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Factors influencing modern contraceptive method preference among women of reproductive age in central zone of Tigray Region, Northern Ethiopia

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ABSTRACT

Background: Contraceptive method choice is a fundamental indicator of quality of care in a family planning program. One third of developing countries including Ethiopia have a much skewed method mix, which is risky for discontinuation, contraceptive dissatisfaction and unintended pregnancy. In Ethiopia the prevalence of contraceptive use is not only low but also highly skewed having a single contraceptive (injectable). Therefore the aim the study was to assess factors that influence modern contraceptive method preference among women of reproductive age in central zone of Tigray Region, Northern Ethiopia.
Methods: A facility based descriptive cross sectional study was carried out among 602 rural and urban reproductive age women. The data was entered using EPI info 3.5.4 version and exported to SPSS 16.0 version for analysis. Bivariate and multivariate logistic regression was used to see any association between different variables.
Results: Nearly three fourth (72.3%) of women prefer Injectable contraceptive. Only twenty percent of the total participants prefer Long Acting and Permanent Method (LAPM). Having more than two living children, discussion with husband, and attitude of women were significantly associated with their contraceptive preference.
Conclusions: The contraceptive method mix is highly skewed to single Short Acting Contraceptive (SAC) and preference to LAPM is low. For successful family planning program strong information, education and communication focusing on long term contraceptive methods should be done.

Key Words: Modern contraceptive, Preference, Reproductive age

1. BACKGROUND

Contraception is one of the major determinants of fertility levels. Its use has been increasing steadily since 1970 and is currently widespread throughout the world.[1] The provision of a wide range of contraceptive methods increases the opportunity for individuals to obtain a method that best suits their needs. Offering at least three modern methods of contraceptives is critical indicator to reproductive health commodity security. It assesses the percentage of Service Delivery Points (SDPs) that report the availability of at least three types of modern methods of contraceptives.[1,2] The modern methods under consideration are male and female condoms, oral pills, injectables, Intra Uterine Contraceptive Device (IUCDs), implants, male and female sterilization.[3]

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Many elements need to be considered by women, men, or couples at any given point in their lifetimes when choosing the most appropriate contraceptive method. These elements include safety, effectiveness, availability, and acceptability which may play a key role in determining the most appropriate choice.[4] Voluntary informed choice of contraceptive methods and contraceptive counseling are essential for successful use of contraceptive methods.[5]

Contraceptive use among married women of reproductive age has increased in all Regions of the developing world, reaching 66% in Asia and 73% in Latin America and the Caribbean, though only 22% in Sub-Saharan Africa.[6] Worldwide, the share of method mix for injectables rose from 2% to 8%, and climbed from 8% to 26% in Sub-Saharan Africa.[7] The Contraceptive Prevalence Rate (CPR) for reproductive age women in Ethiopia was 20% and the most commonly used modern contraceptive method was injectable which is currently used by 14% of all women and 21% of currently married women.[8] Despite good knowledge of contraception, the prevalence of contraceptive distribution in Ethiopia is low and highly skewed having a single contraceptive (injectable) accounted for 76 percent.[9] There is often concern when a single method predominates in a country, suggesting some systematic limitation of contraceptive choice.[10]

Even though the access for contraceptive choices is progressively increased in Ethiopia the method mix is highly skewed to Short Acting Contraceptives (SAC) preferably to Injectable. But there is no exhaustive information whether the uneven distribution of this contraceptive is the result of policies and programs, provider predisposition. In Ethiopia very few studies have been conducted to assess factors affecting modern contraceptive method preference. Therefore the aim of this study is to describe the method mix distribution and examine factors influencing modern contraceptive method preference among women of reproductive age in central zone, Tigray Region, Northern Ethiopia.

2. METHODS

The study was conducted in central zone of Tigray region which is located in the Northern part of Ethiopia, 1050 km away from Addis Ababa. According to the 2007 national census conducted by the Central Statistical Agency (CSA) of Ethiopia, the region's annual population growth rate is 2.5. The Central Tigray Zone has a total population of 1,245,223 of whom 631,972 were female and 176,445 urban dwellers.[11] In the zone there are a total of 57 public health centers and three hospitals. The study was conducted between December, 2012 and February, 2013.

A facility based descriptive cross-sectional study was conducted. The study populations were women of reproductive age who are living in the Zone and visited those randomly selected health facilities for family planning service during the time of data collection. Women came for contraceptive campaign, mentally deranged, unable to hear or communicate, rape or sexual violence were excluded from the study.

The sample size was determined by single population proportion formula assuming a marginal error of 5%, 95% confidence interval, and prevalence of preference to contraceptives. Accordingly, the sample size calculated using a study in Dares Salaam, Tanzania[12] having prevalence of preference to pill (33.1%) gives a sample of 340. A study in Kenya[13] having a prevalence of preference to Injectable (45%) gives a sample of 380. A study in Bahirdar, Ethiopia[14] having a prevalence of preference to Injectable (47%) gives a sample of 383. A study in Spain[15] having a prevalence of preference to pills (39%) yields a sample of 366.

From these sample size calculations the minimum highest sample size was 383. Since multistage sampling was used a design effect of 1.5 was taken which gives a total sample of 574, adding a 5% non-response rate, the total sample size for this study was 602.

In order to get rationalized proportion of sample, health facilities are classified in to rural and urban districts. There are nine rural and three urban districts in the studied zone and out of these two urban and five rural districts have been selected randomly. Four urban health facilities (two hospitals and two health centers) and five rural health centers were chosen randomly. The total sample was allocated using proportionate allocation to size technique to the nine selected health facilities. The study subjects were selected by systematic random sampling. First, the interval and random start number was calculated (K = 3, random start = 3) then a woman enter to FP room for contraceptive intake as third person at the commencement of data collection considered as the random start number and continue every third interval until sample of that facility completed.

The study questionnaire was first prepared in English then translated to the local language Tigrigna. The Tigrigna version questionnaire was used after pre-test was made on 29(5%) of the sample. Data was collected by direct face to face interviewer administered questionnaire. Participants were interviewed after they have got modern contraceptive from the selected health facilities. Nine Tigrigna speaking female nurse diploma graduate students have collected the data. Data collectors and supervisors were trained for two days on the objective of the study, study instrument and data

collection procedure. During the actual data collection process, supervisors have cross-checked filled questionnaire in the field randomly every day for consistency, completeness and whether data is collected from actual case or not. Double data entry was performed to identify any error during data entry.

The independent variables were socio-demographic characteristics, purpose of contraceptive (spacing, limiting), Attitude towards SAC or LAPM, Service delivery factors (choices, counseling) and the dependent variables were Preference to LAPM or SAC.

The collected data was first coded, entered, and cleaned in Epi info 3.5.4 version and then exported for analysis to SPSS 16.0 version. Simple frequency has been done to identify missing values and analytic cross tabulation was performed to identify the relationship between independent variables and the outcome variable. The association was measured using bivariate analysis. Those factors that show associations with the outcome of interest were further analyzed using multivariate logistic regression model. Chi-square test, and OR was used to compare the strength of association between variables. *p*-value less than .05 were considered statistically significant.

The research was started after a written official permission was obtained from Research and Ethical committee of Addis Ababa University, School of Public Health. Supportive letters were obtained from Tigray regional health bureau, Axum zonal health office and selected district health administrators. Data collection has been started after verbal/written consent was assured from respondents. Interview was conducted in places that give auditory and visual privacy and all the information obtained from each respondent was kept confidential.

Short acting contraceptive is define as a contraceptive that require more than one administration within a year and includes the pill, injectable, and barrier method like male condom and female condom meanwhile, Long Acting and Permanent Method is defined as a contraceptive used for more than one year or more after single administration and includes Tubaligation.

3. RESULT

A total 573 women were interviewed giving a 95.2% response rate. About 494(86.2%) of the participants were from health centers and the remaining 79(13.8%) were from hospital. The mean and median age of the study participants was 27.44 ± 6.8 and 26 years respectively.

Table 1. Socio-demographic and Reproductive health characteristics of the study participants in central zone of Tigray, Northern Ethiopia, 2013

Variables n = 573	Frequency	Percent (%)
Residence		
Urban	226	39.4
Rural	347	60.6
Age of respondents		
16-24	216	37.7
25-34	245	42.8
35-49	112	19.5
Religion of respondents		
Orthodox	536	93.5
Muslim	32	5.6
Protestant	3	0.5
Catholic	2	0.3
Marital status		
Married	474	82.7
Divorced or widowed	37	6.5
Single	62	10.8
Educational level of respondents		
No education	132	23.0
Elementary	184	32.1
High school	200	34.9
Certificate and above	57	9.9
Partner's Educational level		
No education	96	16.8
Elementary	171	29.8
High school	181	31.6
Certificate and above	113	19.7
I do not know	12	2.1
Occupational level		
Housewife	139	24.3
Gov't/private employee	78	13.6
Farmer or daily laborer	187	32.6
Self-employee	77	13.4
Student	92	16.1
Partner's occupation		
Gov't/private employee	195	34.0
Farmer or daily laborer	223	38.9
Self-employee	114	19.9
Student	41	7.2
Monthly income (ETB)		
75-1,500	385	67.2
1,501-3,000	147	25.7
3,001-9,000	41	7.2
Any son preference		
No	398	69.5
Yes	175	30.5
Total	573	100.0
Ever been pregnant		
No	124	21.6
Yes	449	78.4
Total	573	100.0
Age at first pregnancy		
13-17	94	20.9
18+	347	77.3
Not remembering	8	1.8
Total	449	100.0
Number of pregnancy		
1-3	290	64.6
4-10	159	35.4
Total	449	100.0
Number of live birth ever given		
1-2	298	67.4
3-9	144	32.6
Total	442	100.0
Number of alive children		
1-2	296	67.1
3-9	145	32.9
Total	441	100.0
Number of alive son		
1-2	273	77.3
3-8	80	22.7
Total	353	100.0

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Participants were asked about their perceived rank of wealth and according to their view nearly 10% of them perceived that they are classified as rich and almost two third (73.5%) of the respondents classify themselves as medium; 16.8% put their rank as poor. Of the total, 179(31.2%) reported that they have television, 38.7% have mobile phone and 26.2% have radio. Meanwhile, the mean and median travel time to reach on to health facility at one trip was 49 and 30 minutes respectively, the minimum travel time was 5 minutes and the maximum was 300 minutes. About 235(41%) of the participants practice their first sexual intercourse by the age 10-17 year and 56.9% after the age of 18 years. However, 2% of the respondent did not remember the age at first sexual intercourse. The mean age at first sex was 17.85 years $\pm$ 2.8 SD, the minimum and maximum age at first sexual intercourse was 10 and 30 years respectively.

In this study, the mean ideal desired number of children was 4.47($\pm$ 1.5 SD) children and the median was 4 children. Mothers who ideally desire to have 1-4 children in their life accounts 343(59.9%), and 210(36.6%) desires more than 5 children in their life while, 3.5% were not decide how many children ideally they want. Majority of the participants 398(69.5%) have no son preference, 449(78.4%) have history of pregnancy in their life time, 347(77.3%) become first pregnant in 18 year old or above, 290(64.6%) have 1-3 number of children, 298(67.6%) have ever given birth, 296(67.1%) have alive children currently, 273(77.1%) have alive son children (see Table 1).

About 392(68.4%) of the participants said that the decision for ideal desire number of children is made by both partners, 21.3% decide the ideal desired children themselves, 8(1.4%) said as the decision is made by husband, 51(8.9%) said as of God will. Mothers who ever experienced pregnancy were asked whether they need additional children or not and more than two third (77.5%) respond that they need additional children, 90(20%) did not need additional children. From those respondent who need additional children, 202(59.8%) of them need 1-2 additional children while 136(40.2%) need 3-6 children. Among the study participants who ever had pregnancy, 88(19.6%) experienced abortion incident in their life and a maximum of three abortions per women had been reported. Study participants were asked to mention the type of modern contraceptives they know, accordingly, injectable (98.3%), pill (85.2%), implanon (71.9%) and female condom (1.9%) were mentioned by respondents. Majority of the participants respond that their main source of information about modern contraceptive was health professionals (86.6%) and mass media (12.4%). Participants were asked if they heard information concerning contraceptive preference in the last six months and 90% responded that they have not heard about it. The participants point out that injectable form of contraceptive is highly known (88.8%), highly acceptable (82%) and highly used (84.4%) in their respective community. They also added that IUCD is the most not acceptable contraceptive in their community.

From the total participants, 480(83.7%) have started using contraceptive before the time of the survey while the remaining 93(16.3%) started using contraceptive at the time of survey. About 264(55%) used for 1-36 months while the remaining 216(45%) used for more than 36 months. Nearly 70.4% of the ever users had initiated by injectable. Of those who ever start contraceptive before the time of survey, 114(23.8%) have shifted from one contraceptive to other type of contraceptive within last year and side effect of the contraceptive 53(46.1%) and emerging of new and better contraceptive 20(17.4%) was the main reason for method shift. About 444(77.5%) of the respondents reported that they have discussed about their intention to use contraceptives with their partner and 328(73.8%) discussed with their partner about the type of contraceptive they will use. Injectable (67.8%) was the most widely chosen type of contraceptive by both partners after discussion (see Figure 1).

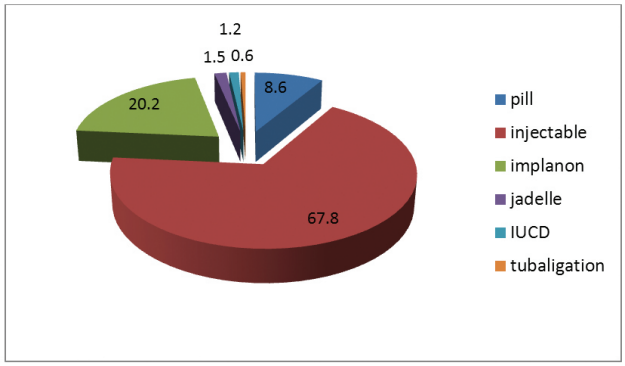

Figure 1. Type of contraceptive chosen by both partners, in central Zone, Tigray Region, Ethiopia 2013

One hundred ninety eight (34.6%) of the respondents decided alone for the type of contraceptive they will use while 47(8.2%) were not decide on the type of contraceptive they will use neither with their partner nor alone. From those respondents who decide on the type of contraceptive alone, injectable, implanon, pills and jadelle were chosen by 154(77.8%), 24(12%), 19 (9.6%) and 1(0.5%) respectively. About 448(80%) of the respondents said that they have got contraceptive choices, of these 126 (27.5%) have got at least two contraceptive choices and 332(72.5%) have got more than three contraceptive choices. According to the participant's view 541(94.4%) of them have taken the contraceptive of their preference while 32(5.6%) have not taken the contra-

ceptive they prefer. From those participants who have taken the contraceptive they prefer, 433(80%) of them preferred short acting contraceptives and only 108(20%) prefer LAPM. The method preference for injectable is 394(72.8%) and pills 39(7.2%). There was no participant who prefers male or female condom. Whereas 92(17%) prefer implanon, 9(1.7%) prefer jadelle/norplant, 5(0.9%) prefer IUCD and 2(0.4%) prefer female sterilization. Participants mentioned that adaptation to the contraceptive 148(25.8%), health providers recommendation 54(9.4%), suitability of the contraceptive or having no harm to health 266(46.4%), order of their husband 24(4.2%), being not familiar with other contraceptives or easy to use it 51(8.9%), no side effect 64(11.2%), previous side effect 22(3.8%), advice from friends and relatives 32(5.6%) and need to give birth after short time 13.4% were their reason for preferring the current contraceptive.

On the bivariate logistics regression analysis residence, age, educational status, occupation of the participants and their partner, son preference, number of alive children, desire of additional children, presence of a factor hindering use of contraceptive, purpose of the current contraceptive use, discussion on the type of contraceptive with husbands, health providers recommendation on LAPM, duration they like to prevent the pregnancy, purpose of contraceptive use, ever contraceptive use and attitude showed statistical association with preference to LAPM or SAC and hence further analyzed on multivariate analysis. Multivariate analysis revealed that the following factors were significantly associated with preference to LAPM. These are age (AOR = 0.19[0.04, 0.87]), educational status (AOR= 3.04[1.03, 8.93]), number of current live children (AOR = 2.56[1.39, 4.72]), attitude towards short acting (AOR = 0.36[0.21, 0.62]), attitude towards LAPM (AOR = 17.9[4.86, 65.02]), discussion with husband (AOR = 7.06[1.68, 30.62]), health provider recommend LAPM (AOR = 8.64[1.95, 38.22]), presence of factor hindering to use FP (AOR = 0.03[0.01, 0.50]) (see Table 2).

4. Discussion

This study revealed that contraceptive preference was highly skewed to the short acting contraceptive mainly injectable. Age, educational status, number of live children, attitude towards SAC or LAPM, discussion with husband, having prohibiting factor and health provider recommendation were found to have significant association with contraceptive preference.

Majority of respondents preferred SAC (80%) and this may happen as result of good attitude of women on SAC use and bad rumors about LAPM. SAC was first introduced in the nation hence women may adapt it better than LAPM or the community may have more information on SAC than LAPM. Influence of male partner, and relatives especially mother in law may also play key role for low utilization of the LAPM since they have interest on the wife to give birth soon after wedding. This may also happen due to social problems like husband influence, recent introducing of the LAPM, high acceptance of the injectable at the community level and health care service weakness. This finding is consistent with study done in Kenya[13] but, a little discrepancy have shown with study conducted in Indonesia.[16] This may be due to the difference in method acceptance among the two society, difference in contraceptive policy and nature of study area.

Majority of the respondents (72.3%) prefer injectable contraceptive which is similar with a study conducted in North West Ethiopia[17] which is probably due to high acceptance rate and positive attitude of the community towards injectable and may be due to less women empowerment to decide alone on long acting contraceptives. Moreover, injectable is more appropriate for women having husband and family disapproval of contraceptive use - better to hide out. The high preference of injectable may also attributed to its accessible and easy to administer compare to other contraceptive particularly the LAPM. Injectable is also appropriate for mothers who have no or flexible plan for how long they would like to prevent their pregnancy. Despite the low prevalence globally, its prevalence is high in developing countries 25%.[4] This method mix is higher compared to a study done in Mojo town, Ethiopia 55.5%[18] but it was consistent with EDHS 2011[8] and study conducted in northwest Ethiopia.[17]

The participants' preference to implanon jadelle and IUCD is low - 17%, 1.7% and 0.9% respectively and this method mix distribution is much lower compared to injectable. This could be due to the late coming of the LAPM hence not well introduced in to the community. Another reason could be due to the bad rumor in the society about implanon in which the community has misconception such as implanon can disappear, cause infertility and cannot be removed if the woman gains weight. Low preference to jadelle and IUCD could also associate with fear for minor operation during insertion and removal and believes that IUCD might be removed by operating the backbone if it stayed for longer time in the uterus and there is also doubt on IUCD as it may not prevent pregnancy as the year of service goes up. In general, it is clear that the preference to LAPM was low (20%) but higher as compare to study conducted in Mekelle 12.3%,[19] and in Bale Zone south east Ethiopia 8.7%.[20] This discrepancy may result from difference in study population, and study area, due to the local health care system difference and chronological effect. However it is lower compare to study conducted in Indonesia 29.5%.[16] This may occur due to awareness difference in social and cultural perspective and government's policy towards long acting contraceptives.

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Table 2. Factors associated with preference to LAPM or SAC among women of reproductive age in central zone of Tigray region, Northern Ethiopia, 2013

Variable	Preference to LAPM Yes (%)	AOR (95% CI)	Preference to SAC Yes (%)	AOR(95% CI)
Residence				
Urban	30(14.1)	1	183(85.9%)	1
Rural	78(23.8)	2.59(0.69, 9.81)	250(76.2%)	0.39(0.10, 1.46)
Age				
16-24	31(15.2)	1	173(84.9%)	1
25-34	50(21.4)	0.19(0.04, 0.87*)	184(78.6%)	5.24(1.15, 23.76)*
35-49	27(26.2)	0.57(0.10, 3.45)	76 (73.8%)	1.75(0.29, 10.50)
Education				
Illiterate	39(29.5)	3.04(1.03, 8.93)*	93(70.5%)	0.33(0.11, 0.97)*
Elementary	47(25.3)	2.74(0.98, 7.70)	139(74.7%)	0.37(0.13, 1.03)
High school	15(8.7)	0.76(0.27, 2.13)	158(91.3%)	1.32(0.47, 7.70)
> high school	7 (14)	1	43(86%)	1
Occupation				
House wife	15(11.7)	1	113(88.3%)	1
Gov't employee	14(19.4)	3.26(0.34, 31.55)	58(80.6%)	0.31(0.03, 2.98)
Farmer/laborer	54(29)	0.54(0.11, 2.68)	132(71%)	1.87(0.37, 9.34)
Merchant	15(20.8)	0.76(0.16, 3.57)	57(79.2%)	0.78(0.15, 4.09)
Students	10(12)	7.03(0.24, 205.87)	73(88%)	3.33(0.000)
Partner's occupation				
Gov't employee	24(13.6)	1	153(86.4%)	1
Farmer	58(26.5)	3.17(0.57, 17.62)	161(73.5%)	0.32(0.06, 1.76)
Merchant	20(19)	1.29(0.25, 67.97)	88(81%)	0.78(0.15, 4.06)
Students	6(15%)	0.000(0.000)	34(85%)	3.33(0.000)
Age at 1st pregnancy				
13-17	26 (29.9%)		61(70.1%)	1
18+	61(18.8%)	0.67(0.21, 2.19)	264(81.2%)	1.49(0.46, 4.86)
Son preference				
No	118(72.4)	1	63(16.5%)	1
Yes	45(27.6)	2.39(0.71, 8.04)	315(83.3%)	0.42(0.12, 1.41)
Live children currently				
1-2	13(5.9)	1	208(94.1%)	1
3-9	75(38.5)	2.56(1.39, 4.72)**	120(61.5%)	0.39(0.21, 0.72)**
Want additional children				
No	26(31.3)	0.16(0.01, 14.46)	57(68.7%)	6.12(0.07, 540.87)
Yes	59(18.1)	1	267(81.9%)	1
Attitude towards short acting				
low (1-5)	86(25.1)	1	257(74.9%)	1
High (6-10)	20(10.6)	0.36(0.21, 0.62)***	169(89.4%)	2.80(1.63, 4.83)***
Attitude towards LAPM				
Low (1-2)	25(14.8)	1	144(85.2%)	1
High (3-9)	65(40.1)	17.88(4.86, 65.02)***	97(59.9%)	0.06(0.02, 0.21)***
Purpose of FP use				
Spacing	83(17.8)	1	383(82.2%)	1
Limiting	25(34.2)	0.41(0.01, 105.98)	48(65.8%)	2.43(0.01, 624.97)
Discussion with husband				
No	6(5.4)	1	106(94.6%)	7.06(1.63, 30.62)**
Yes	80(25.6)	7.06(1.63, 30.62)**	232(74.4%)	1
Ever contraceptive use				
0-2 year	45(15.1)	1	254(84.9%)	1
2+	63(26)	2.71(0.95, 7.76)	179(74%)	0.37(0.13, 1.05)
Presence of factor hindering to use FP				
No	104(22.4)	1	360(77.6%)	1
Yes	4(5.2)	0.03(0.01, 0.50)*	73(94.8%)	3.63(1.98, 6.62)*
Health provider recommend LAPM				
No	20(12.6)	1	139(87.4%)	1
Yes	88(23)	8.64(1.95, 38.22)**	294(77%)	0.12(0.03, 0.51)**
Duration they like to prevent the pregnancy				
1-36 months	7(3.6)	1	188(96.4%)	1
37-120 months	72(28.9)	0.94(0.23, 3.89)	177(71.1%)	1.06(0.26, 4.39)
Limit	24(34.3)	11.67(0.19, 715.11)	46(65.7%)	0.09(0.001, 5.25)

* $p < .05$; ** $p < .01$;*** $p < .001$; 1 = reference category

Women whose age is between 25 to 34 years were 5.24 times more likely to prefer SAC compare to those whose age is below 24 years (95%CI: 1.15, 23.76). As reported in the EDHS 2011, age specific fertility rate is high in the age group 24 to 34 years meanwhile, women in this age interval want additional pregnancy soon compare to below or above this age. Women in this age group may also have the "one more to limit birth thought" hence they may not use the LAPM rather they may prefer the SAC. The difference in educational attainment also show statistical association in that the odds of preferring LAPM contraceptives was 3 times higher among those who have no education compare to those having above high school education. This may be the result of the difference in age at contraceptive initiation that is, those uneducated may start contraceptive use after having enough children for them. The other reason is that those educated may not easily convinced by the counselors especially on the bad rumors disseminated in the community as compare to the uneducated. Those educated individual may be from urban area which is possibly with contraceptive accesses and get the contraceptive within short travel so that they may not have time and work wastage. However, a DHS data in Kenya[21] showed that the probability to prefer long acting increases as the educational attainment increased. This difference may be resulted from variation in sample size and study design type. It may be also due to difference in FP program, policy, and socio-demographic factors.

The odds of preferring LAPM was 2.6 times higher among those having more than two live children compare to those who have less than three live children and this was similar with the study done in Bangladesh,[22] Kenya,[13,21] and Mekelle.[19] The possible reason might be because of women's believe that it has post contraceptive delay of fertility and the health care provider may recommend using LAPM based on the back grounds of the client. Mothers who have high attitude towards the SAC were 2.8 times more likely to prefer them compared to those who have low attitude. Similarly, women with high attitude on LAPM were 17.8 more likely to prefer the LAPM contraceptive than those who have low attitude. This clearly indicates that attitude is an important factor for current contraceptive preference and implies designing intervention targeting the attitude of women. Women who discuss with their male partner on the type of contraceptive that they will use is significantly associated with LAPM preference (7 times) compared to those participants who did not discussed with their male partner. This indicates that women are not able to decide the type of contraceptive they want alone rather their choice is influenced by their husband. This could be the result of long time existed social and culture oriented male dominance. The other possible reason is due to the high desire of children by male than female as indicated in EDHS 2011 so that they may not allow their wife to stay longer time without pregnancy and probably due to male's poor participation on family planning program. Reversely, women who did not discuss with their male partners are 7.06 times more likely to prefer SAC compared to those who discussed with male partners. This could be associated to lack of good communication between two partners and particularly injectable is thought to be important for covert use. Women who reported as having a factor that prohibits them to use contraceptive was 3.63 times more likely to prefer the SAC compared to those who have no any prohibiting factor. This may attribute to the male and family and relatives disapproval of contraceptive use because the SAC preferably the injectable is suitable for covert use under such conditions. This finding was consistent with study performed in Kenya.[13]

The limitation of the study is that, the findings may not be generalized to the whole community as it was only involved those women who come to health facility whereas the strength is the study covers relatively large geographic area. The finding is believed to provide valuable evidence for health care providers, nongovernmental organizations, contraceptive supply providers, policy makers, and program designers that ultimately enhance the provision of quality family planning services. It may also trigger researchers to conduct large scale study on this issue.

5. Conclusion

The contraceptive method mix was found to be highly skewed to single contraceptive. Preference to LAPM was very low compared to SAC. Age of the respondent, participants educational status, number of living children, discussion on the type of contraceptive with husband, attitude towards the LAPM and SAC, one has a factor that hinder to use contraceptives, and health providers recommendation to women to use LAPM were statistically significant with LAPM or SAC preference. The education of women and the empowerment of women both socially and economically is an important issue for women to prefer the type of contraceptive they want freely. The government should provide awareness on LAPM choice to all women by promoting information, education and communication of contraceptive method choice in each LAPM. Health providers should provide emphasis on educating the availability of LAPM as one type of contraceptives. Husband and relatives influence on contraceptive preference should be solved through continuous public education, community conversation and male involvement in contraceptive decision making and the issue should be raised at any public occasions and hence to get public attention.

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CONFLICTS OF INTEREST DISCLOSURE

The authors would like to declare that we have no competing interest.

REFERENCES

[1] UNFPA. The Global Programme to Enhance Reproductive Health Commodity Security. 2011.

[2] Nelago I, Kammila N. Family planning dialogue: Identifying the key determinants of women's use and selection of contraceptive in Namibia. African sociological review. 2008; 12(2): 98-116.

[3] AwusiVincent Oghenekobaro. Contraceptive choices among women in Warri, Nigeria. International journal of life science and pharma research. 2012; 2(2): 1-4.

[4] Eric E. Seibe, Jane T. Bertran, Tara M. Sullivan. Changes in Contraceptive Method Mix In Developing Countries. International family planning perspective. 2007; 33(3): 117-23.

[5] Charles picavet, Linda van der leestencielwijsen. Contraceptive decision -making background and outcome of contraceptive method. Rutgers WPF. 2011: 2-41.

[6] Mona S, Saifuddin A, John M, *et al*. Family planning trends in sub-Saharan Africa: progress, prospects, and lessons learned. 2009: 445-61.

[7] USAID. Contraceptive projections and the donor gap; meeting the challenge. Reproductive health supplies coalition. 2009.

[8] Ethiopian Demographic and Health Survey (EDHS). Central Statistical Agency Addis Ababa, Ethiopia. ICF international Calverton Maryland, USA; 2011.

[9] Lu Weiqun. Contraceptive choice among married women in Guizhou province. Socio- cultural and relationship factors. 2008: 1-24.

[10] Jane T. Bertrand, Janet R, Tara M. Sullivan, *et al*. Skewed Method Mix: A Measure of Quality In Family Planning Programs. Measure evaluation. May 2000.

[11] Population and housing census: Federal democratic republic of Ethiopia population census commission. Summary and statistical report of the 2007.

[12] Apaisaria H. Mbando. Contraceptive method choice among women attending at Amtullabhai family planning clinic in Dares salaam. Muhimbili University of Health and Allied Sciences. November 2011.

[13] Monica A. Magadi, Sian L. Curtis. Trends and Determinants of Contraceptive Method Choice in Kenya. Population council. September 2003; 34(3): 149-59.

[14] Hanna Y. Modern contraceptive preference and KAP study among women of reproductive group (15-49), Bahirdar Town and peri urban area. North West Ethiopia. 2002.

[15] Inaki L, Jose L. Doval, Ezequiel P. Factors affecting women's selection of a combined hormonal contraceptive method: the team-06 Spanish cross-sectional study. Contraception. 2007; 76: 77-83. PMID:17656174. http://dx.doi.org/10.1016/j.contraception.2007.04.014

[16] Joy Albert Sumakul. Determinants of contraceptive method choice among currently married women in Indonesia. 2004.

[17] Mesganaw F. Quality of family planning in north west Ethiopia. Ethiop.J.Health Dev. 2005; 19(5): 195-202.

[18] Abebe G, Nigatu R. Family planning service utilization in Mojo town, Ethiopia: A population based study. Journal of geography and regioan planning. June 2011; 4(6): 355-63.

[19] Mussie A, Tefera B, Tizta T. Factors associated with utilization of long acting and permanent contraceptive methods among married women of reproductive age in Mekelle Town, Tigray Region, North Ethiopia. Pregnancy and childbirth. 2012.

[20] Abulie T, Getu D, Mezgebu Y. Demand for long acting and permanent methods Of contraceptives and factors for non-use among Married women of Goba Town, Bale Zone, South East Ethiopia. Reproductive Health. 2012.

[21] Contraceptive use dynamics In Kenya: further analysis of demographic and Health Survey (DHS) data. African Population and Health Research Center Nairobi, Kenya Macro International Inc Calverton, Maryland USA; June 2001.

[22] Mehrab M, Khan A, Mizanur R. Determinants of contraceptive method-choice in rural Bangladesh. Center for health and population research. 1996.