

## ORIGINAL RESEARCH ARTICLE

# Contraceptive Discontinuation and Switching Among Ghanaian Women: Evidence from the Ghana Demographic and Health Survey, 2008.

Emefa J. Modey<sup>1\*</sup>, Richmond Aryeetey<sup>1</sup> and Richard Adanu<sup>1</sup>

<sup>1</sup>School of Public Health, University of Ghana, P O Box LG 13, Legon, Accra, Ghana.

**For correspondence:** Email: [emmodey@hotmail.com](mailto:emmodey@hotmail.com); Phone: (00233) 054-7000-950

## Abstract

This study identifies factors associated with contraceptive discontinuation and switching among Ghanaian women of reproductive age, using data from 1,378 female respondents of the 2008 Ghana Demographic and Health Survey. Logistic regression models were used to determine relationships between key socio-demographic factors and user status. Discontinued use occurred among 56% of ever users and switching among 55% of current users. The IUD was most abandoned (70%) and its use was associated with almost twice the odds of discontinuation (OR=1.97; 95% CI (1.04, 3.75)). Having a history of terminated pregnancy significantly predicted both discontinuation (OR=1.36; 95% CI (1.03, 1.79) and switching (OR=1.78; 95% CI (1.16, 2.73)) and intention to limit births significantly predicted lower discontinuation (OR=0.71; 95% CI (0.52, 0.96)). Counseling services emphasizing contraceptive options and reinforcing switching are critically needed to reduce unwanted pregnancies that may result from poor method use and discontinuation especially among post-abortion clients and IUD users. (*Afr J Reprod Health* 2014; 18[1]: 84-92).

**Keywords:** Contraceptive use, discontinuation, switching, predictors, Ghanaian women

## Résumé

Cette étude identifie les facteurs associés à l'arrêt de la contraception et la commutation chez les femmes ghanéennes en âge de procréer, en utilisant les données de 1378 femmes interrogées au cours de l'Enquête Ghanéenne Démographique et de santé de 2008. Les modèles de la régression logistique ont été utilisés pour déterminer les relations entre les facteurs socio-démographiques et le statut de l'utilisateur. L'abandon de l'utilisation s'est produit chez 56% de celles qui ne l'ont déjà utilisé et la commutation s'était produite chez 55 % des utilisateurs actuels. Le stérilet était le plus abandonné (70 %) et son utilisation était associée à près de deux fois plus susceptibles d'abandon (OR = 1,97, IC 95% (1,04, 3,75). Le fait d'avoir une histoire d'une grossesse terminée prédit de façon significative à la fois l'arrêt (OR = 1,36, IC 95% (1,03, 1,79) et de la commutation (OR = 1,78, IC 95% (1,16, 2,73)) et l'intention de limiter les naissances prédit de façon significative l'arrêt inférieure (OU = 0,71; IC à 95% (0,52, 0,96). Il faut des services d'orientation qui mettent l'accent sur les options contraceptives et de renforcement de commutation pour réduire les grossesses non désirées qui peuvent provenir d'une mauvaise méthode d'utilisation et l'arrêt en particulier chez les clientes post- avortement et les utilisatrices de DIU. (*Afr J Reprod Health* 2014; 18[1]: 84-92).

**Mots-clés:** utilisation de la contraception, l'arrêt, commutation, indices, les femmes ghanéennes

## Introduction

Contraceptive discontinuation is a common event that has shown considerable variation by country<sup>1</sup>. It may occur as a result of contraceptive failure, switching or abandonment of the chosen method either whilst a need for contraception persists or due to reduced need. The decision to use contraceptives has been observed to be dependent on multiple factors: the perceived acceptability of the method to the potential user, the likelihood of

sustained use and the required levels of compliance of the method in comparison to alternatives available<sup>2-4</sup>. As the adoption of contraceptives increases and becomes more widely accepted, it is increasingly recognised that achieving the demographic and health impact of contraceptive use is dependent on the effectiveness and ensuing use of adopted methods<sup>5,6</sup>.

In a number of studies of contraceptive discontinuation, the most important determinant highlighted has been the contraceptive method

used<sup>2,7-10</sup>. Early studies of discontinuation by Cleland and Ali (1995) found higher discontinuation rates for methods such as the pill, condom and injectable<sup>11</sup>. Other studies have also identified high discontinuation mostly among condom users followed by injectables, and the traditional methods<sup>12</sup>, and lower discontinuation for methods such as Intrauterine Devices (IUDs) and Implants<sup>8,13</sup>. A relationship between the nature of the method chosen and its influence on subsequent use behaviour as suggested by Steele & Curtis (2003) and Bradeley et al (2008) has generally been observed, as methods that require active user involvement and compliance to be used properly, are more likely to be discontinued<sup>2,4,5,11,12,14,15</sup>.

Utilizing country demographic and health surveys, other user characteristics have been identified as determinants of contraceptive use and its subsequent sustained or discontinued use<sup>7,16</sup>. These characteristics have however been observed to exhibit wide variations in their influence. Background factors such as educational level, place of residence and source of method are identified as factors that can influence discontinuation of contraceptive methods<sup>1,7,11,12,14,17</sup>. Whereas other factors such as fertility preferences, age, parity and marital status, observed to be associated with discontinuation, have also been associated with continued use<sup>7,14</sup>.

Ghana's contraceptive prevalence has showed an increase from 22% in 1998 to 25% in 2003 but a decline in 2008 to 24% for all methods<sup>18-20</sup>. Among Ghanaian women, methods commonly used include male condom (20%), the pill (17%) and injectables (14%). Traditional methods used by Ghanaian women are Periodic abstinence (rhythm), which is the most commonly used method (by 17% of women) and withdrawal (14%)<sup>20</sup>. By type of methods used, modern method use decreased from 19% in 2003 to 17% in 2008; and traditional methods from 9% in 2003 to 7% in 2008. This general decline is indicative of some level of discontinuation among users<sup>19,20</sup>.

To fully understand what drives contraceptive use behavior, it is important to identify the factors that influence contraceptive use, discontinuation and/or switching to other methods. This assessment will facilitate successful family

planning programs that promote not only acceptance of methods but also guide context-specific interventions that encourage sustained and continued use<sup>21</sup>. The aim of this study therefore, is to determine the socio-demographic factors that influence contraceptive discontinuation status among Ghanaian women and identify predictors of these events.

## Method

### Study Design

This paper is based on a secondary analysis of the Ghana Demographic and Health Survey (GDHS) 2008 data. The GDHS was a household based survey that utilized a stratified two-stage cluster design: the first stage involved selecting samples from a master sampling frame constructed from Enumeration Areas (EAs) from the Ghana Population and Housing Census 2000. The second stage involved the systematic sampling of the households listed from each cluster to ensure adequate numbers of completed individual interviews obtained. The Survey collected data through questionnaire-based interviews based on the measure DHS program model<sup>20</sup>.

In the 2008 GDHS, all women aged 15-49 years in the selected households were administered a questionnaire between September and November, to collect information covering the five years preceding the survey on respondent's demographic characteristics, reproductive history, living conditions, knowledge and use of contraception and other health issues. Trained interviewers interviewed a total of 4,916 women.

This analysis utilized data from the women's questionnaire of the GDHS 2008. Data used in this analysis was restricted to responses from women who have ever used a method of contraception in the five years preceding the survey, with complete contraceptive histories. Excluded from this study were 2,226 women who had never used contraceptives, 365 women who had indicated that they were pregnant at the time of the survey, 66 infertile women and 247 respondents with incomplete family planning information. Base value for selection of responses for analysis thus reduced from 4,916 to 1,378 respondents after

criteria were applied. This analysis focuses on both modern and traditional family planning options available in Ghana.

### Data Analysis

Statistical analysis of the data was performed using STATA 11.2 and SPSS v20<sup>22,23</sup>. Respondents were classified into two groups: discontinued users (if they had used a contraceptive method in the past but were not doing so at the time of the survey) and switchers (if their current method differed from their previous method used). Absolute and relative frequencies and distribution of the subgroups of women were summarized. Independent variables investigated were age, education, wealth index, residence, fertility preferences and parity. Having a history of a terminated pregnancy was also assessed as a predictor.

The inferential statistics test was used to assess differences between the two groups of women by discontinuation or switching status. Logistic regression was used to investigate associations between user status and factors identified as

significantly associated from bivariate analysis and previous literature. Assessment of the strength of these factors as predictors was done using odds ratios (OR) and their 95% confidence intervals (CI) for comparisons of their effect on discontinued use. Significance for analysis of each test was set at  $p < 0.05$ .

## Results

### Characteristics of women discontinuing use

Contraceptive discontinuation was identified among 775 (56%) of the women in the sample selected [Table 1]. A majority of these women had a preference for more children (60%), secondary or higher education (52.3%) and lived in rural areas (55.9%). Twenty-five percent of these women indicated a history of a terminated pregnancy. Women abandoning use of contraceptives significantly differed from those who had not by fertility preferences and history of terminated pregnancy [Table 1].

**Table 1:** Selected socio-demographic characteristics of female contraceptive users from the 2008 Ghana Demographic and health survey by user type (N=1,378)

Socio-Demographic Characteristics	Total (Ever use= N)	User Type		
		Discontinued N (%)	Switched N (%)	Currently Using n (%)
<b>Age</b>	33±7.8	33±7.9	32±7.9	31±7.7
15-19	28(2.03)	17(2.19)	5(1.49)	11(1.82)
20-24	193(14.01)	104(13.42)	55(16.42)	89(14.76)
25-29	297(21.55)	180(23.23)	68(20.30)	117(19.40)
30-34	249(18.07)	130(16.77)	58(17.31)	119(19.73)
35-39	278(20.17)	156(20.13)	69(20.60)	122(20.23)
40-44	197(14.30)	108(13.94)	48(14.33)	89(14.76)
45-49	136(9.87)	80(10.32)	32(9.55)	56(9.29)
<b>Place of Residence</b>				
Urban	610(44.27)	342(44.13)	156(46.57)	268(44.44)
Rural	768(55.73)	433(55.87)	179(53.43)	335(55.56)
<b>Education**</b>				
None	317(23.00)	181(23.35)	1(18.21)	136(22.55)
Primary	335(24.31)	189(24.39)	81(24.18)	146(24.21)
Secondary or higher	726(52.69)	405(52.26)	179(57.61)	321(53.23)
<b>Number of living Children (Parity)**</b>				
None	76(5.52)	42(5.52)	26(7.76)	34(5.64)
1-2	503(36.50)	306(39.48)	112(33.43)	197(32.67)
3-4	481(34.91)	263(33.94)	112(33.43)	218(36.15)
5+	154(25.54)	164(21.16)	85(25.37)	318(23.08)
<b>Fertility Preference*</b>				

Wants another child	773(56.10)	467(60.26)	173(51.64)	306(50.75)
Undecided	46(3.34)	26(3.35)	13(3.88)	20(3.32)
Wants no more	519(37.66)	282(36.39)	125(37.31)	237(39.30)
Sterilized (husband/partner)	40(2.90)	0	24(7.16)	40(6.63)
<b>History of Terminated pregnancy**/**</b>				
No	1,060(76.92)	578(74.58)	253(75.52)	482(79.93)
Yes	318(23.08)	197(25.42)	82(24.48)	121(20.07)
<b>TOTAL</b>	<b>1,378</b>	<b>775</b>	<b>335</b>	<b>268</b>

\*P<0.05 among women discontinuing and those who did not

\*\* P<0.05 among women switching and those who did not

Multivariate analysis, controlling for; age, residence, education, wealth index, parity, fertility preference and pregnancy termination history showed that, women who did not intend to have more children were less likely to have

discontinued contraceptive use (OR=0.71; 95% CI (0.52, 0.96)) and a history of terminated pregnancy was associated with a 29% increased odds of discontinued use (OR=1.32; 95% CI (1.01, 1.73)) [Table 2].

**Table 2:** Odds ratios for discontinued use and switching for female contraceptive users from the 2008 Ghana Demographic and health survey by selected socio-demographic characteristics

Background Characteristic	Discontinuation			Switching		
	Adjusted Odds Ratio	[95% Confidence Interval]		Adjusted Odds Ratio	[95% Interval]	Confidence
<b>Age groups</b>						
15-19 (ref)						
20-24	0.75	0.33	1.70	2.38	0.64	8.91
25-29	1.02	0.45	2.30	2.06	0.56	7.65
30-34	0.85	0.37	1.95	1.63	0.43	6.24
35-34	1.10	0.47	2.57	2.29	0.58	8.98
40-44	1.36	0.56	3.28	1.95	0.47	8.04
45-49	1.81	0.72	4.51	2.13	0.49	9.30
<b>Place of residence</b>						
Urban (Ref)						
Rural	1.05	0.83	1.34	0.94	0.65	1.35
<b>Education</b>						
None (Ref)						
Primary	0.94	0.68	1.30	1.49	0.91	2.44
Secondary	0.90	0.66	1.22	1.73	1.10	2.73
Higher	1.25	0.67	2.31	1.65	0.61	4.47
<b>Number of living children</b>						
0 (Ref)						
1-2	1.35	0.82	2.24	0.47	0.20	1.11
3-4	1.13	0.64	1.99	0.40	0.15	1.05
5+	0.97	0.51	1.86	0.51	0.17	1.49
<b>History of terminated pregnancy</b>						
No (Ref)						
Yes	<b>**1.32</b>	<b>1.01</b>	<b>1.73</b>	<b>**1.78</b>	<b>1.16</b>	<b>2.74</b>
<b>Fertility Preference</b>						
Wants another child (Ref)						
Undecided	0.87	0.47	1.63	1.45	0.54	3.92
Wants no more	<b>**0.71</b>	<b>0.52</b>	<b>0.96</b>	0.92	0.57	1.46

\*\*p<0.05. (Ref)-reference category

Discontinuation was observed to vary by contraceptive method used. The IUD was discontinued the most by an estimated 70% of women who had indicated previous use [Table 3]. Previous use of the IUD was found to be associated with approximately two times the odds of discontinuation (OR=1.97; 95% CI (1.03, 3.75)) which was even higher than that recorded by any of the shorter acting methods [Table 4]. However,

among implant users, less than half (40%) had abandoned its use and almost 40% were still using at the time of the survey [Table 4]. Previous use of the implant was associated with reduced odds of discontinuation (OR=0.53; 95% CI (0.32, 0.88)) presented in [Table 4]. This made the implant the method with not only the highest proportion of ever users still using, but also the least method discontinued in the Ghanaian population.

**Table 3:** Current use, discontinuation and switching distribution of respondents in the Ghana Demographic and health survey 2008.

Method Ever used	Current use status			TOTAL
	Discontinued (No Method)	Currently Using (Same Method)	Switched (Different method)	
	n (%)	n (%)	n (%)	
IUD	33(70.2)	5(10.6)	9(19.1)	47
Pill	310(58.2)	112(21.0)	111(20.8)	533
Withdrawal	213(58.5)	51(14.0)	100(27.5)	364
Diaphragm	5(55.6)	1(11.1)	3(33.3)	9
Condom	236(55.5)	49(11.5)	140(32.9)	425
PA	232(54.1)	113(26.3)	84(19.6)	429
LAM	7(58.3)	0(0)	5(41.7)	12
Injection	257(50.1)	184(35.9)	72(14.0)	513
Foam/jelly	20(47.6)	5(11.9)	17(40.5)	42
Female condom	9(45.0)	3(15.0)	8(40.0)	20
Implant	27(40.3)	26(38.8)	14(20.9)	67
Female Ster.	0(0)	40(100)	0(0)	40
TOTAL	1349	405	747	2501
CASES	775	268	335	1378

\*Sum of proportions/total exceeds sample size due to multiple responses

**Table 4:** Odds Ratio of discontinuation by method ever used

Contraceptive Method Used	Crude Odds Ratio	[95% Confidence Interval]	
Pill	1.05	0.85	1.32
IUD	<b>**1.97</b>	<b>1.04</b>	<b>3.75</b>
Injectable	<b>**0.65</b>	<b>0.52</b>	<b>0.81</b>
Diaphragm	1.18	0.31	4.44
Condom	0.92	0.74	1.17
Female Sterilization	-	-	-
Periodic Abstinence	0.85	0.66	1.08
Withdrawal	1.00	0.77	1.29
Implant	<b>**0.53</b>	<b>0.32</b>	<b>0.88</b>
LAM	0.83	0.25	2.67
Female Condom	0.64	0.26	1.56
Foam/Jelly	0.77	0.41	1.45

**\*\*P<0.05**

For the other modern methods studied, 50% of injectable contraceptive users had discontinued use at the time of the survey. Among respondents who had ever used the pill, 58.2% had abandoned use of the method. The condom was discontinued by 55.5% of ever users. Only 11.5% ever users were still currently using the male condom and the highest response for an alternative method of contraception was observed for periodic abstinence (9.4%) [Data not shown].

### ***Characteristics of Women Switching Methods***

Among the sample of current users studied, 335 (55.6%) women had switched from their previous method at the time of the survey [Table 1]. These were predominantly spacers who wanted to have another child (51.6%). Women who switched methods significantly differed from those who hadn't switched by level of education, parity and history of terminated pregnancy.

In multivariate analysis, controlling for age, residence, education, parity, fertility preference and pregnancy termination history, having a history of terminated pregnancy was observed to be associated with approximately 2 times the odds of method switching (OR=1.78; 95% CI (1.16, 2.73)) [Table 2].

Approximately 20% of former IUD users had switched methods, and switchers primarily indicated current use of the pill (6.4%) as the preferred method [Data not shown]. Switching occurred among 21% of Implant users and 14% of injectable contraceptive users [Table 3]. The pill was the preferred method switched to by former users of implants (7.5%) and injectables (5.7%) [Data not shown].

Among respondents who had ever used the pill, only 11% switched methods [Table 3]. Switching from the pill was highest to the injectable (9%) and the highest response for an alternative method of contraception among previous condom users was periodic abstinence (9.4%) [Data not shown].

## **Discussion**

Against the recent decline in contraceptive use, the findings of this study indicate that contraceptive discontinuation is common among Ghanaian

women. Our findings indicate that more than half of women who choose to adopt a contraceptive method had failed to continue with its use - a proportion higher than that identified by previous studies which discovered 54% discontinuation in GDHS 2003<sup>1</sup>. Although it is possible that this discontinuation may be attributable to a reduced need for contraception, evident from the fertility preference for another child by most women abandoning use, it may equally be a result of other factors such as lower user satisfaction with the methods available or poor counselling on the management of side effects, which lead the user to abandon use.

Switching, was relatively lower than previously observed (61%) in GDHS 2003<sup>1</sup>. Since knowledge of multiple or alternate methods has increased since 2003<sup>19,20</sup>, the lower occurrence of method switching may be suggestive of some challenges in making these options available to clients. Recent studies reinforce this standpoint by suggesting that although women may be aware of their options, they may not have received enough information to decide to adopt alternative methods<sup>2,6</sup>.

The lower likelihood of discontinuation among women who intend to limit births support previous findings that the motivation to avoid pregnancy is a contributor to whether women abandon use of a contraceptive or not<sup>13</sup>. It may be anticipated that Ghanaian women who want to limit births are more strongly motivated to achieve this intended fertility goal and will discontinue use of adopted methods less. Of programmatic importance here is that appropriate counselling on family planning when given to these groups of women who are determined to limit births, may be sustained at the very least, until the intensity of their motivation to avoid pregnancy is moderated. This is an important group within which contraceptive adoption rates may be improved and unwanted pregnancies can be minimized.

Evident from the analysis of background characteristics is that having a history of a terminated pregnancy was significantly associated with contraceptive use status as it significantly predicted both discontinuation and switching. Women with these histories may have discontinued use of their chosen contraceptive method as a result of method failure that may have

led to an unplanned pregnancy that had to be terminated, and which was not followed by the resumption of contraceptive use. With respect to method switching however, these women may be more inclined to opt for an alternate method to that which was previously used to prevent further unwanted pregnancies. They are thus more likely to benefit from counselling services that advocate method switching especially in instances where their pregnancy may be due to contraceptive failure. Counselling services reinforcing options for switching in addition to Post abortion counselling (PAC) should be provided to these women as this has the ability to moderate future unwanted pregnancy (especially when the risk of pregnancy is still high) and the need for subsequent induced abortions, which may not be safe.

In agreement with studies suggesting lower discontinuation for longer acting and more permanent methods (LAPMs)<sup>1,5-7</sup>, less discontinuation was observed among users of the implant. Although this may be due to the requirement of active discontinuation to cease use of the method, it may also reflect less user dissatisfaction with the method<sup>1,5-7</sup>. In contrast to this lower LAPM discontinuation, however, is the observation that 70% of IUD users had abandoned use. This would suggest active discontinuation of the method - an observation very different from published literature<sup>11,14,15</sup>. This observed discontinuation of the IUD is higher than what has been identified from previous DHS studies which found IUD discontinuation of 36% in Bangladesh in 1999-2000 mainly due to side effects<sup>15</sup>. In Ghana, studies of women's reasons for declining use and discontinuation of the IUD have predominantly also identified fears of side effects<sup>24</sup>. In the absence of information indicating whether knowledge of side effects and their management was received among women who abandoned use, the inference for the Ghanaian context as suggested could be that IUD discontinuers did not fully receive or understand this counselling on the management and experience of side effects. This could have accounted for the unusually high proportions of discontinued use of IUDs observed<sup>1</sup>.

Switching behaviour following the discontinued use of a contraceptive among the sample of women studied varied considerably. Although previous studies suggest that switching would generally occur from less to more effective methods, some switching towards the traditional methods was observed. Switching however occurred towards other modern methods with the most favoured method switched to being the pill - a finding in agreement with recent studies proposing the pill as the method more commonly opted for by switchers<sup>6,17</sup>. This choice of switching may however be expected as a majority of women who switched methods were spacers rather than limiters. The choice of pill use as a temporary means of spacing is thus preferred to any longer acting method. Among traditional method users also, although some switching occurred towards the alternative traditional method, switching was more directed toward the modern methods.

The more popular male condom was observed to have been discontinued by approximately 56% of ever users. A figure similar to estimates found for Sub-Saharan Africa (57%-64%)<sup>15</sup>. This may be a result of condom users receiving appropriate counselling explaining the decision by more spacers to use this shorter acting method to achieve this goal. Discontinuation of the other methods studied: injectable (49%), periodic abstinence (53%) and withdrawal (57%) although observed to be higher than the range estimated for sub Saharan Africa<sup>15</sup>, may also be due to the need for spacing among the sample of previous users. For the traditional methods, discontinuation may be attributable to a higher occurrence of method failure, which was not assessed in this study, or the primary requirement of active participation of the male partner to use these methods successfully. This finding suggests partner cooperation as a critical factor driving discontinued use of traditional methods<sup>12</sup>.

### **Study Limitations**

Although proportions for discontinuation and switching were determined, these estimates are generalized to the five-year period preceding the survey and should be interpreted with caution

when comparing to 12 or 24-month probabilities or rates of discontinuation. The analysis of switching, is also restricted to ever-users still using a method at the time of the survey and as such does not factor switching that may have occurred among discontinued users prior to their abandoning contraceptive use. Finally, it is important to note that the analysis of history of terminated pregnancy is limited to women with a history of at least one termination and that contraceptive use behaviour among women experiencing repeated unintended pregnancies and abortions may be relatively different from what was observed.

## Conclusion

This study reveals that women who had experienced a terminated pregnancy were at risk of abandoning use as well as prone to switching. The peculiar contraceptive use or discontinuation behaviour of clients with previous pregnancy termination history, preferences for spacing and IUD users who intended to limit childbearing reinforces the need for health workers to have in-depth knowledge of fertility preferences and reproductive histories of women reporting for family planning services to assist with counselling and the selection of appropriate methods.

The general counselling provided to women reporting for family planning services should also place more emphasis on the experience of side effects and how to manage them to improve adherence among women who decide to adopt methods and encourage clients with such difficulties who are still in need of contraception to present with problems earlier. This may facilitate switching when such difficulties are encountered, that may ultimately provide them a longer duration of protection against unwanted pregnancy.

## Contribution of Authors

The authors are grateful to MEASURE DHS for access to the data used in the study. All authors have contributed to the conceptualization and analysis of this work, and have participated in the drafting, editing, and revising of the manuscript. All authors have approved the final version of this

manuscript.

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