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Contraceptive Discontinuation, Method Switching and Associated Factors among Reproductive Age Women in Jimma Town, Southwest Ethiopia, 2013

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Abstract

Background: Although there has been an increase in preference for modern methods in Ethiopia in recent years, high method discontinuation and switching are also common. Apparently, there is a lot of study on the prevalence rate of contraceptive among couples, but not sufficient knowledge about the reasons switches the method used and why they give up the contraceptives after using for some time. This implies that the study of discontinuation of contraceptive use, along with the associated factors for such discontinuation, becomes important that would have further implications for continuing the success of family planning programs in Ethiopia.

Methods and Materials: A community based cross sectional study was conducted among 423 randomly selected reproductive age women. Pretested structured questionnaire which contain calendar data format were used. Both SPSS version 20 and MS-excel were used to compute the descriptive and life table analysis. Descriptive and life table analysis technique were employed to estimate discontinuation. Cox-regression was used to evaluate statistical significance of covariate with a p-value less or equal to 0.05.

Results: The life table analysis depicted to be 11.5% and 27.4% women discontinued within 12 months and 24 months respectively. Contraceptive discontinuation was found to be highest for the contraceptive pills (30.0%) of twelve months rate. The rate of switching to other contraceptive method by the end of first year was much higher (9.6%) than rate of abandoning (1.5%). Divorced women [AHR: 2.52, 95% CI: (1.17, 5.41)], poor quality of services [(AHR: 1.87, 95% CI: (1.34, 2.61)], and education level [(AHR 1.59, 95% CI: (1.01, 2.49)] were predictors of contraceptive discontinuation.

Conclusion: Contraceptive discontinuation was relatively high. Being divorced, poor service quality and low level of education were predictors of contraceptive discontinuation. Further emphasis on quality of care, and expanding access to a range of contraceptive methods should be addressed.

Keywords: Contraceptive discontinuation; Method switching; Reproductive age women; Jimma

Introduction

Strengthening family planning services in developing countries is mostly pointed as precedence for reducing maternal and new born deaths; as well it is getting emphasis to achieve Millennium Development Goals (MDGs). However, family planning programs are facing challenges in addressing the service appropriately [1]. Conversely, the success of family planning programs is not only measured by the number of people who adopt contraceptive methods, but it also needs to be measured by number of people who maintain/continue use of contraception. Contraceptive use is the consequence of contraceptive acceptance, method choice, continuation, switching and failure [2]. In some countries, high contraceptive prevalence rate is counteracting by high rates of discontinuation, inconsistent and incorrect use, and contraceptive failure [2]. In that case looking for contraceptive discontinuation rate can help to inform the programmer and able to improve services quality, the need to counselling [3]. Contraceptive discontinuation is defined as "the termination of episodes of use of any reversible contraceptive method which could end up with abandoning use, failure or switch to other method" [4].

In recent years, contraceptive discontinuation is becoming as one of public health concern which contributes to unmet need for family planning. Because, unmet need could lead to unplanned pregnancy, miscarriage or abortion and unwanted births [5]. In countries with moderate to high contraceptive prevalence, the majority of unintended pregnancies are the result of contraceptive discontinuation or failure [5,6]. This could be worse in developing countries where the fertility rate has been declining slowly and contraceptives prevalence has been a bit increasing, but contraceptives discontinuation remains high; for instance a twelve month discontinuation rate for modern and traditional methods ranges from 49.7%-53.3%. [2,4,5,7-9].

Studies revealed socio-economic and demographic factors such as age, marital status, income, mass media-exposure; and partner involvement in decision making, and service quality were associated with the likelihood of contraceptive discontinuation. [5,10-12].

In Ethiopia, over a five-year period the contraceptive prevalence rates have increased by fivefold from 6-29%. However, the corresponding decline in the total fertility rate has not been

encouraging i.e. 5.5 to 4.8 [13]. Ethiopia Demographic and Health (EDHS, 2011) illustrated higher rate of 12 month contraceptive discontinuation for all methods (37%) which could possibly contribute for the lower contraceptive prevalence rate higher total fertility rate and unwanted pregnancies [13]. Among the major methods, the highest discontinuation rates were observed for pill 70% followed by the male condom 62% [13]. While there has been an observed increase in preference for modern methods in the Ethiopia in recent years, high method discontinuation and discontinuation of use after a year is also common, thus weakening any possible protection from unintended pregnancy that modern methods provide. Studying the patterns and determinants of discontinuation and method switching allows the identification of women who are at risk of unintended pregnancies, which in turn could help program managers in designing appropriate strategies that will suit women's specific needs in Jimma town, Southwest Ethiopia.

Methods and Materials

Study Setting

The study was conducted in Jimma town which is located 335 km from the capital city Addis Ababa in the Southwest Ethiopia. In the town, most people are engaged in commercial activities as a major livelihood means. There are 5 public health institutions (3 health centers and 2 hospitals) and 18 nongovernmental health institutions owned by NGO's and private owners which provide different services for the community. According to Central Statistical Agency (2007) report the projected total population of the town was 151,010; of this 31,906 were women in reproductive age group [14].

Study design and Participants

A community based cross-sectional study was conducted in Jimma town among randomly selected reproductive age group woman from March to June, 2013. prevalence of discontinuation rate to be 50%, margin of sampling error tolerated- 5% (0.05), and 10% non-response rate making the final sample size of 423 women of reproductive age group (15-49). Women who were using any reversible modern contraceptive method in the last three years and those women who received for more than three months duration were included in the study. A simple random sampling technique through a computer generated random number method was used to select study participants. Whenever there were more than two women in the same household lottery method was used choose the respondent.

Measurement

Prior to the actual data collection, census was conducted to identify households with eligible women and a list of sampling frame was prepared. Interviewer administered technique was used to collect the data using a pre tested structured questionnaire adapted from different literature in developing countries [13,15-17]. Five credentialed clinical nurses and two health officers were involved in the data collection after taking a two days intensive training on procedures and tools. The questionnaires were initially prepared in English and then have been translated into the local language, Afan Oromo and again it was translated back into English to check its consistency. The questionnaires were pre-tested before the actual data collection. Additional modifications were made to the questionnaire in terms of in terminologies and formatting based on the pretest findings. The supervisors checked each completed questionnaire and principal investigator monitored the overall quality of the data collection.

Data processing and analysis

Data were cleaned, edited, and entered onto Epidata version 3.2.1 and exported to SPSS windows version 20 and MS-Excel for analysis. Both, episodes (contraceptive use segments) and women were the unit of analysis. For each segment of contraceptive use, the different variables were created: name of the method, duration of use, reason for discontinuation, status in the month after the segment of use and destination method for switching. Life table analysis technique was employed to estimate contraceptive discontinuation and switching rates. This technique enabled to include censored episodes in the estimation procedures. In this study Episode (contraceptive use segment) - is defined as a period of uninterrupted use of contraceptives that may or may not have ended. One woman may report several episodes of contraceptive use in the contraceptive calendar. Moreover, we considered censored episodes- are episodes that we do not know whether they are discontinued or not for the study period. Statistical significance and relative contribution of each selected variables to the outcome of interest were assessed using multiple cox regression. 95% CI and P value less or equal to 0.05 were set to determine the level of statistical significance. Ethical clearance was obtained from Jimma University ethical review board; College of public health and medical sciences. In addition verbal consent for each participant was taken and all collected data were kept confidential.

Results

A total of 423 women were participated in this study. The majority, 314 (74.2%) of them were found between the ages of 20 to 34 years (Table 1).

Concerning their contraceptive use intention 272 (48.1%) episodes were used for spacing and 294 (51.9%) for limiting. All respondents contributed 566 contraceptive use segments/episodes. Of this, half 284 (50.2%) of episodes were for injectibles followed by pills 150 (26.5%), implanon 62 (11%), IUD (6.7%), and Condom 32 (5.6%). One third, 136 (32.2%) of the study participants contributed more than one episode in the last three years of their contraceptive history.

Characteristics		Count	Percentage (%)
Age in years	15- 24	87	20.6
	25-29	163	38.5
	30-34	67	15.8
	35-39	72	17

	41-49	34	8.1
Marital status	Single	38	9
	Married	364	86.1
	Separated*	21	4.9
Educational status	Had no formal education	66	15.6
	Can read and write	68	16.1
	Primary school	139	32.9
	Secondary school	101	23.9
	Above 12	49	11.5
Gravidity	0-1	115	27.2
	02-Mar	182	43
	≥ 4	126	29.8
Parity	0-1	118	27.9
	02-Mar	182	43
	≥ 4	123	29.1
Use intention	Spacing	272	48.1
	Limiting	294	51.9
N. B* Divorced and widowed			

Table 1: Socio-demographic characteristics of study participants, Jimma town, Oromia region, Southwest Ethiopia, June, 2013(n=423).

Contraceptive discontinuation

This finding showed that 11.5% of contraceptive methods were discontinued by the end of first year. More than one fourth (27.4%) of episodes were discontinued by the end of second year. Pills discontinuation (60%) was higher than the rest methods. As the duration of contraceptive use increase the proportion of method discontinued from its use also increases (11%-35%); particularly for Injectibles (10%-28%) and IUD (5%-28%). Discontinuation rates were not only varied by method type but also by user characteristics. Twelve month discontinuation rate for all methods combined was almost similar among different age categories except for those aged 45-49 years (17.3%). By specific methods, 12 month discontinuation rate for pills was the highest among women between the ages of 25-29 years (9.5%); while 2.6% of women aged 20-24 discontinued for injectibles. Married women are more likely to discontinue than unmarried women i.e. 12.1% and 10.3% respectively. While all method discontinuation rates was higher for those women who have achieved above twelve grades. During the last 12 months, those women want to space their fertility had higher (12.4%) discontinuation rate than women who want to limit it (10.6%). Women who were used contraceptive by the decision of their husbands were more likely to discontinue than women who decided jointly with their husbands (25.1% *vs.* 10.6%).

Side effects and need for more effective methods were primary reasons of discontinuation by the end of 1st year of use (account 3.5% each). However, by the end of 2nd and 3rd year of use, (8%) and (14.1%) of women discontinued contraceptive use due to desire for pregnancy respectively. For injectable users desire for pregnancy (8.3%) was frequent reason for 24 month discontinuation followed by side effects (6.6%). Conversely, for pills users need for more effective method accounts 17.8% of 24 month discontinuation rates. While, for condom users need for more effective method (12.4%) and contraceptive failure (10.3%) were the major reasons for discontinuation by the end of 2nd year of contraceptive practice.

Regarding their age, women of 20-24 years old were discontinued due to desire for pregnancy (13.5%), but those women 40-44 years women mostly discontinued for the need of more effective method (10.4%). Desire for pregnancy was also the major reason for women with higher education (14.3%) to discontinue contraceptive use. There was no report from these women regarding contraceptive failure related to long acting contraceptive users (IUD and Implanol).

Method switching

Contraceptive method switching accounts more than 83% of all discontinuations over 12 month of use. Of all contraceptive use segments 9.6% of them switched to other method by the end of their first year of use. The highest 12 months switching rate was observed for pills (19.9%) followed by condom (12.4%), while it was much lower for Implanol (3.3%) and IUD (5.1%). One year switching rate was higher for widowed women (15.3%) than married women (10.1%), and unmarried (8.1%). By the end of 1st year of use, women who use contraceptive for spacing had slightly higher switching rate (10.6%) than those who want to limit (8.6%).

Factors associated with contraceptive discontinuation

In the multiple cox-regression model analysis quality of service, contraceptive use intention, method type and educational status were independently associated with contraceptive discontinuation. Those women who want to space were 1.37 more likely discontinue their contraceptive use than their counter parts (AHR: 1.37, 95% CI: 1.00, 1.87). Women who had received poor quality of services discontinue at a rate of 1.87 times higher than their counter parts (AHR: 1.87, 95% CI: 1.34, 2.61). The likelihood of discontinuation among divorced women were higher (AHR: 2.52, 95% CI 1.17, 5.41) when compared to the married one. Pills users were more likely to discontinue than injectable users (AHR: 2.99, 95% CI: 2.16, 4.15). Women who attained primary education were more likely to discontinue their contraceptive use (AHR 1.59, 95% CI: 1.01, 2.49) than women with no education (Table 2).

Variables		Discontinuation		Crude hazard ratio (CHR) and 95% CI	Adjusted hazard ratio (AHR) and 95% CI
		Yes	No		
Use intention	Spacing	99	173	1.41 (1.05,1.90)	1.37 (1.00, 1.87)*
	Limiting	80	214	1	1
Quality of service	Yes	125	308	1	1
	No	54	79	1.64 (1.19,2.26)	1.87 (1.34, 2.61)*
Marital status	Single	12	38	1	1
	Married	147	337	1.22 (0.68,2.20)	1.35 (0.74, 2.46)
	Divorced	16	10	2.48 (1.17,5.25)	2.52 (1.17, 5.41)*
	Widowed	4	2	2.98 (0.96,9.26)	2.73 (0.86, 8.64)
Method type	Injectibles	69	215	1	1
	Pills	82	68	2.9 (2.15,4.09)	2.99 (2.16, 4.15)*
	Implanol	11	51	0.72 (0.38,1.37)	0.69 (0.36, 1.32)
	IUD	9	29	0.94 (0.47,1.88)	0.99 (0.49, 2.00)
	Condom	8	24	0.94 (0.45,1.96)	1.10 (0.52, 2.34)
Educational status	Illiterate*	56	127	1	1
	Primary	55	126	1.00 (0.69,1.45)	0.90 (0.62, 1.32)
	Secondary	36	93	0.92 (0.60,1.40)	0.78 (0.50, 1.21)
	Above 12+	32	41	1.5 (0.99,2.36)	1.59(1.01, 2.49)*
N.B* Statistically significant					

Table 2: Cox regression analysis of factors associated with contraceptive discontinuation among reproductive age women in Jimma town, Oromia region, Southwest Ethiopia, June, 2013.

Factors associated with method switching

While those factors associated with method switching, those women who use contraceptive for spacing were 1.54 times more likely to switch than those who use contraceptive for limiting (AHR: 1.54, 95% CI: 1.03, 2.30). Similarly, those women who got poor quality of services had more likelihood to switch their use (AHR: 1.81, 95% CI: 1.18, 2.76) than their counter parts (Table 3).

Variables		Switching		Crude Hazard ratio (CHR) and 95% CI	Adjusted hazard ratio (AHR) and 95% CI
		Yes	No		
Use intention	Spacing	61	211	1	1
	Limiting	45	249	1.54 (1.04, 2.26)	1.54 (1.03, 2.30)*

Quality of service	Yes	74	359	1	1
	No	32	101	1.59 (1.05, 2.41)	1.81 (1.18, 2.76)*
Method type	Injectable	36	248	1	1
	Pills	56	94	3.67 (2.41, 5.59)	3.52 (2.31, 5.36)*
	Implanon	7	55	0.87 (0.39, 1.97)	0.82 (0.36, 1.85)
	IUD	3	35	0.59 (0.18, 1.93)	0.62 (0.19, 2.03)
	Condom	4	28	0.94 (0.33, 2.66)	1.11 (0.39, 3.17)
N.B* Statistically significant					

Table 3: Cox regression analysis of factors associated with method switching among reproductive age women in Jimma town, Oromia region, Southwest Ethiopia, June, 2013.

Discussion

This study showed that 12 months and 24 months of all method contraceptive discontinuation rate was 11.5% and 27.4% respectively. This finding was lower when compared to the national EDHS (37%), Colombia 53.3%, Bangladesh (50.1%), Peru (49.7%), Ghana (43%), and Egypt (33%) and developing countries (13%). There are two possible explanations for this; first, the difference in the study population while this study focuses on urban women the other studies includes rural women, and second, the quality and access to contraceptive use [5,13,18-20]. Differences in rate of discontinuation by type of methods were observed so that by the end of 1st year 30.0% of pills and 15.3% of condom were stopped. This finding was consistent with other similar studies which revealed higher probability of discontinuation for pills and condoms [15,21]. The reasons could be due to these methods require no provider involvement to stop using and are therefore particularly prone to early discontinuation. These results suggested the type of method choice and its characteristics play an important role in contraceptive discontinuation [13,16,17,21]. The study revealed variation in contraceptive discontinuation by the level of education, which is comparable with other studies which found variation in contraceptive discontinuation based on educational status [8,15,20,22,23].

Conversely, women who discontinued are largely between the ages of 20-39 years. This is not similar with the other study which showed women under age 25 have higher contraceptive discontinuation rates than women 25 years of age or older [8]. It might be due to these groups of women tending to use short term contraceptive methods. However, this result is in line with other study which showed the women who have discontinued contraception were somewhat concentrated in the 25-34 ages [24].

Likewise, other studies in Ghana and Bangladesh showed women whose contraceptive intent was to limit their fertility experience longer durations of contraceptive use than those who are using contraception for child spacing purposes [2,22]. This may suggest that the motivation for contraceptive use is an important factor. Never married women were less likely to experience contraceptive discontinuation than women who were married. This could be due to single women are more likely to be careful about not getting unwanted pregnancies [2,24-27].

Contraceptive discontinuation was lower for those women who had quality service than their counter parts i.e. women without service quality discontinue at a rate of 1.87 times higher than the rate of discontinuation of those with quality service, which is also supported by related studies [5,28-30]. Even if women who were using contraceptive by joint decision with their husband had lower discontinuation probability [31] the highest were seen for those women who begun use by the main decision of their husbands [26,32].

Side effects and wanting a more effective method were the most common reason for discontinuing a method while in need, which is in line with other studies [13,19,30]. Side effect related discontinuation was much higher for pills and injectibles. Evidences from other countries including, Pakistan, Kenya and Malawi illustrated their concern about side effects as the most commonly cited reason for discontinuation of these most commonly used hormonal methods of contraception i.e. pills and injectables. In particular, condom users discontinued as a reason of wanting more effective method which might be due to fear of failure and its outcome [15,17,33].

Even if the share of contraceptive failure for discontinuation is not as high as a reason of side effects and desire for pregnancy. Correspondingly, other similar studies, revealed failure rate was highest for condom users followed by Pills and injectibles but none for the long acting methods (implanol and IUD) [19,15,33]. Analysis of the levels of switching patterns in eight countries showed switching constitutes between 15% in Armenia and 50% in Bangladesh, of all discontinuations in the first year [4]. Conversely, the majority of method switches from pills in the first year were to a more effective method in Kenya, Zimbabwe, Egypt, and Indonesia [15,20]. As it is clear that all researched faced some limitations, for this study some could be mentioned. Among the limitations, we did not collected data about the calendar method and other traditional methods which women in the study area could use as birth control methods. Conversely, there might introduce recall bias as women were asked to recall events that occurred up to three years ago.

Conclusion

The findings of this study imply that there is disparity in contraceptive discontinuation by contraceptive methods; the highest discontinuation rate was for pills and injectable. A lower discontinuation might indicate the importance of promoting long term contraceptive methods. The contribution of side effects and searching for effective contraceptive methods as a reason for discontinuation were dominant. This informs the need for better awareness creation

not only on the type of contraceptive methods but also the cons and pros of each method. Thus, family planning interventions designed to unwanted pregnancy should address the issue of contraceptive discontinuation. This could be addressed by better counselling about side effects of contraceptive methods as well expanding access to a range of contraceptive methods. Finally we would to recommend for other researchers to conduct further by applying strong study designs such as prospective cohort.

Author's Contribution

ZS conceived and designed the study, performed analysis and interpretation of data and drafted the manuscript. LM, WS and SS participated in critical review of the manuscript. All authors read and approved the final manuscript for publication.

Conflict of Interest

We authors declare that we have no competing interests regarding the publication of this paper.

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