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Contraceptive Discontinuation among Nigerian Women: Exploring the Ethnic Variations

Jacob Wale Mobolaji, Samson Olusina Bamiwuye & Luqman Bisiriyu

Department of Demography and Social Statistics,
Obafemi Awolowo University, Ile-Ife, Nigeria
Email: mobolawale@gmail.com

Abstract

Rate of contraceptive discontinuation is on the increase among users who are still at risk of unwanted pregnancy despite their knowledge of the need for it. Little is known about associated factors and variations among the major ethnic groups in Nigeria. This study explored the ethnic variations in contraceptive discontinuation among married women of childbearing age 15–49 years (n=5,992) using Nigeria Demographic and Health Survey 2008. Factors associated with contraceptive discontinuation were examined using Pearson Chi-Square and Binary Logistic Regression. The result indicated that contraceptive discontinuation was highest among Hausa/Fulani(40.2%) and the minority ethnic groups (37.8%) compared with their Igbo (35.6%) and Yoruba counterparts (33.6%). Major reasons for discontinuation were infrequent sex (18.9%), menopausal or hysterectomy (17.8%) and fear of side effect (17.5%). Though with variations among the ethnic groups, age, residence, education, wealth status, number of living children, experience of child death, age at first marriage and birth, and desire for more children were the major factors associated with contraceptive discontinuation in Nigeria ($p < 0.05$). Odds of discontinuation were significantly lower among Yoruba women (OR=0.94; C.I=0.61–0.96; $p < 0.05$) compared with Hausa/Fulani counterparts. The study suggests focus on improving contraceptive technology, contraceptive education and wide coverage.

Key words: contraceptive discontinuation, ethnicity, Nigeria, differentials.

Introduction

Problem of undesired pregnancy has been the focus of several social researches over some decades due to its resultant effect on maternal and child health risks. Studies have shown that effective family planning programmes can reduce unintended pregnancies, maternal mortality, and improve child survival (Winikoff and Sullivan 1987; Population Reference Bureau

1998; Choe et al. 1999). Considering the benefits of family planning, it is therefore a necessary choice for every woman who wants to prevent unwanted pregnancies. However, the purpose would be defeated with the rising rate of discontinuation among users.

Nigeria's cultural and structural diversities, to a large extent, influence women's behaviour and lifestyle, especially in relation

to reproductive decision making. Civilization varies by ethnic group, hence the variations in social structure of each ethnicity. The decision making power, occupational involvement, social inclusion and socioeconomic characteristics of married women cannot be separated from their behavioural change. However, owing to various sensitizations and empowerment programmes emphasizing women's empowerment and informed reproductive as well as fertility decisions, awareness and acceptance of family planning technology are on the increase in most developing countries, including Nigeria. Despite the reported high awareness of contraceptive method, current contraceptive prevalence rate among sexually active women was 10% (Bankole *et al.*, 2006). Although, contraceptive use was relatively higher in some ethnic groups, especially in the South western Nigeria (66.3%), predominantly Yorubas (Olugbenga-Bello, Abodunrin and Adeomi, 2011), discontinuation among users calls for scientific investigation. Over the years, Nigeria was noted for low contraceptive prevalence rates (CPR), 3.5%, 8.2%, 9.7%, 9.8% as noted in 1990, 2003, 2008 and 2013 NDHS reports respectively. Unfortunately, discontinuation appears to be on the increase among the users. Contraceptive prevalence rate is inversely related to fertility rate (TFR). Hence, high rate of discontinuation among users further lowers CPR and consequently result in high fertility as well as rapid population growth and delayed development.

Dwelling on the previous studies, efforts to promote contraceptive use, provide high-quality family planning services and achieve low fertility are hanged on utilizing empirical method to understand the contraceptive methods discontinued and why women discontinue some or all methods. It is, therefore, imperative to examine the current prevalence of contraceptive discontinuation among married women who are not pregnant and do not want to get pregnant, not sterilized, not declared infecund and are at risk of pregnancy. This study was

designed to add to the existing knowledge on contraceptive use by investigating and documenting the prevalence of discontinuation of each contraceptive method as well as abandonment of all the methods, compare discontinuation among the major ethnic groups and identify the differentials in discontinuation of contraceptive use in Nigeria.

Literature Review

Contraceptive discontinuation as defined by Karen (2002) is stopping contraceptive use while still at risk of unintended pregnancy. Stopping contraceptive use for reasons other than being currently pregnant, declared infecund, previously sterilized and wanting to be pregnant is a risk; such woman is at risk of undesired pregnancy.

A review of literature on contraceptive use among women offers some insights into the contributing factors to discontinuation among contraceptive users. The Nigeria Demographic and Health Survey (2003) reported that among sexually active women in Nigeria there was low contraceptive prevalence rate (8%), supported by Ezegwui, Ogunuo and Nwogu-Ikojo (2005) who claimed that contraceptive use is generally low, though with a promising future, especially in the Hausa and Muslim communities of northern Nigeria. A decade is passed, yet contraceptive use remains low among married women, 9.8% (NPC and ICF Macro, 2013). According to Vaughan, Trussell, Kost, Singh and Jones (2008) failure to prevent pregnancy, difficulty in consistent and correct use of methods, dissatisfaction with available methods, and partner's opposition to methods are among the reasons women abandon contraceptive methods. Some women are short term discontinuers, stopped using a contraceptive method but did not immediately begin to use another method, exposing themselves to the risk of unintended pregnancies during the periods of non-use, while some are long term or life time discontinuers. To what

extent these reasons are applicable to Nigerian women need to be verified.

Contraceptive discontinuation may differ by age group because age may influence intention to have more children. Kalmuss *et al* (1996) discovered that younger women (below 20 years) had higher risk of contraceptive discontinuation than older women, and was supported by Curtis and Blanc (1997). However, their finding did not distinguish married women who needed to limit and space births. There is high probability that previous unmarried contraceptive users could discontinue at marriage due to their immediate desire for children. Education also plays an important role in the acceptance and use and discontinuation of contraceptive. An Indonesian study established that contraceptive discontinuation was significantly associated with women's educational level (Fathonah, 2000), and was also supported by Leite and Gupta (2007) in studies conducted in Brazil and Bangladesh that contraceptive discontinuation decreased as women's education increased. While supporting the findings and that of Arifin (2003) who noted that women who lived in urban areas were less likely to discontinue contraceptive use than those who lived in rural areas, Nigeria's multi-cultural setting requires scientific evidence to validate the applicability of the findings to each ethnic group. Religious perspectives on family and children also affect women's adoption of contraceptive methods. Helweldery (2004) in Indonesia and D'antona (2009) in Brazil established that religion plays a major role in the use and choice of contraceptive methods. Religious belief in Nigeria is somewhat nested into cultural practice. Therefore, this study examines the effect of religion on discontinuation behaviour of women when moderated by ethnic affiliation.

Fertility history such as age at first marriage, age at first birth, number of living children, experience of child death and desire for more children are also found relevant in

contraceptive studies as they could influence women's decision in relation to contraceptive use. Fertility history mainly relates to the decision of women to access family planning information and services. The number of children is an important factor to examine in relation to whether or not a woman would desire to stop bearing children and whether or not she continues contraceptive use. In particular, the number of living children relates to desire for more children which in turn may affect contraceptive use and its continuation. Women who had reached desired family size and had been using contraceptive method before may prefer to continue their contraceptive use. Fathonah (2000) pointed out that, women in Indonesia who had small family or had less living children tended to discontinue much earlier than those who already had a big family. However, Arifin (2003) noted that women with no children or with one child were less likely to experience side effects and health concerns, hence were less likely to discontinue contraceptives. This finding positioned number of living children as well as other related fertility history as part of the important factors to consider in this study. Understanding the predictors of contraceptive discontinuation in Nigeria where little is known about the matter will strengthen efforts in reducing the problem of unmet needs in the country. In this regard, the study examines the differentials in contraceptive discontinuation among women, giving attention to ethnic differences in Nigeria.

Data and Methods

This study made use of 2008 Nigeria Demographic and Health Survey (NDHS). Summarizing from the NPC and ORC Macro, 2008 reports, the NDHS programme adopted the sampling frame of Nigeria's population and housing census of 2006. The primary sampling unit (PSU) also called cluster was defined on the basis of the enumeration areas (EAs) from 2006 EA census frame. In the survey, stratified two-

stage cluster design consisting of 888 clusters was used for sample selection; a representative sample 41 households from each cluster and a total sample of 36,800 households nationwide, proportionately distributed between rural and urban areas was selected for the survey (NPC and ICF, 2009).

All women of reproductive ages 15-49 years who permanently reside or visited and slept in the selected households on the night preceding the survey were eligible and interviewed. The data were collected from a sample of 33,385 women of child bearing age from randomly selected households across all the 36 states and the FCT; relevant information on demographic and health indicators was elicited from the respondents. The dataset was the most appropriate to capture all previous users who discontinued contraceptive use while still at risk of unwanted pregnancy. The Nigeria Demographic and Health Survey 2013 did not provide the denominator for discontinuation since it did not capture previous users but only the current users and the last method discontinued in the last five years. A weighted sample size of 5,992 of ever married women, who had previously used at least a contraceptive method before the survey, was extracted and used for the study.

The dependent variable was current contraceptive status of previous users, which is dichotomous – discontinue or continue. All women who had previously used one or more contraceptive methods but had currently stopped all the methods at the time of the survey were regarded as discontinuers, excluding those who were pregnant, previously sterilized or declared infecund and want to get pregnant. The independent variables include age, education, residence, wealth status and employment status, number of living children, experience of child death, age at first marriage and birth, and desire for more children. All the independent variables were recoded into categorical variables. The respondents were

grouped into the major ethnic groups in Nigeria – Hausa/Fulani, Igbo, Yoruba and the minor ethnic groups.

Prevalence of discontinuation was displayed by ethnicity, using a simple bar chart. Chi-square test of independence was used to examine the relationship between current contraceptive status of previous users and ethnicity, individual socio-demographic characteristics and fertility history. At multivariate level, binary logistic regression was used to determine the odds of discontinuation among the ethnic groups while controlling for the effect of background characteristics and fertility history of the respondents at 95% confidence level.

Results

The result of the analysis shows that discontinuation of contraceptives was higher among Hausa/Fulani (40.2%) and the ethnic minority groups (37.8%) compared to Yoruba (33.6%) and Igbo (35.6%) women, hence significantly varies ($\chi^2=10.192$; $p<0.05$) by ethnic affiliation (See Table 1). Age of women was a significant factor associating with discontinuation across the ethnic groups (Table 3). Discontinuation increased with age, except among Igbo and Yoruba women where young adult of age group 25 – 34 years were the least, while the older women had highest level of discontinuation irrespective of ethnic affiliation. Hence, older women are more likely to discontinue contraceptives relative to the younger ones. Besides, place of residence, whether rural or urban, was significantly associated with discontinuation among Igbo ($\chi^2=8.480$; $p<0.01$) and the ethnic minority groups ($\chi^2=6.775$; $p<0.05$), while education ($\chi^2=14.324$; $p<0.01$) and religion ($\chi^2=8.084$; $p<0.05$) were the major determinants in the ethnic minorities. Discontinuation was higher among rural women in Igbo (40.0%) and the ethnic minority groups (39.6%), compared to their urban counterparts, 32.6% and 34.4% respectively. There was significant decline in

discontinuation as level of education increased in the two ethnic groups. Hence, discontinuation was least among women with secondary or higher education, but higher among Christian women compared to their counterparts in other educational and religious groups in the ethnic minorities. Wealth status showed a significant association with discontinuation which was highest among the poor compared to other

Nigerian women. Number of living children, experience of child death, age at first marriage and desire for more children were significantly associated with discontinuation irrespective of women's ethnic affiliation. Major reasons identified for discontinuation among contraceptive users in Nigeria were infrequent sex, menopause or hysterectomy and fear of side effect (Table 2).

Table 1: Association between ethnicity and contraceptive discontinuation

Ethnicity	Contraceptives Discontinuation		Total	χ^2	p
	Continue	Discontinued			
Hausa	250(59.8)	168(40.2)	418	10.192	0.043
Igbo	737(64.4)	408(35.6)	1145		
Yoruba	1224(66.4)	619(33.6)	1843		
Ethnic minorities	1609(62.2)	977(37.8)	2586		

Table 2: Reasons for Contraceptive discontinuation by ethnicity

	Hausa/ Fulani N=418	Igbo N=1145	Yoruba N=1843	Ethnic minorities N=2586	Overall Nigeria N=5992	χ^2
Not married	0	0.8	0.6	2.1	1.2	130.985 _{LR} ***
Infrequent sex	5.7	26.2	22.0	17.3	18.9	
Menopausal or hysterectomy	3.3	17.5	25.3	17.0	17.8	
Sub-fecund or infecund	0	0	0.5	1.1	0.6	
Wants more children	12.3	0	0.5	3.3	2.9	
Respondent opposed	6.8	6.5	9.4	12.8	10.1	
Husband opposed	14.3	3.6	1.1	4.2	4.4	
Others opposed	1.3	0	0	0.3	0.3	
Religious prohibition	12.0	2.5	0	2.9	3.0	
Knows no method	5.0	0	0.9	1.0	1.2	
Knows no source	0.7	0	0	0.4	0.2	
Health concern	2.4	8.8	6.4	6.6	6.5	
Fear side effects	15.8	17.2	21.3	15.7	17.5	
Lack of access	0	0	0	0.7	0.3	
Cost too much	0	0	0	0.7	0.3	
Inconvenient to use	0	1.0	2.3	3.3	2.2	
Interfere with body	8.0	5.2	3.4	1.8	3.5	
Others	10.9	7.5	4.1	7.1	6.8	
Don't know	1.6	3.3	2.3	1.9	2.2	

LR – Likelihood ratio used

Table 3: Association between socio-demographic characteristics and contraceptive discontinuation by ethnicity

Socio-demographic characteristics	Hausa/ Fulani N=418		Igbo N=1,145		Yoruba N=1,843		Ethnic minorities N=2,586		Overall Nigeria N=5,992	
	discontinued	n	discontinued	n	discontinued	n	discontinued	n	discontinued	n
Age group (years)										
Adolescent(<25)	32 (34.6)	93	50(32.8)	152	62(31.3)	199	125(32.2)	389	269(32.4)	833
Young Adult (25-34)	65(35.7)	181	145(28.7)	504	232(29.2)	793	372(32.8)	1,135	813(31.1)	2613
Older women (≥35)	71(49.6)	144	213(43.6)	489	324(38.1)	851	480(45.2)	1,062	1089(42.9)	2546
χ^2	3.446*		23.803***		13.299**		43.264***		$\chi^2=73.750***$	
Residence										
Urban	93(42.4)	218	221(32.6)	678	426(34.2)	1,248	307(34.4)	892	1047(34.5)	3037
Rural	75(37.7)	200	187(40.0)	467	192(32.3)	595	670(39.6)	1,694	1124(38.0)	2955
χ^2	0.744		8.480**		0.009		6.775*		7.445*	
Educational										
No formal education	101(42.6)	237	16(45.5)	35	50(37.3)	135	147(41.4)	356	314(41.2)	762
Primary	30(41.8)	72	92(36.5)	261	180(37.1)	484	342(41.8)	818	644(39.6)	1626
Secondary or higher	37(33.7)	109	300(34.9)	859	389(31.8)	1,224	487(34.5)	1,412	1213(33.7)	3604
χ^2	1.179		2.176		5.007		14.324**		23.756***	
Wealth status										
Poorer/poorest	63(43.6)	145	26(42.6)	61	45(34.3)	131	260(40.6)	639	394(40.3)	976
Middle	19(37.0)	52	60(34.7)	173	68(37.4)	181	207(38.2)	543	355(37.3)	950
Richer/Richest	86(38.7)	221	322(35.3)	911	506(33.1)	1,531	510(36.3)	1,404	1423(35.0)	4066
χ^2	0.426		1.842		1.960		3.619		9.305*	
Religion										
Christianity	5(39.2)	12	399(35.7)	1119	345(31.8)	1,085	874(38.8)	2,252	1622(36.3)	4468
Others	162(40.2)	403	9(36.5)	24	274(36.4)	752	102(30.8)	331	546(36.1)	1511
χ^2	0.251 _{LR}		0.617 _{LR}		3.230 _{LR}		8.084*		0.014	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; LR – likelihood ratio reported; n – number of respondents in the group upon which proportions were based

The result further shows that number of living children respondents have and experience of child death, age at first marriage and desire for more children were significantly associated with contraceptive discontinuation ($p < 0.05$) across the ethnic groups (Table 4). Women who have higher number of living children and those that experienced one or more child deaths were more likely to abandon contraceptive use compared to their counterparts in each of the ethnic groups. Also, women who married at later age had lower level of discontinuation compared to those who married earlier. Age at first birth was

significantly associated with contraceptive discontinuation among Yoruba women ($p < 0.05$) where about 41.2% of the respondents who had their first birth as a teenager (< 20 year old) discontinued contraception compared to those that had it at adult (≥ 25 years), 31.1%; however, across the ethnic groups, discontinuation was higher among respondents who had their first birth at later age. Women who desired more children had low level of discontinuation compared to those who would not want to have more children.

Table 4: Association between fertility history and contraceptive discontinuation by ethnicity

History of fertility experience	Hausa/Fulani N=418		Igbo N=1145		Yoruba N=1843		Ethnic minority N=2586		Overall Nigeria N=5992	
	discontinued	n	discontinued	n	discontinued	n	discontinued	n	discontinued	n
Number of Living Children										
None	3(24.7)	14	9(8.2)	106	3(4.4)	59	23 (13.7)	168	38 (10.9)	347
1 – 3	87(35.4)	247	235(34.1)	691	443(31.9)	1388	544 (34.8)	1562	1309 (33.7)	3889
≥ 4	77(49.1)	157	164(47.1)	348	173(43.8)	396	410 (47.9)	856	825 (46.9)	1756
χ^2	8.919*		43.373***		33.018***		86.955***		175.003***	
Experience of child deaths										
No	80(35.2)	227	265(32.6)	811	456(31.5)	1448	890 (35.7)	1651	1390 (33.6)	4137
Yes	88(46.0)	191	143(42.8)	334	163(41.3)	395	387 (41.4)	935	782 (42.1)	1855
χ^2	5.004*		8.364**		10.276**		8.533*		36.177***	
Age at first marriage										
< 20	151(41.5)	364	170(40.0)	424	299(39.1)	764	635 (40.4)	1573	1255 (40.2)	3125
20 – 24	16(36.7)	44	151(36.6)	413	209(30.4)	689	222 (32.3)	688	599 (32.6)	1834
≥ 25	1(5.9)	10	87(28.2)	308	110(28.3)	390	199 (36.8)	325	317 (30.7)	1033
χ^2	5.445*		8.707*		14.314***		13.851**		40.113***	
Age at first birth										
< 20	134(43.8)	306	148(43.5)	340	239(41.2)	580	553 (41.0)	1348	1074(41.7)	2575
20 – 24	26(30.7)	84	142(35.3)	403	246(31.4)	783	292 (37.0)	789	706 (34.3)	2058
≥ 25	5(27.7)	16	111(36.5)	303	131(31.1)	423	115 (37.4)	309	362 (34.4)	1051
χ^2	5.872		4.624		13.123**		3.985		29.510***	
Desire for more children										
No	46(48.0)	96	208(47.6)	437	298(39.7)	751	452 (47.6)	950	1005 (45.0)	2233
Yes	98(34.9)	282	165(26.2)	631	271(27.7)	976	432 (29.9)	1445	966 (29.0)	3334
Undecided	23(57.9)	50	34(44.4)	77	50(42.9)	116	93 (48.5)	191	200 (47.1)	425
χ^2	10.887**		42.735***		24.784***		88.422***		153.818***	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; n – subgroup number of respondents upon which proportions were based

Using multivariate analysis, factors influencing contraceptive discontinuation are presented in three multilevel models (See Table 5). The result revealed that the odds of contraceptive discontinuation was lower among Igbo and women in ethnic minority groups, though not significant, relative Hausa/Fulani women as predicted in Model 1. The likelihood of discontinuation which was significantly lower among Yoruba women (OR=0.77; $p < 0.05$) in the first model maintained the same effect when controlling for the effect of socio-demographic characteristics of the respondents in model 2. The interacting effect further shows that the odds of discontinuation among women ages 35 years or older were significantly higher (OR=1.56; $p < 0.05$) relative to their counterparts who were below 25 years. The odds of

discontinuation were also higher significantly (OR=1.15; $p < 0.05$) among rural women compared to their urban counterparts. Controlling for fertility history in model 3, effect of ethnicity on contraceptive discontinuation faded off; however, discontinuation was significantly lower among women ages 25 – 34 years (OR=0.76; $p < 0.05$) and women ages 35 years or over (OR=0.83; $p > 0.05$) in Nigeria. Rural women maintained its significantly higher odds of discontinuation when compared with their urban counterparts. Similarly, the odds of discontinuation among women who had higher number of living children and those that experienced child death was statistically and significantly higher ($p < 0.05$), relative to their counterparts whose number of living children were fewer and those who never

experienced child death. Also, those that desired more children had statistically significant lower odds of discontinuation

($p < 0.05$) compared to those who do not desire to have more children.

Table 5: Hierarchical regression models showing interaction effect of socio-demographic characteristics and history of fertility experience on contraceptive discontinuation

Socio-demographic characteristics		Model 1	Model 2	Model 3
		(Unadjusted OR)	(Adjusted OR)	(Adjusted OR)
		OR (95% C.I)	OR (95% C.I)	OR (95% CI)
Ethnicity	Hausa/Fulani ^{RC}	1.00	1.00	1.00
	Igbo	0.90 (0.71 – 1.15)	0.85(0.64 – 1.14)	0.88(0.65 – 1.19)
	Yoruba	0.77* (0.61 – 0.96)	0.75*(0.58 – 0.97)	0.79(0.60 – 1.02)
	Ethnic minority	0.94 (0.76 – 1.17)	0.86(0.66 – 1.11)	0.86(0.66 – 0.12)
Age categories	Adolescent(<25) ^{RC}		1.00	1.00
	Young Adult (25-34)		0.97 (0.81 – 1.16)	0.76** (0.63 – 0.93)
	Older women (≥35)		1.56*** (1.31 – 1.86)	0.83 (0.65 – 1.04)
Residence	Urban ^{RC}		1.00	1.00
	Rural		1.15*(1.00 – 1.31)	1.15*(1.00 – 1.32)
Education	No formal education ^{RC}		1.00	1.00
	Primary		1.02(0.84 – 1.23)	1.05(0.86 – 1.27)
	Secondary or higher		0.88(0.72 – 1.07)	1.06(0.87 – 1.30)
Wealth status	Poorer/Poorest ^{RC}		1.00	1.00
	Middle		0.92(0.77 – 1.11)	0.90(0.74 – 1.09)
	Richer/Richest		0.98(0.82 – 1.17)	1.02(0.85 – 1.22)
Religion	Christianity ^{RC}		1.00	1.00
	Others		0.90(0.77 – 1.06)	0.90(0.76 – 1.06)
History of Fertility experience				
Number of Living Children	None ^{RC}			1.00
	1 – 3			2.35*(1.01 – 5.49)
	≥ 4			3.10* (1.31 – 7.35)
Experience of child deaths	No ^{RC}			1.00
	Yes			1.15*(1.01 – 1.31)
Age at first marriage (years)	< 20 ^{RC}			1.00
	20 – 24			0.95(0.80 – 1.14)
	≥ 25			0.97 (0.75 – 1.28)
Age at first birth(years)	< 20 ^{RC}			1.00
	20 – 24			0.92(0.78 – 1.09)
	≥ 25			0.98(0.75 – 1.28)
Desire for more children	No ^{RC}			1.00
	Yes			0.62***(0.53 – 0.72)
	Undecided			1.22(0.97 – 1.54)

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; RC - Reference Category; OR - Odds Ratio; CI- Confidence Interval

Discussion and Conclusion

Consistent and effective contraceptive use has been confirmed a good fertility control measure to prevent unintended pregnancy with a view to reducing high fertility and maternal mortality, and improve child health; however, this becomes unrealistic where women who are at risk of pregnancy do not use or shortly discontinue use. This study aims at examining the differentials in contraceptive discontinuation among the major ethnic groups in Nigeria, with a view to investigating the prevalence of discontinuation, determine whether ethnicity matters in contraceptive discontinuation and identify the associated factors.

The findings of the study revealed that contraceptive discontinuation varies significantly by ethnicity. While the national discontinuation level was 36.2%, about four out of every ten Hausa and Igbo users and those of other ethnic minorities abandoned contraception, while three out every ten Yoruba women were discontinuers. Hence, ethnic consideration is very important in the study of contraceptive discontinuation.

Among the users across ethnic groups, a significantly higher proportion of discontinuation was observed among older women. This is contrary to the claims of Kalmuss, Davidson, Cushman, Heartwell and Rulin (1996) as well as Curtis and Blanc (1997) who concluded that younger women were more vulnerable to contraceptive discontinuation. From contextual point of view, sometimes, older women who are still at risk of unwanted pregnancy might be tired of contraception or feel family planning is no longer necessary for them due to infrequent sex, job demands, domestic and societal responsibilities; hence, discontinuation increases at older age. The study further revealed that ethnic minorities and Igbo rural women were significantly more vulnerable to discontinuation compared with their urban counterparts. This position agrees with Arifin (2003) who stated that urban women were more susceptible to discontinuation than the ones in rural areas. It should be noted that not

all contraceptive methods are available, especially in rural areas due to remoteness, poor transportation and non-availability of service centres. Where the preferred or compatible methods are not available, an Igbo woman becomes vulnerable to discontinuation.

Wealth status does not show a significant relationship with contraceptive discontinuation in all the ethnic groups in line with the findings of Creanga, Acharya, Ahmed and Tsui (2006) in a study in USA and Romania where wealth status did not appear to have any significant effect on contraceptive discontinuation. However, proportion of discontinuers was higher among poor women in Hausa/Fulani, Igbo and ethnic minority groups; a higher wealth status implying less vulnerability to contraceptive discontinuation; contrary to the findings of Laguna et al (2000) in Philippines and Chawala et al (2003) in Bangladesh where high-income women were more likely to discontinue their method. Based on the finding of this study, it is believed that high-income Hausa/Fulani, Igbo and ethnic minorities' women can afford desired contraceptive methods, therefore will have no need abandoning the method. Meanwhile, the finding suggests quick discontinuation by low-income users. Education and religion were not significant predictors of contraceptive discontinuation across the ethnic groups, contrary to the finding of Fathonah (2000) and Helweldery (2004) in Indonesia and that of Leite and Gupta (2007) and D'antona (2009) in Brazil where both were found playing a major role in the use and choice of contraceptive methods.

This study further found that number of living children and experiences of child death were statistically significant drivers of contraceptive discontinuation across the ethnic groups. Users with larger family size were more likely to discontinue contraceptives compared to small-family users, contrary to the finding of Fathonah (2000) who pointed out that, women in Indonesia who had small

family or had less living children tended to discontinue much earlier than those who already had a big family. Women who experienced one or more child death were more susceptible to discontinuation compared those who did not. Age at first marriage and first birth have statistically significant effect among Yorubas, earlier marriage and birth suggesting greater vulnerable to discontinuation in the ethnic group; whereas, desire for more children was a significant factor among Igbo women; those who desired more children had higher proportion of discontinuers relative to those who did not.

This study concluded that variation in the prevalence of contraceptive discontinuation among women and the effects of its associated factors is deeply rooted in their ethnic diversity in Nigeria. Whereas, women's age, number of living children, experience of child death, age at first marriage and desire for more children were significant determining factors in all the ethnic groups, rural or urban residence were major factors among Igbo and ethnic minorities; education and religion were significant factors differentiating contraceptive behaviour of women of ethnic minorities. Age at first birth was the determining factor for contraceptive discontinuation among Yoruba women.

Policy Implication

Based on the findings of this study, contextual and cultural considerations are recommended for comprehensive understanding of factors influencing contraceptive discontinuation among Nigerian women. Besides wider coverage of and effective contraceptive use among married women, effort to reduce unmet needs also involves ensuring continuity among users.

In order to achieve this with all its benefits, irrespective of switching among methods, appropriate policy implication in vulnerable settings and groups of high level of discontinuation is key. Among Hausas where discontinuation is high at older age, educative interventions by service providers on the necessity of continuous contraception even at older age before menopause is recommended. In rural settings where accessibility is low, government efforts should be geared towards making contraceptive options available to users in order to allow them make preferred and compatible choices among method(s). High fertility is well known to be associated with poverty; therefore, non-availability of affordable contraceptive methods to the low-income Hausas women deprives them the opportunity of avoiding unwanted pregnancy. Government, non-governmental organizations and service providers should subsidize contraceptive methods further in order to spur users who cannot afford the preferred, available or compatible methods. Women who married early or had first birth at early age, and those that already had large or desired family size should be reoriented, emphasizing the risk of abandonment and health benefits of limited and well-spaced births; hence, the necessity of continuous contraception. Child mortality experience among women which has been found a significant driver of discontinuation should be given a more serious attention. All stakeholders should gear up action plans on reducing child mortality in Nigeria, in order to boost contraceptive use and continuity among users.

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