

Implanon Discontinuation Rate and It's Associated Factors in Debre Tabor Town, North Central Ethiopia

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Abstract: Family planning could avert a significant number of maternal mortality and contributes to child survival with its focus on women's rights. Generally, a long-acting reversible contraceptive is more effective and cover all the advantage and eliminates the disadvantages of other types of contraceptives. The acceptance and utilization of long-acting reversible contraceptive including implanon were very low in many developing countries including Ethiopia. The purpose of this study was to assess the level of discontinuation and to identify variables influencing Implanon utilization. A cross-sectional design was conducted between January to December 2018 in Debre Tabor town. In the community, a total of 132 women who have been using or discontinuing Implanon during the study period were selected. Face-to-face interviews using a structured questionnaire were conducted for data collection. The data were entered, cleaned and analyzed by a statistical package for social sciences version 20. The data were processed and analyzed by a statistical package for social sciences version 20 using descriptive and analytical statistics including chi-square test that identified the association between some selected independent variables and implanon discontinuation. The overall implanon discontinuation in the year 2018 was 16.7% in Debre Tabor town. The most frequently mentioned reason for implanon discontinuation was health-related issues (31.8%), side effects (27.3%), desire to have more children (22.7%) and method shift (18.2%). Factors associated with Implanon discontinuation were developing side effects, women who have living children and not providing counseling service. Implanon discontinuation among Implanon users in Debre Tabor town during the year 2018 was found to be high and the most frequently mentioned rationale was health-related issues. Health care providers should provide counseling before Implanon insertion.

Keywords: Implanon, Discontinuation, Ethiopia

1. Introduction

In 2015, there were an estimated 275,288 maternal deaths in 2015, yielding an MMR of 210 maternal deaths per 100 000 live births and Sub-Saharan Africa region accounting for a greater proportion of the global maternal deaths [1]. Even though Ethiopia is progressing in terms of reducing under-five mortality, maternal mortality shows little or no changes in the last decades. This could be attributed to the high fertility rate due to inadequate family planning service quality and accessibility that exacerbated the burden of maternal and child health [2-4].

In the less developed regions, 67% contraceptive prevalence rate is expected to achieve the desired level of fertility in the region by 2025. However, in sub-Saharan African countries evidence reported a high level of unmet need (26.8%) and

fertility level (5.3 children per women) [3, 5, 6].

In Ethiopia, 6% of married or in-union women of reproductive age in 2000 were using modern contraception which reached 35% in 2016. The method specifically, 3% of women in 2000 relied on injectables that increased to 23% in 2016 followed by implanon utilization from less than 1% of women using in 2000 to 8% in 2016. However, in 2016, 22% of married or in-union women are estimated to have had an unmet need for family planning and a high fertility rate of 4.6 children per woman [7].

Furthermore 35% of modern contraceptive users discontinued before 12 months of contraceptive use by wishing to become pregnant (42%) and health-related issues (18%). This was consistent with a reported 520 number of implants use discontinuation due to the major reason of wanting to become pregnant (42.1%), health concerns/side

effects (24.1%) and wanting a more effective method (10.8%) [7].

Ethiopia has registered an increasing trend in contraceptive prevalence rate in the last decade and the contribution of the Health Extension Program in expanding access to family planning is clearly evident. However, the national contraceptive prevalence rate is still low. This could be attributable to inadequate provision of modern contraceptive and a limitation in providing a comprehensive FP service [8-10]. Although evidence was generated on modern contraceptives including implants, however, it was limited regarding the discontinuation of Implanon in the study area. Hence the objectives of this study were to assess the level of discontinuation and variables influencing Implanon discontinuation among Implanon users in the year 2018 in Debre Tabor town.

2. Material and Methods

2.1. Study Area

This study was conducted in Debre Tabor town which is the capital of South Gondar Zone and 666Km North Central of Addis Ababa. Based on the information from Debre Tabor town Administrative Bureau the town has four kebeles and a total population of 87,627, among them about 14,462 women were under the age of reproduction who is the target group for contraceptive use. In the town Implanon insertion and removal service was provided by zonal hospital (1), primary health care centers (3) and health posts (4) during the study period. There were a total of 1474 users of long-acting family planning methods in all health institution of the town in 2018 G. C. among them 314 were Implanon users.

2.2. Study Design and Period

The community-based cross-sectional study design was conducted among Implanon users' and discontinuers' between January 01 and December 30, 2018, in Debre Tabor town.

2.3. Sample Size and Sampling Procedure

The sample size was determined using a single population proportion formula by taking a discontinuation rate of 16% Implanon in Ofla Woreda in Tigray region [9]. However, the numbers of women who are using Implanon in January 2018 in Debre Tabor town in all health institutions were 314 women. Due to a small number of total populations in the study area, the reduction formula makes sample size 124 and by assuming a response rate of 90%, the final sample size becomes 136. Simple random sampling technique was used to select the study participants.

2.4. Data Collection

Pretested and structured questionnaires using face-to-face interviews were used for data collection. The questionnaire was first developed in English language and then translated

into Amharic (the local language), and back into English. The questionnaire was developed by adapting items from previous studies. The component of the questionnaire includes socio-demographic, contraception history, and the use of Implanon. It was pre-tested among 5% similar study population, based on which necessary improvement was made in clarifying vague terms. Each of the questions in the questionnaire was explained by translating into the local language for study participants to enable them to have the understanding and to give a proper response to the questions that were asked. Data were collected by two trained data collectors who were supervised by the principal investigator. Every day, questionnaires were reviewed and checked for completeness of data collection by principal investigator and inconsistencies and errors on skip pattern were corrected accordingly.

2.5. Data Analysis

Processed data were analyzed using descriptive statistics of frequency and percentage. Summary statistics were used to describe the study population in relation to the relevant variables and inferential statistics of chi-square test was done using a statistical package for social sciences version 20. A probability value of less than 0.05 was used to declare statistical significance.

2.6. Operational Definition

For this study, discontinuation of Implanon would refer to the removal of Implanon earlier than the prescribed time that is using for less than 2.5 years.

3. Results

In this study, a total of one hundred thirty-two (132) individuals provide a complete response and included in the analysis with a response rate of 100%.

3.1. Socio-Demographic Characteristics

Table 1 shows the sociodemographic profile of the study participants. The minimum respondents' age observed was 16 year and the maximum was 45 years, among whom more than one third 46 (34.8%) were between 25-29 years of age. One hundred sixteen (88%) of the participants were married and majority 121 (91.7%) of study participants were Orthodox Christians in religion. More than half (59.1%) participants were merchants by occupation followed by housewives who accounted for 37(28.1%). The monthly income of more than two fifths (46.2%) of respondents were less than one thousand Ethiopian birrs.

Table 1. Socio-demographic status of respondents in Debre Tabor town, North Central Ethiopia, 2018 (n=132).

Variables	Frequency	Percent
Age	<20	9
	20-24	27
	25-29	46

Variables		Frequency	Percent
Marital status	30-34	28	21.2
	35 and more	22	16.7
	Married	116	88.0
	Divorced	7	5.3
	Single	6	4.5
Religion	Widowed	3	2.2
	Orthodox	121	91.7
	Muslim	8	6.1
	Protestant	3	2.2
Women's Educational status	Illiterate	47	35.6
	Grade 1-8	70	53.0
	Grade 9-12	8	6.1
	College and above	7	5.3
Husband's Educational status (n=116)	Illiterate	38	32.8
	Grade 1-8	59	50.8
	Grade 9-12	14	12.1
	College and above	5	4.3
Women's occupational status	Merchant	78	59.1
	Housewife	37	28.1
	Gov.t/private employee	13	9.8
Monthly income(ETB)	Other	4	3.0
	<1000	61	46.2
	1000-3000	55	41.7
	>3000	16	12.1

3.2. Gynecologic History of Respondents

Among all respondent 111(84.1%) were having at least one living child among whom 79 (71.2%) women had two to four living children. Out of all respondents majority (81.8%) were intended to have a child or more children in the future; from which almost two in five (39.8%) of respondents were intended to have three or more children. There were 7(5.3%) women who had at least one history of abortion among whom five (71.4%) abortion were practiced once and the remaining 2(28.6%) encountered two episodes of abortion (Table 2).

Table 2. Gynecologic history of respondents in Debre Tabor town, North Central Ethiopia, 2018.

Variables		Frequency(132)	Percent (%)
Have children(n=132)	Yes	111	84.1
	No	21	15.9
Number of children (n=111)	1	24	21.6
	2-4	79	71.2
	5 and more	8	7.2
Intend to have /more children(n=132)	Yes	108	81.8
	No	24	18.2
Number of children intended to have (n=108)	One	28	25.9
	Two	37	34.3
	Three and more	43	39.8
History of abortion (n=132)	Yes	7	5.3
	No	125	94.7
Number of abortion (n=7)	One	5	71.4
	Two	2	28.6
	Three and more	0	0

Seventy-two (54.5%) respondents' had a history of only implanon use, they have no previous experience of contraceptive utilization other than Implanon. The rest 60 (45.5%) had used modern methods of contraceptives before Implanon insertion. Injectables, pills and other methods of modern contraceptive (IUCD and Implanon) were used by the women which account for 34 (56.7%), 24(40%) and 2 (3.3%) respectively. Majority (43.1%) of respondents were not used any contraceptive before Implanon insertion because of the fear of side effects and also not in relationship/no sexual partner, the need to get pregnant and to have child, and husband's disapproval were the other reasons not to use any contraceptives before Implanon use which accounts for 17 (23.6%), 14 (19.4%) and 10 (13.9%) respectively (Table 3).

Table 3. History of contraceptive use by respondents in Debre Tabor town, North Central Ethiopia, 2018.

Variables		Frequency	Percent
Heard of other contraceptive methods (n=132)	Ever heard	132	100
	Never heard	0	0
Source where they heard contraceptive methods(n=132)*	Health personnel	104	78.8
	Mass media	81	61.4
	Friends/relatives	37	28.0
	Others	8	6.1
	Benefit	92	69.7
Type of information they know about contraception methods (n=132)*	Duration of action	73	55.3
	Side effects	41	31.1
	Effectiveness	22	16.7
History of other contraceptive utilization other than Implanon (n=132)	Yes	60	45.5
	No	72	54.5
The last method used before current Implanon insertion(n=60)	Injectables	34	56.7
	Pills	24	40.0
	Others	2	3.3
	Fear of side effect	31	43.1
Reason for not using any contraceptive before Implanon use (n=72)	Not in relationship	17	23.6
	Need to get pregnant / have a child	14	19.4
	Husband disapproval	10	13.9

3.3. Rate of Implanon Discontinuation

Of all respondents who used Implanon in the year 2018, 82 (62.1%) continues using Implanon. The remaining 50 (37.9%) participants removed the implant during the study period. Among 50 (37.9%) who removed implanon, about 22(44%) discontinue before 2.5 years and the rest 28 (56%)

discontinue after 2.5 years or more duration of implanon use (Figure 1). This makes the overall early Implanon discontinuation rate of 16.7%. The most frequently stated reason for discontinuation of implanon use was side effects, wishing to have children and the need to shift to other methods (Figure 2).

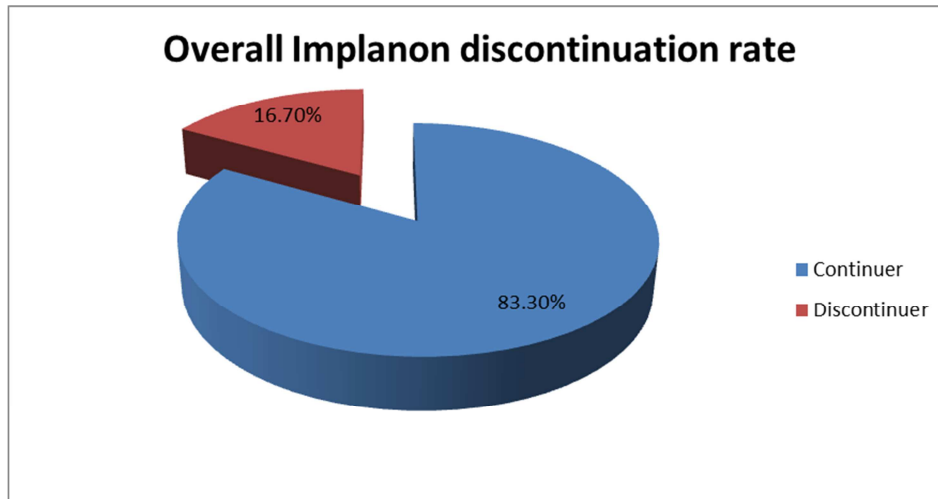


Figure 1. The overall discontinuation rate of implanon among Implanon users in 2018 in Debre Tabor town, North Central Ethiopia, 2018

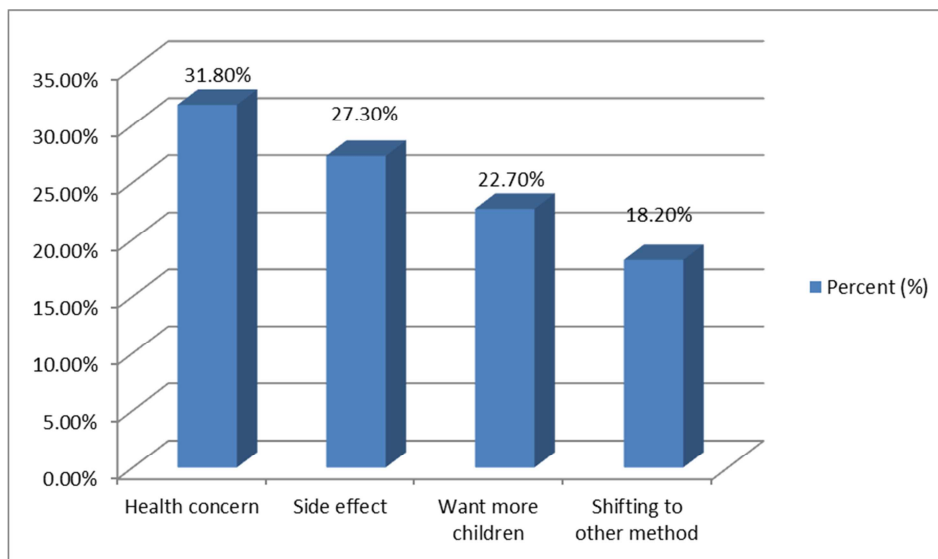


Figure 2. Reasons for implanon removal in the year 2018 in Debre Tabor town, North Central Ethiopia, 2018.

One hundred twelve (84.8%) respondents counseled at the time of implanon insertion, among whom 91(81.3%) counseled individually, 6 (5.6%) in mass and 15(13.4%) with their husband. Among those who got counseling service during insertion, 94 (83.9%) were counseled about Implanon benefit, 81 (72.3%) about its side effects, 52 (46.4%) about its effectiveness and 28 (25%) were also counseled about its duration of action that lasts for less than 15 minutes in three fourths of counseling's and for 15 minutes or above in one quarter of participant's counseling. Eighty-three (71.5%) of women among the married were discussed with their

husbands before inserting Implanon and most (94%) of them got their husband's approval for Implanon insertion. However, the remaining 5(6%) were inserted Implanon without their husband's approval. In nearly three-fifths (59.1%) of participants both the husband and the woman herself were decided to insert Implanon and in the remaining 51(38.6%) and 3 (2.3%) Implanon insertion was decided by the woman only and by her friends or relatives respectively even those who have husband were not involved their husband in decision making to insert Implanon (Table 4).

Table 4. Characteristics of respondents related to implanon use in Debre Tabor town, North Central Ethiopia, 2018.

Variables		Frequency	Percent
Get counseling before Implanon was inserted (n=132)	Yes	112	84.8
	No	20	15.2
Type of counseling given (n=112)	Individual counseling	91	81.3
	With husband counseling	15	13.4
	Mass counseling	6	5.6
Duration of the counseling (n=112)	<15 minutes	84	75.0
	>=15minutes	28	25.0
	Benefit	94	83.9
Type of information obtained during counseling (n=112)	Side effect	81	72.3
	Effectiveness	52	46.4
	Duration of action	28	25.0
Discuss with husband before inserting Implanon (n=116)	Yes	83	71.5
	No	33	28.5
Husband approval of Implanon insertion (n=83)	Yes	78	94.0
	No	5	6.0
Who decided for inserting Implanon (n=132)	Husband and herself	78	59.1
	Woman herself only	51	38.6
	Friend/ relative	3	2.3
Time is taken from Implanon source to your home (n=132)	<30 minutes	87	65.9
	>=30 minutes	45	34.1
Side effect after Implanon insertion (n=132)	Yes	38	28.8
	No	94	71.2
	Menstrual abnormality	21	55.3
Type of side effects (n=38)*	Headache	15	39.5
	Weight gain	8	21.0
	Blurring of vision	5	13.2
	Other	2	5.3
	Regular	91	69.0
Menstrual cycle after Implanon insertion (n=132)	Irregular	37	28.0
	Already stopped	4	3.0
	No change	67	52.3
Change in the amount of menstrual loss after Implanon insertion (n=128)	Increased	14	10.9
	Decreased	47	36.7
Appointed after Implanon inserted (n=132)	Yes	124	93.9
	No	8	6.1
Satisfied by the FP service providers during Implanon insertion (n=132)	Yes	106	80.3
	No	26	19.7

3.4. Factors Associated with Implanon Discontinuation

The influence of selected sociodemographic and other variables on the outcome variable was checked using the chi-square test. Hence, the presence of living children got counseling service, the presence of side effects and presence of menstrual abnormality were significantly associated (p-value <0.05) with discontinuation of Implanon in the chi-square test (Table 5).

Table 5. Factors associated with Implanon discontinuation among 2018 Implanon users in Debre Tabor town, North Central Ethiopia, 2018

Variables		Continuation of Implanon		X ² *	Df**	P-value
		Yes	No			
Living children	Yes	102	9	X ² =36.8	Df=1	0.000
	No	8	13			
Counseling has given	Yes	107	5	X ² =79.2	Df=2	0.000
	No	3	17			
Presence of side effects	Yes	23	15	X ² =20	Df=1	0.000
	No	87	7			
Menstrual abnormality	Yes	10	11	X ² =22.9	Df=2	0.000
	No	100	11			
Satisfaction with the service	Yes	93	13	X ² =7.51	Df=3	0.06
	No	17	9			

*Chi-square, **Degree of freedom p-value <0.05 –significant association

4. Discussion

The objectives of this study were to assess the level of discontinuation and variables influencing Implanon

discontinuation in Debre Tabor town among women Implanon users and discontinuers' during 2018. From the findings of this study, Implanon discontinuation among women was 16.7% in Debre Tabor town. However, studies

conducted in Nigeria, Malaysia, and Thailand reported a lower level of discontinuation than a result reported by this study [11-15]. This could be due to a discrepancy in socio-demographic profile or due to a difference in methods employed, the current study was done by cross-sectional study design in a community setting. However, other studies were institutional and follow-up studies. On the contrary, the level of Implanon discontinuation was lower than a study done in the United Kingdom. This could be due to a difference in the source population. Hence this study was done in urban residents; however, the latter study was done in both rural and urban residents [16]. It might be explained by the discrepancy in the educational status of respondents in the later study where a major proportion of study participants were educated than the present study.

In this study, the most frequent reason for Implanon discontinuation was health-related issues (31.8%) followed by developing side effects (27.3%) which was higher than the national level reason stated as a health concerns/side effects (24.1%). This was followed by another reason for Implanon discontinuation stated as a desire to have more children (22.7%) which was lower than the national level mentioned as a reason of a desire to become pregnant (42.1%). Additionally, in this study method shift accounted for 18.2% of study participants' reason for Implanon discontinuation, however, this was relatively higher than 2016 EDHS survey that reported wanting a more effective method (10.8%) for Implanon discontinuation [7]. This could be due to the number of samples considered in this study was much lower than a national survey. However, the level of all the above-mentioned reasons for Implanon discontinuation reported by this study was similar to other studies [7, 12, 15, 17, 18].

Among all Implanon discontinuers, the proportion was higher among respondents who were not counseled [17]. Desire to have more children, side effects, need to shift to other method and health concerns were the reasons of women not to continue Implanon in future until 3 years of its insertion. Husband opposition was among the reasons for not to using family planning which was similar to a study conducted in Niger. This indicates the need to involve partners in the counseling service provision [19].

In this study, the presence of living children got counseling service, the presence of side effects and the presence of menstrual abnormality was identified associated factors with Implanon discontinuation. The women having living children have an association with the discontinuation of Implanon. Study participants who reported a complaint of side effect during Implanon utilization have a higher chance of implanon discontinuation which was consistent with another study in Egypt [13]. It might be explained by the quality of counseling service or the minimal users' tolerance for the side effect of Implanon. Those who got counseling service at the time of insertion had a lower chance of Implanon discontinuation as compared to those who were not counseled which could be the provision of better counseling service given to the women and may this result in the women not worry on minor side effects developed following

Implanon use and not remove Implanon early.

5. Conclusion

The level of discontinuation was founded to be high among implanon users in the year 2018. The most frequently mentioned justification for discontinuation of implanon was health-related issues, wishing to have children, developing side effects and a desire of method shifting. Developing side effects including menstrual abnormality during using of implanon, having living children and absence of counseling during insertion were factors influencing discontinuation of implanon.

Therefore, the government, health service providers and all stakeholders should work in collaboration to decrease early implanon discontinuation rate. Appropriate counseling service should be offered.

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Conflict of Interest

All the authors do not have any possible conflicts of interest.

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