

*Full Length Research Paper*

## Status of modern contraceptive use among married women in Debre Birhan District, Ethiopia

Muluken Dessalegn<sup>1\*</sup>, Sileshi Behailu<sup>2</sup>, Maereg Wagnew<sup>3</sup> and Muluneh Yigzaw<sup>4</sup>

<sup>1</sup> Amref Health Africa, Ethiopia.

<sup>2</sup>South Denmark University, Denmark.

<sup>3</sup>Addis Ababa University, Ethiopia.

<sup>4</sup>Ethiopian Public Health Association, Ethiopia.

Received 30 April, 2014; Accepted 26 August, 2014

Unless evidence based decisions are made based on local contexts, the low prevalence level of contraceptive use and the corresponding higher total fertility rate will make Ethiopia to remain the most populous country in Africa. The purpose of this study was to assess the status of modern contraceptive use among married women in Debre Birhan district, Ethiopia. A community based cross-sectional study was conducted among married women of reproductive age. Systematic random sampling technique was used to choose 851 study subjects. Before data collection, ethical clearance was obtained from the institution, and data was collected by trained diploma nurses using pretested structured questionnaire and analyzed by statistical package for social sciences (SPSS), version 20. Logistic regression analysis was employed to identify the predictors of modern contraceptive use. Modern contraceptive prevalence rate among married women was 46.9%. Injectables were the most frequently used type of modern contraceptive method (62.9%), followed by intrauterine device (16.8%), pills (14%), norplant (4.3%), male condom (1.2%) and female sterilization (0.8%). Multiple logistic regression model revealed that the need to have more children [AOR 95% CI: 9.27 (5.43 to 15.84)], husband approval [AOR 95% CI: 2.82 (1.67 to 4.80)] and husband-wife communication about contraceptives [AOR 7.32, 95% CI (3.60 to 14.86)] were found to be an independent predictors for the use of modern contraceptives. There were no statistical significant differences between modern contraceptive use and other socio-demographic and reproductive health related variables after an adjustment. Modern contraceptive use declined among married women in the district. The culture of publicly discussing the use of contraceptives and breaking the silence among the people demands substantial efforts. Considering users of contraceptives as deviant also requires paradigm shift in thinking.

**Key words:** Debre-Birhan, married women, modern contraceptive, use.

### INTRODUCTION

Despite the introduction of modern contraceptives in Ethiopia in 1966 (Korra, 1997; Assefa et al., 2006)

\*Corresponding author. E-mail: mulusef@yahoo.com.

Author(s) agree that this article remain permanently open access under the terms of the [Creative Commons Attribution License 4.0 International License](http://creativecommons.org/licenses/by/4.0/)

contraceptive prevalence rate (29%) remained lowest (Central Statistical Authority, 2011). The country is the second most populous in Africa with a total fertility rate of 4.85 (Population Reference Bureau, 2009). The importance and benefits of slowing down population growth does not seem to get more attention by the government. Maternal and child health related problems are also rampant in the country. Unwanted pregnancy is among the prominent reproductive health related problems (USAID Health Policy Development, 2010) resulting in unsafe abortion to be the most significant cause for maternal morbidity and mortality (World Health Organization (WHO), 2004). Imagine how appropriate use of modern contraceptives would save the life of millions of women, but with this current rate of utilization, the country may not be successful in achieving one of the indicators of Millennium Development Goal 4 and 5 unless all stakeholders are able to exert substantial and multidimensional efforts collaboratively.

However, local government efforts complemented by strong support of NGOs working on reproductive health have not been able to bring the desired impact as demanded and expected. Much remains to be done in pinpointing the main local context contributing factors for the low utilization of modern contraceptives. Program implementers/stakeholders need to make evidence-based decisions based on reliable information for action if service provision needs to be improved. Reproductive health strategies need to be tailored taking the potential risk factors of the local situation into consideration, otherwise, the trend may continue as such and further damages may occur. Thus, the need to improve modern contraception use within the country in one way or the other is a must to do assignment for all potential stakeholders.

Currently, family planning service is offered as free of charge in both governmental and NGO health facilities in Ethiopia, including hospitals, clinics, health centers and health stations. But, Ethiopia is among countries with low contraceptive prevalence rate, with only 28% at national level among married women, respectively, (Central Statistical Authority, 2011). Factors that influence contraceptive use are multifaceted and challenging. Different studies evidenced that socio-demographic, socio-cultural and socio-economic factors (Beekle and McCabe, 2006; Ibnouf et al., 2007; USAID Ethiopia, 2010) mostly affected women's knowledge and use of contraception. More specifically, a woman's age (Kebede, 2006; Ibnouf et al., 2007; Chourn, 2008), number of living children (Ali et al., 2004), parity (Stephenson and Hennink, 2010), desire to have children (Ibnouf et al., 2007; Chourn, 2008; Stephenson and Hennink, 2010) educational level (Beekle and McCabe, 2006; Ibnouf et al., 2007; Chourn, 2008; Nega, 2008; Saleem and Pasha, 2009; Stephenson and Hennink, 2010), occupation (Ali et al., 2004; Kebede, 2006; Chourn, 2008; Stephenson and Hennink, 2010), and

income (Ali et al., 2004; Haile and Enqueselassie, 2006; Ibnouf et al., 2007; Chourn, 2008) majorly impact woman's use of modern contraceptive methods. Yet, these determinant factors and others to the use modern contraceptives have not been studied in Debre Berhan district. Existing information in the district on this regard is very often limited and scarce (Beekle and McCabe, 2006; Nega, 2008; Saleem and Pasha, 2009). Hence, the study aims to investigate potential risk factors that affect utilization of modern contraceptives so that program implementers would know where to act more to bring about the desired changes within a given period of time.

## METHODOLOGY

### Study design and area

A Community-based cross-sectional study was carried out among married women aged 15 to 49 year in Debre Birhan district, Ethiopia. The district had nine Kebeles (the smallest administrative divisions) with an estimated total population of 72,097 (Federal Democratic Republic of Ethiopia population and Census Commission, 2007) of whom 23% were estimated to be married. Based on information obtained from the District Health Office, family planning services were available in most of the health institutions (one hospital, one health center, and 18 clinics) including four health posts.

### Sample size and sampling

EPI INFO was used to calculate the sample size using single population proportion formula based on an assumption that 29% of the modern contraceptive prevalence utilization in Ethiopia, and design effect of 2 (The main reason of using design effect of 2 is to reduce the variability as a result of two stages that we passed from the District level to village and then household level). A total of 851 study subjects were selected from all married women who lived at least for six month in the district using systematic random sampling technique. Simple random sampling technique was applied for the selection of representative Kebeles. In cases of selected households with more than one eligible study subjects, only one was chosen using a lottery method. If an eligible study subject was not found from a selected household, the next household with an eligible study subject in the clockwise direction was included in the sample.

### Data collection

Pretested structured questionnaire which composed of closed-ended questions was used to collect the data on variables related to socio-demographic characteristics, reproductive history, modern contraceptive use and other related factors. Female diploma-holding nurses were recruited as data collectors and collected the data through face-to-face interview after being trained for two days on interview techniques, data collection methods and confidentiality and privacy issues. Oral consent was obtained from each participant once the purpose, confidentiality and anonymity of data for this study was explained to each individual. Study subjects who were not available in the household during the first visit were revisited two more times before the women in the next household made the substitution. Two immediate supervisors were assigned

to help the data collectors during the process of data collection. The questionnaire was developed and administered in Amharic, the local language.

### Data analysis

Data were entered and cleaned using EPI INFO software and then analyzed using SPSS 18. Univariate analysis was used to describe study variables accordingly whereas Bivariate regressions analysis with crude odds ratio (COR) along with the 95% confidence interval was used to verify the association between covariates and modern contraceptive use. Multivariate Logistic regression analysis on the other hand was carried out to determine the adjusted effect of each factor on modern contraceptive use. Variables with more than two categories were entered into the model in the form of two "indicator" contrasts comparing each category to the first group as reference. Variables that were statistically significant at the bivariate level were entered into a multivariate logistic regression analysis, and the strength was presented using odds ratios and 95% confidence intervals at the conventional P-value =0.05 level. The significance for variable removal and entry was set to 0.10 and 0.05 respectively. The Hosmer and Lemeshow test was used to check the goodness-of-fit of the model as well.

### Ethical clearance

Ethical clearance was secured from the Institutional Ethical Committee of Amref Health Africa and Debre Berhan University. Official letter of cooperation was taken from Amref Health Africa and Zonal Health Department where the study was undertaken. Consent was obtained from each respondent. Anonymity and confidentiality were ensured for information obtained from the charts reviewing.

## RESULTS

### Socio-demographic characteristics

Of all 851 married women who responded to the questionnaire, the majority of the respondents were Amhara by ethnicity and Orthodox by religion. The mean age of the respondents was  $29.5 \pm 6.6$  years. The proportion of illiterate respondents was as high as 22.3%, and more than three-fourth of the respondents were from urban areas Table 1.

### Reproductive history

The number of married women who ever experienced birth was eight times higher than their counterparts. The average number of living children per woman was 2.37. In addition, 498 (58.5%) of respondents had a desire to have one or more children in the future, and the average number of desired children was 3.54. Among the pregnant women, 21.6% reported as unwanted and resulted 5.3% abortion rate Table 2.

### Married women's awareness about modern contraceptives

Of all respondents, 98.5% heard about either of the

contraceptive methods. Their main sources of information were health professionals of the health centers (66.83%), radio programs (57.4%), television program (55.08%) and health extension workers (20.17%). The most commonly reported types of modern contraceptives were injectable (98.9%) and pills (97.3%). In addition, child spacing (70.5%), prevention of unwanted pregnancy (63%), limiting the number of children (48.6%) and prevention of human immune-deficiency virus/acquired immune deficiency syndrome (HIV/AIDS) (12.3%) were mentioned as an advantage of modern contraceptive methods among study participants and 735 (86.4%) of respondents still had a desire to know more about contraceptives while the remaining 116 (13.6%) of respondents did not have any desire to know more about it Figure 1.

### Communication about modern contraceptives

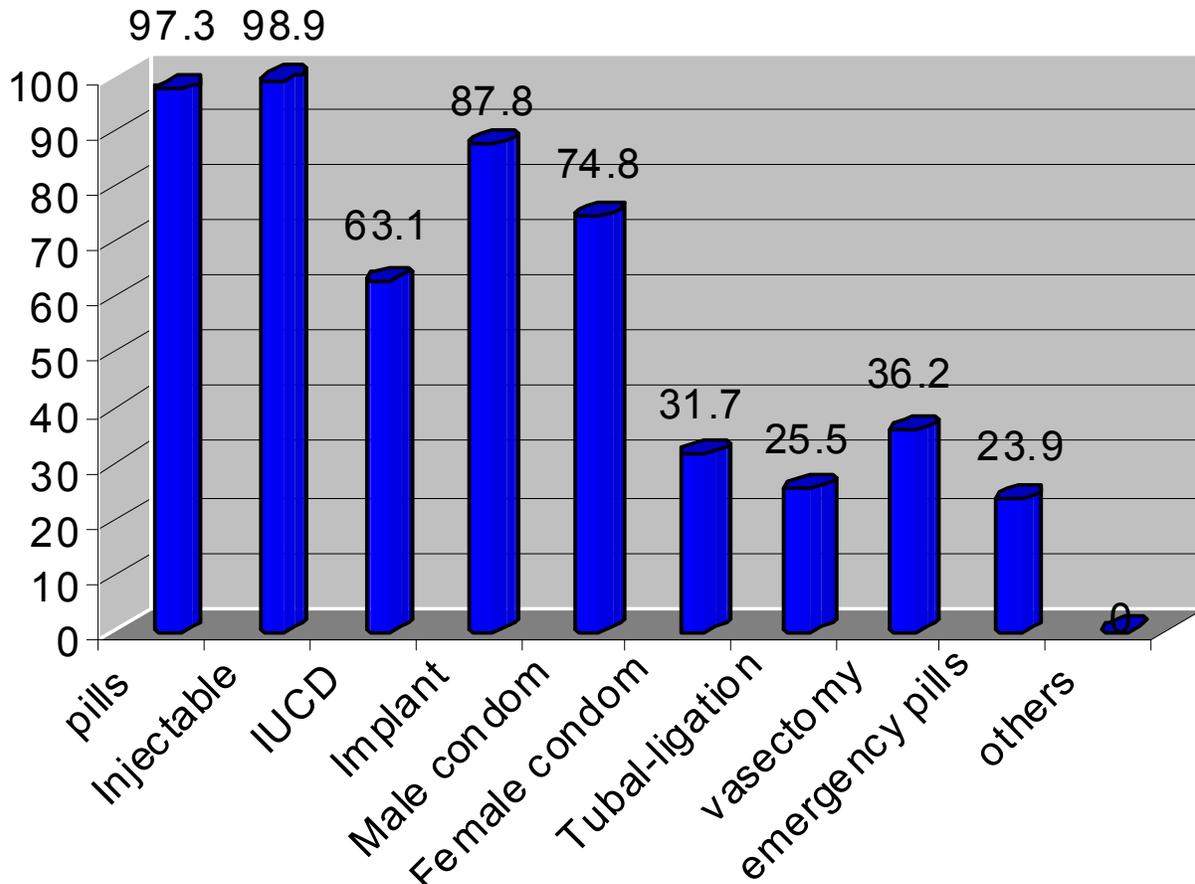
Only one-fifth of married women discussed contraceptive related issues with the nearby health extension workers whereas the proportion of married women who discussed with their husbands was more than  $\frac{3}{4}$  of the total respondents. However,  $\frac{1}{4}$  of the respondents did not get approval to use contraceptives of their choice by their husbands Table 3.

### Modern contraceptive use

More than half of the respondents, 448 (52.6%) had ever used contraception. Three hundred and ninety nine (46.9%) of them had been using it during the time of the interview. Injectable 251 (62.9%) were among the most frequently used type of contraceptives followed by IUD 67 (16.8%), pills 56 (14%), norplant, 17 (4.3%) and male condom 5 (1.2%), and the remaining 3 (0.8%) used permanent type of modern contraceptive method namely female sterilization. Of the total current modern contraceptive users, 335 (80.3%) were from the urban areas and the remaining 82 (19.7%) were from rural areas. Of currently married women who had ever used contraceptives, 49 (10.9%) of them discontinued taking contraceptives. The total number of married women who never used contraceptives was 403 (47.4%), and reasons for discontinuing and/or never using modern contraceptives were, need of more children (160), natural method (82), religion probation (56), husband disapproval (56) and health concern were the frequently mentioned.

### Relationship between socio-demographic characteristic of married women and use of modern contraceptives

Results of Bivariate analysis showed that education status of the women, average family income, educational



**Figure 1.** Married women's awareness about modern contraceptives in Debre Birhan, Ethiopia.

status of the husband and having access to television and radio were statistically significant to the use of modern contraceptives unlike the place of residence, age and educational status of the husband (P-value <0.05) Table 4.

#### **Relationship between children, communication and Knowledge related variables and use of modern contraceptives**

As shown in Table 5, all tested variables showed statistically significant associations with the use of modern contraceptives at a P-value < 0.01. For example, women who did not wish to have more children in the future were 6.42 times more likely to use modern contraceptive than women who wished to have children within two years (OR 6.42, 95% CI 4.21 to 9.78). Women who had three or four children were 2.45 times more likely to use modern contraceptive than women who had no children (OR 2.45, 95% CI 1.5 to 3.99). Likewise, those women who discussed about contraceptives more than three times with their husbands were 14.89 times more likely to use modern

contraceptive than women who did not discuss family planning with their husband (OR 14.89, 95% CI 9.08 to 24.43).

#### **Determinant factors**

As presented in Table 6, results of the multiple logistic regression model revealed that women's desire for more children, husband-wife discussion and approval of husband to use modern contraceptive were among the predictors of modern contraceptive use by married women. Married women who did not desire more children at all were 7.75 times more likely to use modern contraceptive methods than those women who desire children within two year. Similarly, women who had discussion with their husband on contraceptives were more likely to use modern contraceptives than their counterparts. But variables like educational status of the women and husband, residence, women and husband occupation and discussion with health extension workers including average monthly family income were not statistically significant to the use of modern contraceptives in the multiple logistic model.

**Table 1.** Socio-demographic characteristics of married women in Debre Birhan District, Ethiopia.

<b>Variable</b>	<b>Frequency (N=851)</b>	<b>Percentage (%)</b>
<b>Residence</b>		
Urban	652	76.6
Rura	199	23.4
<b>Age</b>		
15-19	21	2.5
20-24	174	20.4
25-29	273	32.1
30-34	159	18.7
35-39	145	17.0
40-44	62	7.3
45-49	17	2.0
<b>Ethnicity</b>		
Amhara	787	92.5
Oromo	38	4.2
Tigrae	17	2.0
Others	11	1.3
<b>Religion</b>		
Orthodox	796	93.5
Muslim	27	3.2
Protestant	22	2.6
Others	6	0.7
<b>Educational level</b>		
Can't read & write	190	22.3
Read and write	77	9.0
Primary school	280	32.9
Secondary school	225	26.4
12 <sup>+</sup>	79	9.3
<b>Occupational status</b>		
House wife/house work	495	58.2
Merchant	89	10.5
Farmer	53	6.2
Daily laborer	113	13.3
Government employee	71	8.3
Others	30	3.5
<b>Average monthly income of the family</b>		
≤ 300	213	25
301- 600	289	34
601- 927	137	16.1
≥ 928	212	24.9
<b>Having radio/TV</b>		
Radio only	293	34.4
TV only	80	9.4
Both radio and TV	324	38.1
None of them	154	18.1

**Table 2.** Reproductive history of married women in Debre Berhan District, Ethiopia

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Previous delivery status</b>		
Yes	758	89.1
No	93	10.9
<b>Desire for more children</b>		
Within two years	201	23.6
After two years	297	34.9
No more wanted	353	41.5
<b>Desired number of children</b>		
1-2	141	28.3
3-4	270	54.2
≥5	87	17.5
<b>Have living child</b>		
Yes	754	88.6
No	97	11.4
<b>Number of living children</b>		
1-2	424	56.2
3-4	287	38.1
≥5	43	5.7
<b>Number of living children</b>		
Male only	179	23.7
Female only	185	24.5
Both male and female	390	51.7
<b>Current pregnancy status</b>		
Pregnant	51	6.0
Not pregnant	800	94.0
<b>Status of their current pregnancy</b>		
Wanted	40	78.4
Wanted later	9	17.7
Not wanted	2	3.9
<b>Previous abortion status</b>		
Yes	45	5.3
No	806	94.7
<b>Way of abortion</b>		
Health professionals	25	55.6
Traditional medicine	13	28.9
Others	7	15.5

**Table 3.** Communication about modern contraceptives in Debre Birhan, Ethiopia.

Variable	Frequency	Percentage
<b>Discussion with health extension workers about Family planning</b>		
Yes	169	19.9
No	682	80.1
<b>Number of discussions with health extension workers</b>		
Once	25	14.8
Twice	20	11.8
More than twice	124	73.4
<b>Spousal approval of communication with reproductive health</b>		
Approved	160	94.8
Not approved	5	2.9
Do not know	4	2.3
<b>Spousal communication about contraceptives</b>		
Yes	648	76.1
No	203	23.9
<b>Number of discussion with Spouse about contraceptives</b>		
Twice	56	8.6
Three times	89	13.7
More than three times	340	52.5
<b>Spousal approval of use of modern contraceptives</b>		
Approved	585	68.7
Not approved	211	24.8
Do not know	55	6.5
<b>Husband knows wife's modern contraceptive use or not</b>		
Yes	720	84.6
No	131	15.4

**Table 4.** Relationship between socio-demographic characteristic of married women and use of modern contraceptives in Debre Birhan District, Ethiopia.

Explanatory variable	Modern contraceptive		Crude	95% CI		p-value
	Yes	No		Lower	Upper	
<b>Residence</b>						
Urban	335	317	1.35	0.98	1.86	0.067
Rural	82	117	1	-	-	
<b>Age</b>						
15-24	85	110	1	-	-	0.047
25-34	206	226	1.18	0.84	1.66	
35-49	108	116	1.21	0.82	1.77	
<b>Educational status of the mother</b>						
Can't read and write	72	118	1	-	-	0.017
Primary education	173	184	1.54	1.08	2.21	
Secondary and above	154	150	1.68	1.16	2.44	
<b>Educational status of the father</b>						
Can't read and write	35	61	1	-	-	0.044
Primary education	176	202	1.52	1.96	2.41	
Secondary and above	188	189	1.73	1.09	2.75	

Table 4. Contd.

<b>Husband occupation</b>						
Farmer	74	111	1	-	-	
Private employ	197	223	1.33	0.93	1.88	0.067
Government employ	128	118	1.63	0.12	2.39	
<b>Family monthly income</b>						
≤300	97	116	0.39	1.4	1.87	
301-600	115	174	0.47	1.33	1.67	0.001
601-927	63	74	0.6	1.39	1.93	
≥928	124	88	1	-	-	
<b>Television and radio access</b>						
Only radio	126	167	1.09	1.73	1.92	
Only television	36	44	1.18	1.69	2.04	0.018
Both television and radio	174	150	1.68	1.14	2.47	
No	63	91	1	-	-	

Table 5. Relationship between children, communication and Knowledge related variables and use of modern contraceptives in Debre Birhan District, Ethiopia.

Explanatory variable	Contraceptive		Crude OR	95% CI		p-value
	Yes	No		Lower	Upper	
<b>Desire for more children</b>						
Want within two years	35	166	1	-	-	
Want after two years	161	136	5.62	3.65	8.63	0.001
No more desire at all	203	150	6.42	4.21	9.78	
<b>Number of living children</b>						
None	30	67	1	-	-	
1-2	206	218	2.11	1.32	3.38	<0.001
3-5	150	137	2.45	1.5	3.99	
>5	13	30	2.95	1.44	2.11	
<b>Discussion with the husband</b>						
No discussion	22	181	1	-	-	
Once	80	83	7.9	4.63	13.59	<0.001
Twice	24	32	6.17	3.1	12.23	
Three times	54	35	12.69	6.87	23.45	
More than three times	219	121	14.89	9.08	24.43	
<b>Husband approves the use contraceptive</b>						
Yes	353	232	7.16	4.84	10.59	<0.001
No	37	174	1	-	-	
Don't know	9	46	0.92	0.42	2.04	
<b>Number of contraceptive know</b>						
<2	41	85	1	-	-	
3-4	154	185	1.73	1.12	2.65	<0.001
≥5	204	182	2.32	1.52	3.55	
<b>Discussion with HEWs</b>						
No	302	380	1	-	-	
1-2	24	21	1.44	0.79	2.63	0.008
>2	73	51	1.8	1.22	2.66	

**Table 6.** Multivariate analysis on of factors associated with the use of modern contraceptives in Debre Birhan District.

Explanatory variable	Contraceptive		COR (95% CI)	AOR (95% CI)	p-value
	Yes	No			
<b>Desire for more children</b>					
Within two years	35	166	1	1	
After two years	161	136	5.62 (3.65-8.63)	5.71 (3.48-9.37)	<0.001
No more desire	203	150	6.42 (4.21-9.78)	9.27 (5.43-15.84)	
<b>Number of living children</b>					
None	30	67	1	1	
1-2	206	218	2.11 (1.32-3.38)	1.132 (0.627-2.043)	
3-5	150	137	2.45 (1.50-3.99)	1.438 (0.744-2.777)	0.009
>5	13	30	0.97 (0.44-2.11)	0.355 (0.131-0.968)	
<b>Husband approves use of</b>					
Yes	353	232	7.16(4.84-10.59)	2.82 (1.67-4.80)	
No	37	174	1	1	<0.001
Don't know	9	46	0.92 (0.42-2.04)	2.50 (0.97-6.44)	
<b>Family monthly income</b>					
≤300	97	116	0.59 (0.40-0.87)	0.66 (0.38-1.12)	
301-600	115		0.47(0.33-0.67)	0.54 (0.33-0.88)	
601-927	63	74	0.60 (0.39-0.93)	0.50 (0.29-0.85)	0.038
≥928	124	88	1	1	
<b>Discussion with the husband</b>					
No discussion	22	181	1	1	
Once	80	83	7.90 (4.63-13.59)	4.50 (2.15-9.42)	
Twice	24	32	6.17 (3.10-12.30)	4.10 (1.70-9.92)	0.001
Three times	54	35	12.69 (6.87-23.45)	5.99 (2.65-13.56)	
More than three times	219	121	14.89 (9.08-24.43)	7.32 (3.60-14.86)	

## DISCUSSION

The need to have a well organized and coordinated birth control program for Ethiopia where its population increases alarmingly from time to time is an evident. Otherwise, its population is projected to reach 174 million by 2050 and become the 9th largest country in the world (Population Reference Bureau, 2009). A 6% reduction in contraceptive use among married women in the district also indirectly indicates that women's wish to have more children is still proactive in the area. The need for more children was the main reason for the discontinuation of modern contraceptive use that is also supported by findings from Dembia district, West Belessa, Khartoum, Cambodia and Pakistan (Beekle and McCabe, 2006; Kebede, 2006; Ibnouf et al., 2007; Chourn, 2008; USAID Ethiopia, 2010). Thus, the culture of having more children as indicators of wealth needs relentless efforts from all potential stakeholders. Women

and other family members need to shift their mind in how to raise children as healthy as possible rather than bearing many children which is beyond the control of the family.

The proportion of women who use modern contraceptives in Debre Birhan district was found to be consistent with a previous study conducted in Ethiopia in the town of Nazareth/Adama (Biruk et al., 2008) but found to be better than other similar studies conducted in Dembia District (Kebede, 2006), West Belessa Woreda (Nega, 2008) and the National average contraceptive use (Central Statistical Authority, 2011). A difference in time of study may be the main reason for the discrepancies in study findings of similar studies beside that of residence, availability, accessibility and knowledge and attitude level of the respondents.

Findings of this study also revealed that the study participants used five different types of modern contraceptives and this mix of modern contraceptive

use was better than the previous study conducted in Dembia (Nega, 2008). A greater choice of methods increases contraceptive continuation and overall use of modern contraceptive methods including quality of services (Population Reference Bureau, 2009). In addition, the preference of long acting contraceptives particularly Inter uterine device (IUD) was higher unlike pills preference in contrast to a study done at Dembia district (Nega, 2008). This suggests that the possibility of using long acting contraceptives in the district is promising. Use of pills where many of the users complain about its side effect and claimed to cause unintended pregnancies may get substituted in the near future, and long acting contraceptives on the other hand may become first choices of women in the district. Such an improvement in the use of long term acting contraceptives is of course consistent with a study conducted in Khartoum, Sudan, where the use of long-term modern contraceptives showed an improvement as compared to short acting contraceptives (Ibnouf et al., 2007).

Child spacing was found to be the main reason for the women to use modern contraceptive, consistent finding with the study in Khartoum (Ibnouf et al, 2007). This can also tell that the thought of women to have more children was as it is. If it were limiting the number of children, it would show to what extent they were interested to raise a limited number of children in appropriate manner. Spacing children does not exclusively reveal women's initiation of limiting their birth. Taking the current living standards of the country and the corresponding life challenges, birth limit would not be their primary reason. Therefore, both governmental and non-governmental organizations working in the area of reproductive health need to work intensively to bring the agenda of 'limiting birth' on the table. Family members also need to determine the size of their family through open discussion and agree on which type of contraceptive shall be used. The proverb 'children grow by chance' shall be dodged from the minds of people through continuous education and promotion including reliable evidences and models from the developed world.

Factors that determine the use of modern contraceptives of course vary on the basis of the local situation (WHO, 2004). Results of this study also indicated that recent lack of interest to have children was a strong predictor of modern contraceptive use like the study findings of Cambodia and Pakistan (Chourn, 2008; Stephenson and Hennink, 2010). Discussion with the husband and their approval were another determinant factor for modern contraceptive use among married women in the district. Therefore, it is advisable for organizations working in the area of reproductive health to take such issues into consideration if their primary objective is to bring about significant changes within short period of time.

There are also other factors whose effect was diluted

when adjusted for other variables; women's number of living children was among them. Despite the findings of this study different studies in Cambodia and Pakistan (Chourn, 2008; Stephenson and Hennink, 2010) suggested that the number of living children was an independent factor for the use of modern contraceptives. Religion, culture and perception/attitude may be the possible explanation for such variations. Similarly, those women who had more children in Debre Birhan may be at older age of reproduction and may perceive that they would have little risk of pregnancy.

Documented evidences within the country (Beekle and McCabe, 2006; Mon, 2009) and abroad (Ali et al., 2004; Mekonnen et al., 2008; Abraham et al., 2010; Stephenson and Hennink, 2010) also showed that husband-wife communication had significantly improved contraceptive use. Women discussing modern contraceptive use with their husbands were more likely to use modern contraceptives, indicating that men's involvement plays an important role in the use of modern contraceptives. Therefore, actors in the area of reproductive health had been advised to involve male partners equally, as they are culturally empowered decision-makers of the family, particularly in Ethiopia where men are the main decision makers of all issues. The high chance of women to use modern contraceptives hiding from their partners could not be a means, as the effect would be seen in the short run.

Monthly income of a family was not found to be an independent predictor for modern contraceptive use despite available evidences in the literature, indicating that modern contraceptive use is associated with income level both in developed (Chourn, 2008) and developing countries (Ibnouf et al., 2007). Women with high socioeconomic status are more likely to use modern contraceptive than those women with low socioeconomic status. However, in this study, sufficient evidence depicting the relationship between income level and modern contraceptive use was not found when adjusted for other variables. The concept that having children is a gift from God may be the reason for the absence of statistical differences between women with higher and lower income level. Stakeholders have to work to change such attitudes and opinions across the district so that people start to appreciate the joy of having sensible family size.

Generally, with all the efforts of governmental and non-governmental organizations including the provision of family planning services free of charge, the proportion of modern contraceptive users in the district remained low. This indicates the absence of breakthrough efforts and actions in the area of empowering women and modifying cultural beliefs. Women have to know that using modern contraceptives is their right like other basic human rights and needs. All family members have to discuss reproductive health issues openly, and considering it, as a taboo in the 21st century needs to be stopped through diversified efforts and actions.

**Conflict of interest**

The authors have no conflicts of interest.

**ACKNOWLEDGEMENT**

The authors want to thank Amref Health Africa for financial support and the study participants for their cooperation.

**REFERENCES**

- Abraham W, Adamu A, Deresse D (2010). The Involvement of Men in Family Planning an Application of Transtheoretical Model in Wolaita Soddo Town South Ethiopia. *Asian J. Med. Sci.* 2(2):44-50.
- Ali S, Rozi S, Mahmood MA (2004). Prevalence and Factors associated with practice of modern Contraceptive Methods among currently Married Women in District Naushahro Feroze.. *J. Pak. Med. Assoc.* 54(9):461-465.
- Assefa H, Tekleab M, Misganaw F (2006). Family planning in Ethiopia. In: Yemane B, Damen H, Kloos H (Eds.), *Epidemiology and Ecology of Health and Disease in Ethiopia* Addis Ababa: Shama Books. 2:125-304.
- Beekle A, Mccabe C (2006). Awareness and determinants of family planning practice in Jimma, Ethiopia. *Int. Nurs. Rev.* 53:269-276.
- Biruk T, Assefa H, Georges R (2008). The prevalence of Covert use of contraceptives in Nazareth/Adama town. *Eur. J. Contracept. Reprod. Healthc.* 13(2):47-184.
- Central Statistical Authority (2011). *Ethiopian Demographic and Health Survey 2011*. Addis Ababa, Ethiopia.
- Chourn T (2008). Factors influencing modern contraceptive utilization among currently married women in Cambodia. [www.li.mahidol.ac.th/thesis/2551/cd419/5038598.pdf](http://www.li.mahidol.ac.th/thesis/2551/cd419/5038598.pdf)
- Federal Democratic Republic of Ethiopia Population and Census Commission (2007). *Summary and statistical report of the 2007 population and housing census: population size by age and sex*. Ethiopia. Office of the Population and Housing Census Commission
- Haile A, Enqueselassie F (2006). Influence of women's autonomy on couple's contraception use in Jimma Town, Ethiopia. *J. Health Dev.* 20(3):145-151.
- Ibnouf A, Van den born H, Maarse JAM (2007). Utilization of family planning services by married Sudanese women of reproductive age. *East Med. J.* 13(6):1372-1381.
- Kebede Y (2006). Contraceptive prevalence in Dembia District, northwest Ethiopia. *Ethiop J. Health Dev.* 20(1):32-38.
- Korra A (1997). *Community Based Family Planning Services: A Performance Assessment of the Jimma FPCBD Project*. Ethiop J. Health Dev. 11(1):17-22.
- Mekonnen A, Sophie A, Dramaix-Willmet M, Bantayehu A (2008). Factors Affecting Continuity and Success of Community - Based Reproductive Health Service Program in Rural Community of Northeast Ethiopia. *East Afr. Med. J.* 85(10):478-499.
- Mon M (2009). Factors influencing married youths' decisions on contraceptive use in a rural area of Myanmar, Thailand. *Southeast Asian J. Trop. Med. Public Health* 40:5.
- Nega M (2008). Determinants of unmet need for contraception among currently married couples in West Belessa Woreda, North Gondar of Amhara, Ethiopia. *Ethiop J. Health Dev.* 20(1):155-65
- Population Reference Bureau (2009). *World Population Data Sheet*. Available at: [http://www.prb.org/pdf09/09wpds\\_eng.pdf](http://www.prb.org/pdf09/09wpds_eng.pdf).
- Saleem A, Pasha G (2009). *Modeling of the women's reproductive behavior and Predicted Probabilities of Contraceptive Use in Pakistan*. University of Azad Jammu & Kashmir, Pakistan.
- Stephenson R, Hennink M (2010). *Barriers to family planning service use among the urban poor in Pakistan*. Johns Hopkins Bloomberg School of Public Health <http://www.socstats.soton.ac.uk/choices/Pakistan%20barriers%20WP2.PDF>
- USAID Ethiopia (2010). *Health policy intervention. The Cost of Family Planning in Ethiopia*.
- USAID Health Policy Development (2010). *"How Contraceptive Use Affects Maternal Mortality"*. Available at: [http://pdf.usaid.gov/pdf\\_docs/Pnadv928.pdf](http://pdf.usaid.gov/pdf_docs/Pnadv928.pdf)
- WHO (2004). *Unsafe Abortion. Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality*. WHO, Geneva.