child who died, and adjustment of fertility to ensure the survival of some children to adulthood (14, 15).

In the current study it was shown that education contributed towards limiting childbearing although there was no observed difference with the contribution of primary education. The observation made was that

women with primary or no formal education had the same level of intention while secondary and higher education showed a positive significant effect. The studies (11, 14) showed that in Ethiopia women with no formal education were more likely to desire to limit childbearing than more educated women. The uneducated or less educated women, who wanted to limit childbearing, might already have many children than the educated.

In this study we observed that mothers with low income were the most likely to limit childbearing. While this finding is similar to that in (16) it does not concur with what was reported in (11).

This study showed that women with no exposure to information about fertility through the media (radio, TV and newspapers) were 13.3% less likely to desire to limit childbearing compared to women who had access to any kind of media. The same kind of association between mass media (particularly those promoting family planning) and fertility desires and intentions had been reported for Uganda in (17).

The current study revealed that those women who had knowledge about FP were 39% more likely to desire to stop childbearing than women who did not know about FP.

This study found out that women who did not use any FP methods were 38% less likely to limit childbearing. This observation is supported by the finding in Ethiopia (12, 18) where it had been shown that couple's knowledge, approval and use to family planning were associated with the desire to have or not to have additional children.

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