

Determinants of reversible contraceptive method discontinuation among women of reproductive age in Kano metropolis, Nigeria

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Abstract

Contraceptive discontinuation contributes substantially to the total fertility rate, unwanted pregnancies and induced abortions thereby increasing the already high maternal morbidity and mortality. This study aimed to access contraceptive discontinuation among women of reproductive age in Kano metropolis. Using a cross-sectional study design with concurrent mixed method of data collection, 350 women were studied. Data was collected using a structured interviewer administered questionnaire, focus group discussion and key informant interview guides. Of the 350 participants, 168 of them had discontinued a method of contraception giving a total discontinuation rate was 48%, with method specific discontinuation rate of 35.1% for implants, 33.9% for injectables, 21.4% for pills, and IUD having the lowest rate (15.5%). The study

also found side effects to be the most common reason why women discontinued contraception (67.1%), intention to get pregnant (59.5%), method failure (16.7%), method switch (12.0%), and husband's disapproval (9.5%). Factors significantly associated with discontinuation at bivariate level were ethnicity, influence on method choice, type of facility where method was obtained, and the type of contraceptive method. These factors were found not to be significant at multivariate level. Contraceptive discontinuation is prevalent in Kano metropolis, meaning that women are at high risk of unintended, mistimed pregnancies, and unsafe abortions, increasing maternal morbidity and mortality. Efforts should be made to tackle the problem of discontinuation through effective educational strategies and counselling techniques.

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Introduction

The rate at which users discontinue a method of contraception is one of the major indicators of quality of use of family planning services.¹ High discontinuation rates of contraceptives can increase the number of unwanted and high-risk pregnancies,² and because high rates of discontinuation are a major problems for family planning programs, an evaluation of associate factors is necessary.¹ Studies on contraceptive discontinuation are useful for providers and programs in evaluating family planning program success.³⁻⁴ 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.” (pp.1-2).⁵⁻⁶ Prior multi-country research found that discontinuation due to ‘reduced need’ (an umbrella for issues like “desire to become pregnant, infrequent sex, absence of husband/partner, menopause or sub-fecundity, and marital dissolution/separation”) ranged between 7-20% of users of all reversible methods.⁷

Earlier research on the determinants of contraceptive discontinuation has focused on demographic characteristics and fertility motivations of users, the quality of family planning services or the family planning service environment, and the experience of side effects while using a specific method. Results from this research demonstrate that women who are younger, of higher parity, and unmarried or not in a union are the most likely to discontinue a method.⁷ However, studies have consistently found that the most important factor in discontinuation is the contraceptive method type.⁶ Other demographic factors, such as education, place of residence, and household income, tended to have less consistent relevance for discontinuation.⁷ Fertility desires and other individual-level characteristics of the woman, such as the level of motivation to prevent pregnancies, self-efficacy, and autonomy, are also considered to be directly related to contraceptive discontinuation. Partner involvement in contraceptive discontinuation is not yet well understood, though has been found to be associated with the method choice.⁷

This study therefore focused on these key issues. Previous studies of contraceptive method discontinuation and switching, such as those using the cross-sectional Demographic and Health Surveys or the U.S. National Survey of Family Growth, give general estimates, but are limited by imprecise and incomplete data as well as by the poor accuracy of long-term retrospective self-reported contraceptive use data.³

The aim of the study is to study the determinants of reversible contraceptive method discontinuation among women of reproductive age in Kano Metropolis, with the following specific objectives.

Materials and Methods

Kano State is located in North-Western Nigeria, and has an estimated population of women of reproductive age as 3,599,697, 704,108 of which are pregnant every year. Based on the Multiple Indicators Cluster Survey (MICS) of 2017, total fertility rate is 7.7%, the contraceptive prevalence is 6.3%, while unmet need for contraception is 30.8%.

Study design

The study is a cross-sectional descriptive study with a concurrent mixed method of data collection.

Study population

The study population comprised of women of reproductive age (15-49 years) from the community in Kano metropolis for the quantitative method study, while the qualitative method study included women of reproductive age, the male partners from the same community, and family planning service providers in Kano metropolis.

Sample size determination

To determine the minimum sample size, the sample size formula for estimating a single proportion was used:

$$n = \frac{Z^2 pq}{d^2}$$

Where:

n is the minimum sample size

Z is the standard normal deviate corresponding to level of significance of 5% = 1.96 (obtained from normal distribution table)

p is the proportion of outcome of interest from a previous study (ex. the discontinuation rate of IUD in Zaria = 0.27)⁸

q is the complementary probability of p = 1-p = 1-0.27 = 0.73

d is the desired level of precision (usually at 5%) = 0.05

Therefore:

$$n = \frac{1.96^2 \times 0.27 \times 0.73}{0.05^2}$$

$$n = 315.8$$

n = 316

To account for the non-response rate 10% of the calculated sample size will be added, giving a sample size of 347, which was approximated to 350.

Sampling technique

Quantitative method study: The eight metropolitan local

governments were grouped into three based on population density (high, medium, and low population density). One local government was selected randomly from each group comprising of Kano municipal (high density), Nassarawa LGA (medium density), and Kumbotso LGA (low density).

Qualitative method study: For the qualitative data collection, the FGD group participants (females) were selected through a purposive sampling method and each group comprised of women belonging to the same age group, with averagely same number of living children, and same social class to ensure homogeneity. A focused group discussion was conducted with male partners from the same community where the female participants were selected from.

Ethical considerations

Ethical approval was obtained from the Research Ethics Committee of the state ministry of health. Formal permission was obtained from the primary health care coordinator, traditional heads and facility heads/in charges.

Table 1. Socio-demographic characteristics of respondents.

Socio-demographic characteristics	Frequency (%) n=348
Age (years)	
15-24	32 (9.1)
25-34	215 (61.4)
35-49	103 (29.4)
Mean±SD	31.5±6.3
Ethnicity	
Hausa	239 (68.3)
Fulani	66 (18.9)
Yoruba	26 (7.4)
Igbo	5 (1.4)
Others	14 (4.0)
Religion	
Islam	331 (94.6)
Christianity	19 (5.4)
Occupation	
Employed	159 (45.4)
Unemployed	191 (54.6)
Highest Level of education	
Arabic	38 (10.9)
Primary	64 (18.3)
Secondary	132 (37.7)
Tertiary	116 (33.1)
Marital Status	
Married	325 (92.9)
Divorced	14 (4.0)
Widowed	9 (2.6)
Single	2 (0.6)
Husband's highest level of education	
No formal education	55 (15.7)
Primary	11 (3.1)
Secondary	76 (21.7)
Tertiary	208 (59.4)
No. of children	
1-4	218 (62.3)
≥5	132 (37.7)
1-4	152 (43.4)
Desired no. of children	
≥5	198 (56.6)

Results

A total of 350 respondents were approached for the quantitative component of this study and 348 of the questionnaires were correctly filled and analyzed, giving a response rate of 99.4%. For the qualitative component, 9 FGDs and 3 KIIs were conducted and included in the analysis: 6 FGDs with women and 3 with men, and 3 KIIs with family planning service providers.

Socio-demographic characteristics of respondents

The age of the respondents ranged from 15 years to 49 years with a mean of 31.56.3 years. Majority of the women 215 (61.4%) were between 25-34 years and were predominantly Muslims with only about 19 (5.4%) being Christians. Majority of them 239 (68.3%) were Hausa by tribe; others included Fulani 66 (18.9%), Yoruba 26 (7.4%), Igbo 5 (5.4%).

The overall prevalence of contraceptive discontinuation was 48% (n=168) of the total 348 respondents. However, the reason specific discontinuation rates were 59.5% (n=100) because they wanted to get pregnant (intention to get pregnant), 67.1% (112) due to side effects, 16.7% (28) due to method failure, 12% (7) due to method switch, 9.5% (16) as a result of husband's disapproval, and 5.4% (9) due to interference with body process.

The table shows that implants had the highest discontinuation rate of 35.1% with Injectables also having 33.9% discontinuation rate. IUDs, however has the lowest rate of 15.5%.

Side effects are the most frequent reason why women discontinue contraception (67.1%), women wanting to get pregnant 59.5%. Other reasons include method failure (16.7%), method switch (7.0%), husband's disapproval (9.5%), interference with body process (5.5%), with interruption of access, cost, poor quality, and inconvenience having the lowest rate of (1.2%) respectively.

Factors associated with contraceptive discontinuation were assessed at bivariate level as shown in Table 4.

To adjust for confounding, these factors that were found to be statistically significant at bivariate level were further subjected to a binary logistic regression. In addition to these, factors that were significant from literature but not significant in this study ($p > 0.05$), and factors with p-value of 0.1 were also included in the model. This is shown in Table 6.

The table showed that all the variables that were significant at the bivariate level were not significant at multivariate level.

Table 7 above shows the behavior of women who discontinued any of the reversible contraceptive method. Of the 168 women who discontinued than two-thirds 125 (74.4%) switched to another method of contraception while 43 (25.6%) abandon method completely.

The table above shows the consequences of contraceptive discontinuation, of the 168 women who discontinued 140 (83.8%) women became pregnant while 28 (16.7%) did not.

The table above shows that out of the 140 women who got pregnant following contraceptive discontinuation, 100 (71.4%) had the intention to get pregnant and 40 (28.6%) had an unintended pregnancy.

Table 9 shows the outcome of pregnancy amongst those women who had intention of getting pregnant. 21 (21%) had spontaneous miscarriage, 75 (75%) had a live birth, and only 4 (4%) of the women had an induced abortion.

Table 11 shows the outcome of pregnancy amongst those women who had an unintended pregnancy 9 (22.5%) had spontaneous miscarriage, 24 (60%) had a live birth, and 7 (17.5%) of the women had an induced abortion.

Discussion

The study found that contraceptive discontinuation rate was very high in Kano metropolis, which could be a contributor to the high fertility rate, increased rate of unsafe abortion and its complication thereby increasing maternal and child morbidity and mortality. The overall contraceptive discontinuation rate was 48%. This was similar to findings obtained in studies in Bangladesh, Honduras, Brazil, and Colombia.^{1,8,9} Method specific discontinuation rate obtained from this study was found to be 35.1% for implant. This was found to be lower than what was found in other studies (44.0% and 44.5%) conducted in northwestern Nigeria and Kenya^{10,11} as against 19.8% and 15% that was obtained in northwest Nigeria and Iran.^{12,13} The most probable explanation for these lower rates could be because the studies were hospital-based studies. Injectables had a discontinuation rate of 33.9% which was similar to what was obtained in Iran (38%), Uganda, Zimbabwe, Thailand (40%),^{12,14} but higher than what was found in Indonesia (18%) and lower than (67%) in Dominican Republic and 56.4% in Iran^{1,15} due to the large sample size that was obtained from the country's

Table 2. Overall prevalence of contraceptive discontinuation.

Contraceptive status of respondents	Frequency (n=348)	Percentage (%)
Still using contraceptive	180	52
Discontinued contraceptive method	168	48
Total	348	100

Table 3. Prevalence of contraceptive discontinuation (method specific discontinuation rate).

Contraceptive method	Frequency	Percentage
Pills	36	21.4
Injectables	57	33.9
IUD	26	15.5
Implants	59	35.1

Table 4. Reason specific discontinuation rate of reversible FP method.

Reasons for contraceptive discontinuation	Frequency	Percentage (%)
Intention to get pregnant	100	59.5
Method failure	28	16.7
Side effects	113	67.1
Method switch	12	7
Husband's disapproval	16	9.5
Interference with body process	9	5.4
Interruption of access	2	1.2
Cost	2	1.2
Poor quality	2	1.2
Inconvenience	2	1.2
Others	10	6

Table 5. Socio-demographic variables associated with contraceptive discontinuation.

Variables	Discontinuation				Total		χ^2	p-value
	n	Yes %	n	No %	n	%		
Age								
<30	14	9.7	130	90.3	144	100	0.1	0.47
≥30	17	8.3	187	91.7	204	100		
Ethnicity								
Hausa	26	10.9	213	89.1	239	100	3.8	0.04*
Non-Hausa	5	4.5	106	95.5	111	100		
Marital status								
Currently married	27	8.4	296	91.6	323	100	1.7	0.17
Not married	4	16	21	84	25	100		
Religion								
Islam	31	9.4	298	90.6	329	100	2	0.16†
Christianity	0	0	19	100	19	100		
Highest level of education								
<Secondary	6	-5.9	96	94.1	102	100	1.6	0.14
>Secondary	25	-10.2	221	89.8	246	100		
Husband's highest level of education								
<Secondary	3	-4.5	63	95.5	66	100	1.9	0.12†
≥Secondary	28	-9.9	254	90.1	282	100		
Occupation								
Employed	27	-9.2	268	90.8	295	100	0.1	0.47
Unemployed	4	-7.5	49	92.5	53	100		
Number living of children								
1-4	17	-7.9	199	92.1	216	100	0.8	0.25
≥5	14	-10.6	118	89.4	132	100		
Desired number of children								
1-4	13	-8.6	139	91.4	152	100	0	0.05
≥5	18	-9.2	178	90.8	196	100		
Intention for use								
Pacing	28	-9.6	264	90.4	292	100	1	0.23†
Limiting	3	-5.4	53	94.6	56	100		
Duration of use								
1-6 months	12	-10.1	107	89.8	119	100	0.3	0.36
≥7 months	19	-8.3	210	91.7	229	100		
Type of facility								
Private	3	-3.8	75	96.2	78	100	3.2	0.05†
Public	28	-10.4	242	89.6	270	100		
Contraceptive method								
<i>Pills</i>								
Yes	3	-4	72	96	75	100	2.9	0.07†
No	28	-10.3	245	89.7	273	100		
<i>Injectables</i>								
Yes	18	-14.5	106	85.5	124	100	7.5	0.00*
No	13	-5.8	211	94.2	224	100		
IUD								
Yes	6	-11.1	48	88.9	54	100	0.4	0.34
No	25	-8.5	269	91.5	294	100		
Implant								
Yes	10	-8.6	106	91	116	100	0	0.53
No	21	-9.1	211	90.9	232	100		
Male condom								
Yes	1	-9.1	10	90.9	11	100	0	0.65†
No	30	-8.9	307	91.1	337	100		
Other family planning options								
Yes	153	-47.4	170	52.6	323	100	0.7	0.27
No	15	-55.6	12	44.4	27	100		
Counseling on side effects								
Yes	136	-46.4	157	53.6	293	100	1.8	0.12
No	32	-56.1	25	43.9	57	100		
Influence								
Self	14	-6.6	198	93.4	212	100	3.8	0.04*
Others	17	-12.8	116	87.2	133	100		

*Significant at p-value <0.05, † Fisher's exact test

demographic and health surveys. Pills had a total discontinuation rate 21.4%, which was lower than 45-58% obtained in Armenia, Bangladesh, Colombia, Kenya, Indonesia, and the Dominican Republic. It was also lower than 51.1% in Honduras¹⁵, 46.3% in Iran¹², 32.3% in Uganda, Zimbabwe, Thailand,¹⁴ 36% in Bangladesh¹⁶ and 69% in a study conducted amongst French women. These higher rates could be explained by the fact that pills do not require active discontinuation as opposed to IUD or implants that would require a skilled health worker to discontinue. IUD had the lowest rate of 15.5%, this is slightly lower than the discontinuation rates than 22.2% found in southeast Nigeria,¹⁷ 22.1% in Iran,¹² 31.3%, 34.5%, 43%, and 72.1% in Nepal, India, France, and Honduras respectively. The observed higher rates are due to the fact that IUDs are not the most preferred contraceptive methods in the study environment due to fear of side effects, the need to undertake minor procedure, social and cultural beliefs attributed to IUDs.

Side effects was the most common reason why women

discontinued contraceptive method with a reason specific discontinuation rate of 67.1% which was higher than what was obtained in a study in southwest Nigeria 17.2% and 28.3%, 8.7% and 36.1% in northwest Nigeria, 29% in Kenya, 40% in India, 47% in Bangladesh, 4% in Brazil, and 55.3% in Honduras.^{9-11,15,18-24} Desire to have another child was 59.5% this was similar to what was found in southwest Nigeria 57% and 61.7%,^{18,22} 56% in India,¹⁹ which could be because of high fertility rate in developing countries and the cultural beliefs attached to having many children. Although a study in a similar community in northwest showed a discontinuation rate of 13.1%, which could be explain by the fact that the women were predominantly Christians, and 4% in Brazil, which is a more developed nation than Nigeria, and with a low fertility rate.^{9,24} Method failure constituted 16.7% as against what was obtained in India 0.9% and 4.8% in Honduras,^{15,20} method switch was 12%, higher than 2.1% found in Kenya¹⁰ and lower than 27.6% obtained in a similar community in northwest Nigeria. Husband's disapproval contributed 9.5% of the discontinuation

Table 6. Multivariate logistic regression by factors associated with discontinuation of reversible contraceptive method.

Factors	Crude OR	Adjusted OR	95% CI	p-value
Age				
<30	0.95	0.97	0.62-1.53	0.89
>30	1			
Ethnicity				
Hausa	1.13	1.2	0.72-1.96	0.49
Non-Hausa	1			
Marital status				
Currently married	1			
Not married	0.71	0.56	0.23-1.35	0.19
Highest level of education				
<Secondary	0.85			
≥Secondary	1	0.9	0.52-1.57	0.71
Husband's highest level of education				
<Secondary	0.76	0.75	0.40-1.42	0.38
≥Secondary	1			
Occupation				
Employed	1.49	1.59	0.85-2.96	0.14
Unemployed	1			
Number living of children				
1-4	1			
≥5	1.18	0.79	0.46-1.37	0.45
Desired number of children				
1-4	1.27			
≥5	1	0.69	0.44-1.08	0.11
Intention for use				
Spacing	1	0.83	0.45-1.53	0.54
Limiting	0.83			
Duration of use				
1-6 months	0.9	0.89	0.56-1.40	0.63
≥7 months	1			
Type of facility Public				
Yes	1			
No	0.8	1.7	0.41-1.19	0.18
Counseling on side effects				
Yes	1			
No	0.68	1.67	0.77-3.55	0.18
Influence on method choice				
Self	1			
Others	1.12	1.18	0.74-1.88	0.49

*Significant at p-value < 0.1

rate due to specific reasons which was higher than 4.0% in northwest Nigeria, 7% in southwest Nigeria and 1.4% in Kenya.^{10,11,18} This is because men in these regions are more educated and open to the idea of smaller family size as opposed to men in the northern part of Nigeria. Poor quality service, interference with body process, lack of access all had discontinuation rate of 1.2% each.

The factors found to be associated with contraceptive discontinuation in this study were ethnicity, type of contraceptive method, and influence on method choice. These were similar to some of the factors associated with contraceptive discontinuation in Ilorin (male partner's support, Influence of friends,

Table 7. Contraceptive behavior following discontinuation.

Behavior following discontinuation	Frequency (%)
Abandoned method altogether	43 (25.6)
Switched to another method	125 (74.4)
Total	168 (100)

Table 8. Fertility consequences following contraceptive discontinuation.

Fertility consequences after discontinuation	Number	Percentage (%)
Got pregnant	140	140 (83.3)
Did not get Pregnant	28	28 (16.7)
Total	168	100

Table 9. Pregnancy intention amongst women who discontinued contraception.

Intention to get pregnant	Frequency	Percentage (%)
Intended	100	71.4
Unintended	40	28.6
Total	140	100

Table 10. Pregnancy outcome (women who intended to get pregnant).

Pregnancy outcome	Frequency	Percentage (%)
Miscarriage	21	21
Induced abortion	4	4
Live birth	75	75
Total	100	100 (100)

Table 11. Pregnancy outcome (women who had unintended pregnancy).

Pregnancy Outcome	Number	Percentage (%)
Miscarriage	9	22.5
Induced abortion	7	17.5
Live birth	24	60.0
Total	40	100

complication, desired pregnancy),²⁵ Ibadan (desire to get pregnant, unpleasant side effects, husband factors, and menopause among IUD users),¹⁸ Oshogbo (low parity, outcome of antecedent delivery, and intention for use),²³ Ethiopia (fear of side effects, religious belief, opposition from partner and intention to get pregnant).²⁶ In studies conducted in India factors such as preference for a male child, previous contraceptive use, poor mass media exposure, average wealth index and rural residence were found to be associated with higher rate of contraceptive discontinuation but were not considered in this study.

Conclusions

The total reversible contraceptive discontinuation rate was 48% suggesting a need to tackle the problem of discontinuation through effective educational strategies and counseling techniques. Factors that were found to be statistically significant to contraceptive discontinuation were ethnicity, type of contraceptive method choice and influence on method choice. The most common reasons for discontinuing a reversible method of contraception were women's desire to conceive and the experience of side effects, with the most common side effects reported as reasons for discontinuation were bleeding, weight changes, and pain. It is therefore crucial to correct the misconceptions and identify the lack of correct and complete information both among the providers and the acceptors to improve the effectiveness of family planning programs.

Recommendations

There is the need to revise the FP program to strengthen counselling approaches to address fear of side effects, improve follow-up, and take advantage of missed opportunities to serve women after delivery. There is also the need to develop and implement a mandatory training package on family planning methods and counselling for all relevant health workers, such as physicians, midwives, and social workers. This training package should include other methods that may be added to the current choices. Additionally, community leaders should sensitize members of the community and families on the importance of contraception and consequences of discontinuation.

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