

Family Planning Use and Its Determinants Among Pastoralist Communities of Ethiopia

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Abstract: *Background:* Ethiopia is one of the most populous countries in Africa where only 27% of women in the reproductive age group are currently using modern family planning methods. As a result, Low family planning use remains a major public health problem in the country especially in pastoralist communities in which it was not properly utilized due to limited physical access of the population to health facilities and shortages of staffs. Only few studies assessed the situation of family planning use in pastoralist communities of Ethiopia. *Objective:* The aim of this study was to determine the prevalence of family planning used and its determinants in pastoralist communities of Ethiopia. *Methods:* The study used women's dataset from the 2011 Ethiopian Demographic and Health Survey. The survey sampling was designed to provide national, urban/rural, and regional representative estimates of key health and demographic indicators. This study used 2,724 married women of reproductive age group in rural pastoralist communities of Afar, Somali, Gambella and Benishangul Gumuz regions of Ethiopia. The sample was selected using a two-stage stratified cluster sampling procedure. Odds ratio along with 95% confidence interval in binary logistic regression was used to assess factors associated with family planning use. *Results:* Around one in ten (11%) of married women used any methods of family planning during the survey time. Unmet needs was 22.6% while 427 (15.7%) was attributed for spacing and 187 (6.9%) was for limiting. The total demand for family planning was only 33.6% among pastoralist women in Ethiopia. Women in the richest wealth quintile (AOR=24.28: 95% CI (13.43 - 43.90), and Muslims (AOR=0.39: 95% CI (0.27 - 0.56), residents of Gambela region (AOR=5.31:95%CI (2.81 - 10.04) and living in female headed households (AOR= 0.48: 95%CI (0.30 - 0.78) were found to be associated with family planning used. *Conclusion:* The prevalence of family planning use was low with only a third of women having the demand for family planning. Sex of household head, wealth quintile and religion and study region, were associated with family planning use. Targeted interventions should be put in place to enhance contraception.

Keywords: Family Planning Use, Religion, Wealth, Pastoralist Communities, Ethiopia

1. Introduction

The growth of Sub-Saharan African population is higher due to uncontrolled fertility. Fertility has been even higher in rural communities with pronounced rates in pastoralist areas. There is a concern that uncontrolled population growth in the sub-region will hinder the attainment of development and health goals in Africa, which rests on the assumption that fertility will decline only if the wider population adopts effective modern methods of contraception, as witnessed in

other parts of the world [1-3].

In addition to containing fertility level and enhancing economic growth, family planning is used for the good health of mothers and children. It is also a venue to achieve most of the millennium development goals by 2015. Family planning has positive effects on the sexual and reproductive health of women, including reduction of unplanned pregnancies and abortion [4].

With an estimated current population of over 77 million people, Ethiopia is the second most populous country in Africa next to Nigeria. The population was growing at a rate

of 2.6% [5]. According to Ethiopian Demographic and Health Survey (2011), the national total fertility rate (TFR) of 4.8 was substantially higher among rural women who gave birth to nearly three more children during their reproductive years than urban women (5.5 and 2.6 respectively). There was also high maternal mortality that was estimated at 676 per 100,000 live births [6].

Family planning averted one in every three maternal deaths through delayed motherhood, birth spacing, avoided unintended pregnancies, abortion and stop childbearing when they reached their desired family size [7]. It is thus a viable solution to control fast growing populations such as Ethiopia. Besides spacing and limiting the number of children it improves maternal and child health, empowers women and enhances economic development [8].

Low family planning use remains a major public health problem in Ethiopia especially in pastoralist communities in which health services particularly family planning were not properly utilized due to limited physical access of the population to health facilities and staff shortages. The aim of this study was to measure the level of contraception and identify factors associated with it in pastoralist communities of Ethiopia.

2. Methods

This study used the 2011 Ethiopia Demographic and Health Survey (EDHS) [6]. The 2011 EDHS interviewed 16,515 women aged 15-49 years. Two-stage stratified cluster sampling procedure was used to select 624 clusters in the first stage from the list of enumeration areas delineated during the 2007 population and housing census [5]. EDHS aimed at providing national, urban/rural and regional estimates of health and demographic parameters. The ICF International DHS questionnaire was adopted by Central Statistical Agency of Ethiopia. Data were downloaded from the measure DHS website with the consent of ICF international.

The dependent variable for this study is current contraception while the main independent variables are socio-demographic, economic and maternal health care services. Data were analyzed using STATA version 11. Contraceptive prevalence rate was computed. Odds ratio along with 95% confidence interval in binary logistic regression was used to assess the association between independent variables and current family planning use.

3. Results

A total of 2,724 married women of reproductive age group living in rural areas of pastoralist communities were included in the survey. Regional disaggregation revealed that 813 (29.9%), 795 (29.2%), 631 (23.2%) and 485 (17.8%) were sampled from Afar, Benishangul-Gumuz, Gambela and Somali regions, respectively. About two third of women 1781 (65.4%) were Muslims while 541 (19.9%), 333 (12.2%) and 69 (2.5%) confessed in Protestant, and Orthodox churches and other denominations, respectively. The majority of study women, 2,148 (78.9%) belonged to households headed by

males. More than three-quarter 2127 (78.1%) of the respondents could not read and write during the time of the survey. More than half of the respondents 1,459 (53.6%) belonged to households in the poorest quintile (Table 1).

Table 1. Socio-demographic characteristics of study participants among rural pastoralist communities of Ethiopia, 2011.

Variables (n=2,724)	Frequency	Percent
Region		
Afar	813	29.9
Benishangul-Gumuz	795	29.2
Gambela	631	23.2
Somali	485	17.8
Religion		
Muslim	1,781	65.4
Protestant	541	19.9
Orthodox	333	12.2
Others	69	2.5
Sex of household head		
Male	2,148	78.9
Female	576	21.2
Educational status		
No education	2,127	78.1
Primary	560	20.6
Secondary and higher	37	1.4
Age of household heads		
<20	47	1.7
20-29	606	22.3
30-39	818	30.0
40-49	651	23.9
50 and above	602	22.1
Wealth index		
Poorest	1,459	53.6
Poorer	397	14.6
Middle	347	12.7
Richer	406	14.9
Richest	115	4.2

Only 299 (11.0%) of married women in reproductive age group used any methods of family planning during the interview. The prevalence of current contraception varied significantly across pastoralist regions of Ethiopia. Contraception was 16 (2.0%), 5 (1.0%), 158 (19.9%) and 120 (19.0%) in rural Afar, Somali, Benishangul-Gumuz and Gambela regions, respectively. The contraception prevalence rate was significantly higher among rural pastoralist women who were members of a male headed household compared to those residing in female headed households (12.6% and 4.9%). On the other hand, contraception significantly increased from 2.5% to 34.8% as household wealth increased from lowest to highest quintile in rural pastoralist communities of Ethiopia. Family planning use was 7.5%, 22.3% and 37.8% among rural pastoralist women who had never been into formal education, attained primary and secondary level of education respectively. About a third of women confessing Orthodox Christianity used family planning methods while only 6.1% of Muslims used the method. The level of contraception varied significantly across age groups of heads of households in rural pastoralist communities. Moreover, the level of contraception was significantly higher among rural women with low parity compared to those with parities of 4 children and above (13.2% versus 8.2%) (Table 2).

Table 2. Patterns of Family Planning Use by Basic Background Characteristics of Pastoralist Women in Rural Ethiopia, 2011.

Characteristics	Family planning use		P-value
	Yes (%)	Number (n=2,724)	
Region			
Afar	2.0	813	0.00
Somali	1.0	485	
Benishangul-Gumuz	19.9	795	
Gambela	19.0	631	
Sex of household head			
Male	12.6	2,148	0.00
Female	4.9	576	
Wealth index			
Poorest	2.5	1,459	0.00
Poorer	10.8	397	
Middle	19.0	347	
Richer	27.8	406	
Richest	34.8	115	
Educational Status			
No education	7.5	2,127	0.00
Primary	22.3	560	
Secondary and higher	37.8	37	
Religion			
Orthodox	34.2	333	0.00
Protestant	13.9	541	
Muslim	6.1	1,781	
Others	1.5	69	
Age of household head			
<20	14.9	47	0.00
20-29	12.9	606	
30-39	13.6	818	
40-49	10.0	651	
50+	6.3	602	
Number of living children			
<4	13.2	1,514	0.00
4 and above	8.2	1,210	
Women empowerment			
Not empowered	10.6	2,454	0.06
Empowered	14.4	270	

Table 3. Contraception, unmet need and demand for family planning use among pastoralist communities of Ethiopia, 2011.

Region	Contraceptive prevalence rate (CPR) in (%)	Unmet need for family planning Spacing	for family Limiting	Total Unmet need (4)=(2)+(3)	Demand for family planning (5)=(1)+(4)
	(1)	(2)	(3)	(4)	(5)
Afar	2.0	12.6	3.8	16.4	18.4
Somali	1.0	20.2	2.7	22.9	23.9
Benishangul-Gumuz	19.9	16.5	11.8	28.3	48.2
Gambela	19.0	15.2	7.8	23	42
Total	11	15.7	6.9	22.6	33.6

Factors Associated with Family Planning Use

Sex of the household head, wealth quintile, religion, region of residence, and age of the household head were associated with the current family planning use of married women in reproductive age group in rural pastoralist communities of Ethiopia. On the other hand, pastoralist women resided in female headed households were 52% less likely AOR= 0.48: 95% CI (0.30 - 0.78) to use family planning compared to those who were members of male headed households. The likelihood of contraception increased as the wealth quintile increased from poorest to richest in pastoralist communities of Ethiopia. The odds of family planning use among

The majority 246 (82.3%) of married women of reproductive age group used injectables while 24 (8.0%), 10 (3.3%), 8 (2.7%), and 11 (3.7%) used pills, abstain from sex periodically, implants and other methods of family planning, respectively (Table not shown). Sources of family planning methods for rural pastoralist married women of reproductive age group were disaggregated as 82 (28.6%) of them got from health extension workers, 80 (27.9%) from private clinics, 78 (27.2%) from government health centers, 26 (9.1%) from government health stations, 7(2.4%) from pharmacy, 5 (1.7%) from government hospitals, and 11 (3.1%) from other sources.

Table 3 revealed that the level of unmet need for contraception was 614 (22.6%) while 427 (15.7%) of the unmet need was for spacing and the remaining 187 (6.9%) was attributed for limiting. The total demand of family planning among rural married women of reproductive age group in pastoralist communities of Ethiopia was 33.6%. Unmet need was 28.3% in Beninshangul-Gumuz region while it was only 16.4% in Afar region of Ethiopia. Ethiopian Somali and Gambela regions had nearly equal contraception unmet needs levels of 22.9% and 23% respectively. The highest unmet need for spacing was documented in Somali region (20.2%) and the lowest was in Afar region (12.6%). On the other hand unmet need for limiting was a little higher in Benishangul-Gumuz region (11.8%) while it was only 3.8% in Afar region. The total demand for family planning was 48.2% and 42% in Benishangul-Gumuz and Gambela regions respectively while it decreased to a level of 23.9% and 18.4% in Somali and Afar regions respectively.

pastoralist women were more than twenty four AOR=24.28: 95% CI (13.43 - 43.90) times more likely among those in the richest quintile compared with those in the poorest quintile. Current contraception was also AOR=3.15: 95% CI (1.95 - 5.10), AOR=4.98: 95% CI (3.17 - 7.84) and AOR=7.55: 95% CI(4.95 - 11.50) times probable among pastoralist married women who were members of households in poorer, middle and richer households, respectively compared with those who belonged to the poorest households. Meanwhile, Muslim pastoralist women were 61% less likely (AOR=0.39: 95% CI=0.27 - 0.56) to use family planning methods compared to Orthodox religion followers. The odds of contraception were

also 53% AOR=0.47: 95% CI (0.32-0.69) times lower among Protestant religion followers compared with those confessed in Orthodox Church. Married pastoralist women resided in Gambela region were (AOR=5.31: 95% CI (2.81 - 10.04) more likely to use family planning compared to those lived in Afar region and pastoralist women lived in Somali region were 73% times less likely AOR= 0.27: 95% CI (0.09 - 0.76) to use family planning compared to those stayed in Afar

region. Pastoralist women lived in Beneshangul-Gumuz region were nearly five AOR=4.98: 95% CI (2.81 - 8.84) times more likely to use family planning compared with their counterparts resided in Afar region. Family planning use was also 69% (AOR=0.31: 95% CI (0.11 - 0.89) times less likely among pastoralist women who were members of households headed by elderlies aged 50 years and older compared to teen ager heads of households (Table 4).

Table 4. The Association between background characteristics and current family planning use in rural pastoralist communities of Ethiopia, 2011.

Variables	Family Planning use		OR (95%)CI	
	Yes	No	Crude	Adjusted
Household Head Sex				
Male	271	1,877	1.00	1.00
Female	28	548	0.35(0.23, 0.52)*	0.48(0.30, 0.78)**
Wealth quintile				
Poorest	37	1,422	1.00	1.00
Poorer	43	354	4.66(2.96, 7.35)*	3.15(1.95, 5.10)**
Middle	66	281	9.02(5.91, 13.77)*	4.98(3.17, 7.84)**
Richer	113	293	14.82(10.01, 21.93)*	7.55(4.95, 11.50)**
Richest	40	75	20.49(12.38, 33.92)*	24.28(13.43, 43.90)**
Region of Residence				
Afar	16	797	1.00	1.00
Somali	5	480	0.51(0.18, 1.42)	0.27(0.09, 0.76)**
Benishangul-Gumuz	158	637	12.35(7.31, 20.87)*	4.98(2.81, 8.84)**
Gambela	120	511	11.69(6.86, 19.93)*	5.31(2.81, 10.04)**
Age of household head				
<20	7	40	1.00	1.00
20-29	78	528	0.84(0.36, 1.95)	0.50(0.19, 1.36)
30-39	111	707	0.89(0.39, 2.05)	0.63(0.23, 1.71)
40-49	65	586	0.63(0.27, 1.47)	0.54(0.19, 1.50)
50+	38	564	0.38(0.16, 0.91)*	0.31(0.11, 0.89)**
Number of living children				
<4	200	1,314	1.00	1.00
4+	99	1,111	0.58(0.45, 0.75)*	0.82(0.60, 1.14)
Women Empowerment				
Not empowered	260	2,194	1.00	1.00
Empowered	39	231	1.42(0.99, 2.04)	0.86(0.56, 1.29)

** Statistically significant association at 5% level of significance.

4. Discussion

This study was conducted with the aim of determining the prevalence of family planning used and its determinants among pastoralist communities in Ethiopia. The study revealed that about one in ten (11%) of the respondents used any methods of family planning. The contraceptive prevalence rate estimated in this study was consistent with the finding of a study conducted in Jijiga District of Ethiopian Somali region [9] and about a half of the national estimate according to the 2011 Ethiopia Demographic and Health Survey report [6] but higher than the semi-pastoralist Chadian population in 2004 [10]. The variation in the level of contraception might be attributed to cultural, physical accessibility and living conditions of the respondents.

Injectables were the most commonly used method of family planning in Ethiopia and in this study as well [6]. However, in neighboring Eastern Sudan as well as Bangladesh oral contraceptive pills were the most commonly preferred modern contraceptive followed by progesterone injection [11, 12]. This might be attributed to the fact that

Ethiopian women had been busy in domestic chores and other labor intensive works and were less likely to use technologies to help them remember the time at which they should take the pills and used Depo-Provera that could serve for three or more months.

More than one in five of women had unmet need of contraception among married women in rural pastoralist communities of Ethiopia. Unmet need for spacing was two and a quarter times higher compared with that for limiting (15.7% Vs 6.9%) which was higher than the findings of similar studies in different low-income countries such as neighboring Eastern Sudan where unmet need for spacing contributed for more than two third of the total unmet need [13]. Only a third of women in rural pastoralist communities of Ethiopia had demand for family planning which showed that the target for contraception level of 80% for the year 2015 documented in the national Reproductive Health Strategy of Ethiopia is unlikely to achieve [14]. The low demand for contraception might be attributed to the large family size norm in this community. Polygamy, preference for a son, competition for large number of children by co-wives of polygamous husbands and engaging children in

household subsistence, animal husbandry and tillage might have contributed for the large family size in its turn.

In this study wealth quintile, sex of the household head, religion and region of residence were found to be associated with family planning use. The study identified that those women with highest wealth quintiles were more likely to use modern contraception than those belonging to low size households. A similar study in Pakistan documented higher household wealth quintile significantly increased the likelihood of practicing different types of modern contraceptive methods [15]. The possible explanation for the influence of household wealth on modern contraception used might be attributed to the fact that better income could help clients to cover their transport and service related costs to used family planning methods. They might also be able to purchase mobile phones and electricity and print media to access information on family planning methods.

Sex of the household head was found to be a predictor of family planning use among pastoralist communities of Ethiopia which might be attributed to less exposure of women who were members of female headed households. This study revealed the association of religion with family planning amongst pastoralist communities in Ethiopia. This could be due to the fact that polygamy is common amongst Muslims which prompted co-wives to compete for more children to inherit the largest gain of household wealth including plot of land and other fixed assets [16].

Moreover, there is male sex preference for children which agitated Muslim couples to have more babies until they had the preferred child which would be considered as the family head according to the prevailing culture in this community [15]. Indigenous residents in arid and malaria and other infectious diseases endemic areas at the peripheries of the country, where pastoralists live, are predominantly Muslim families who might have liked to replace dead children from infectious diseases that in turn inflated the number of children among this group of the population [17, 18, and 19]. On the other hand, Muslim scholars reiterated that family planning use is permitted according to the religious scriptures [20] as long as there are strong reasons calling for it though the prevailing perception by the wider Muslim pastoralist community members had not been in agreement with what is stated in the holy book. Sabek also argued that the reproduction was favored by Islam because it was a display of the nation. However, under certain circumstances, Islam approved birth control either by use of medication or other kind of proper contraceptives. Sebak indicated that birth control is allowed if the father has too many children to provide for. Birth control is also permissible if mother is too frail in health to bear pregnancy and labour pains or if either of the couple is afflicted with an infectious disease. Scholars believe that under such circumstances, birth control is not only permissible but also strongly recommended [21]. This study also showed significant association between region of residence and family planning use in pastoralist communities of Ethiopia. This might again be related to the indirect effect of religion as the likelihood of family planning use was low

in predominantly Christian pastoralist communities.

5. Conclusion

The study revealed that the prevalence of family planning use in rural pastoralist communities of Ethiopia is very low as compared to other rural areas of the country. Regional differences were also observed with Somali and Afar reporting low prevalence of family planning used. Sex of the household head, household wealth quintile, religion and area of residence were found to be significant predictors of family planning use among Ethiopian pastoralist communities. Focused awareness and creation campaigns involving religious leaders on the benefits of family planning to the health of women and children and to the community at large is recommended.

Authors' Contributions

AB and WM carried out the study, participated in the analysis and manuscript drafting. Both authors read and approved the final manuscript.

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