JOURNAL OF COMMUNITY MEDICINE AND PRIMARY HEALTH CARE

ORIGINAL ARTICLE

Determinants of Desire for Child spacing among Women attending a Family Planning Clinic in Kaduna, North Western Nigeria

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Keywords:

Family planning, Child spacing, Child limiting, Nigeria

ABSTRACT

Background: Family planning (FP) refers to a conscious effort by a couple to limit or space the number of children they want using contraceptive methods. This study examined the determinants for child spacing among women of reproductive age at the family planning clinic of the Ungwan-Rimi Primary Health Care facility, Kaduna North LGA, North western, Nigeria.

Methods: The study was a retrospective cross-sectional review of the records of 1351 clients who accessed FP services at the facility between June 2010 and May 2017. A proforma was used to extract required information from the clients' records. Data was analyzed using the IBM SPSS Version 25.0 and STATA/SE 12. Statistical significance was set at p<0.05

Results: The median (IQR) age of the clients was 27 (8.0) years. Majority 883 (65.4%) completed at least secondary education. A greater proportion of the clients' 1119 (82.8%) desired child spacing compared to child limiting 232 (17.2%). Bivariate analysis showed that younger age (p<0.001), attainment of up to a secondary education (p=0.04), parity < 4, (p<0.001) and last child birth (LCB) ≤1year, (p<0.001) were significantly associated with desire for child spacing. Multiple logistic regression analysis further revealed that the older age group ≥ 35 years (AOR=3.72, 95%CI=2.21-6.63) parity of ≥ 4 (AOR=2.35, 95%CI = 1.6-3.46) and use of long acting reversible contraceptive (LARC) (AOR=1.40, 95%CI=1.02-1.91) were significantly associated with increased odds of no desire for child spacing.

Conclusion: This study shows that clients' age group, parity and preference for LARC influenced behavioral attitudes for child spacing.

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INTRODUCTION

Family planning (FP) is one of the most cost-effective interventions to improve maternal and child health outcomes especially in developing countries.[1-2] The World Health Organization defines FP as the ability of individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. This is achieved through usage of modern contraceptive devices and the treatment of involuntary infertility.[3-4] FP enables women not only to plan the time for pregnancy, but also allows for child spacing; therefore, it helps to reduce unwanted pregnancies, unsafe abortions and maternal deaths from the high risk pregnancies.[5] The Nigeria maternal mortality ratio is currently the fourth highest

globally with an estimated 160 maternal deaths per day, the majority of which is from the northern Nigeria, where the contraceptive prevalence rate is also the lowest.[6-7] Previous studies had revealed that there could be a two-thirds reduction in the rate of maternal and neonatal deaths through the use of modern contraceptive devices.[8, 9] Strengthening family planning services therefore, is essential for improving health, promoting human rights and socio-economic development.[10]

The general fertility rate (GFR) of 190 births per 1,000 women reported in the 2013 Nigeria National Demographic and Health Survey (NDHS) was three times higher than that of USA (62/1000).[11] The Nigerian mean total fertility rate (TFR) of 6.2 was also about three times higher than those of Sweden (1.9), United Arab Emirate (UAE) (1.7) and South Africa (2.5).[12] However, the gross domestic products (GDPs) for Sweden, South Africa and United Arab Emirate were twenty-five, fifteen and two times higher, respectively than the Nigeria's meager GDP of 2,178 USD in 2016.[13] This may imply that uncontrolled birth is a trigger for poverty at the individual, community and national levels. The Nigeria Multiple Indicator Cluster survey (MICS) 2017 also revealed that the contraceptive prevalence rate (CPR), utilization of modern contraceptive devices and unmet need for FP in Nigeria were 15%, 10% and 16%, respectively.[14] These maternal health indices have contributed to the increasing Nigeria population currently estimated at 198 million and an average annual urban population growth rate of 6.5%.[15] This has negative impact on the national economy, environment, health and social infrastructures, with the consequent challenges of unemployment, poverty, crime and insecurity. Thus, a preventive check on child birth rate proposed by the Malthusian theory of population growth is inevitable in the Nigeria situation.[16] The NDHS 2013 showed that Kaduna State had the lowest TFR (4.1) in the country and the highest CPR of 20.2 in northern Nigeria, but also had the highest proportion (21%) of women of reproductive age group (WRAG) who were currently pregnant in the country.[17] This implies that the discontinuation rate of the modern contraceptive utilization may also be high among these women.

This study therefore examined the socio-demographic and reproductive health determinants of the desire for child spacing among the clients at the Family planning clinic in Kaduna State University's Urban Primary Health Care Centre (PHC) at Ungwan-Rimi, Kaduna. Majority of women and children get essential health care services at the PHCs in Nigeria which is the first point of contact with the national health system of the country.[18] Understanding the factors influencing contraceptive uptake at this level of health care service delivery can therefore help to understand the appropriate programme interventions to improve both the quality and uptake of FP services, which would in turn improve maternal and child health and consequently foster socio-economic development in line with the Sustainable Development Goal 3.

METHODOLOGY

This study was a retrospective, cross-sectional review of the records of 1351 clients who accessed FP services at the Kaduna State University's Urban Primary Health Care (PHC) centre in Ungwan-Rimi Kaduna North LGA between June 2010 and May 2017. The centre serves 13 contiguous communities with an estimated population of 27,000. The study population were women of reproductive age group (15-49 years) who accessed FP services at the facility. The inclusion criteria were the clients whose FP information such as the socio-demographic profile, desire for FP or child

spacing, child limiting, parity, type of contraceptives and sources of FP information could be obtained from the available records. The study excluded those with incomplete or no record.

A proforma was used to extract the required information of the clients from the clients' file which was collated into an excel file and transferred into computer using a SPSS format. Data of 1351 WRAG were used for the study. The data entry was done with the IBM SPSS Statistics for Windows, Version 25.0. (Armonk, NY: IBM Corp) while the StataCorp STATA/SE 12 (StataCorp.2011; Stata Statistical Software: Release 12, College Station, TX; StataCorp LP) was used for both descriptive and inferential analyses. The frequencies and the percentages of the socio-demographic and clinical profiles of the patients were computed. For the bivariate analysis, chi-square was used to determine the factors associated with the uptake of the FP methods. The level of statistical significance was set at $p < 0.05$.

The primary outcome variable was the desire for child spacing. The predictor variables identified from the patients' records were age, the parity, educational status, religion, source of FP information, outcome of last pregnancy, and contraceptive method used. Multivariate analysis was carried out through logistic regression against these sets of independent variables to determine the predictors of desire for child spacing. Ethical clearance for the study was obtained from the Kaduna State Ministry of Health and Human Resources. The permission of the Matron-in-charge of the health facility was also obtained before data collection.

RESULTS

The median (IQR) age of the 1351clients was 27 (30.75) years with the highest proportion of the WRAG 698 (51.7%) being between 25-34 years.

Majority had completed at least a secondary education 883 (65.4%). More than three-quarters of clients 1102 (81.6%) received information about FP from clinic personnel compared to other sources. More clients 780 (57.7%) utilized the short acting (SARC) compared to the long acting reversible contraceptives (LARC). Majority 783 (54.4%) had less than 4 children and 1308 (96.8%) had no complication in their last delivery. A greater proportion of the clients, 1119 (82.8%) came to the clinic for child spacing rather than child limiting 232 (17.2%) **Table 1**

Bivariate analysis showed a significant relationship between younger age group (p<0.001), at least a secondary level of education (p=0.04), parity < 4 (p<0.001), year of last child birth (LCB) $\leq$ 1year (p<0.001), and increased desire for child spacing. **Table 2**

The multiple logistic regression analysis further revealed that older age group $\geq$ 35 years (AOR = 3.72, 95%CI = 2.21-6.63), clients' parity of $\geq$ 4 (AOR = 2.35, 95%CI = 1.6-3.46) and use of long acting reversible contraceptives (AOR = 1.40, 95%CI = 1.02-1.91) were associated with the increased odds of no desire for child spacing. **Table 3**

DISCUSSION

This study showed that most of the women who accessed the FP services came for child spacing rather than child limiting. This is typical of the many African communities where socio-cultural values favour the desire for many children.[19-20] Birth spacing techniques therefore remain the preferable method of contraception rather than permanent methods of family planning in these setting since many of the women still hope to have more children for socio-cultural reasons.[20] This also explains the reason for the preference for the SARC;

Table 1: Socio demographic and reproductive health profile of the clients

Variables	Frequency (n=1351)	Percent
Age group (years)		
15-24	439	32.5
25-34	698	51.7
≥ 35	214	15. 8
Median (IQR) age 27 (8.0) years		
Level of education		
No education	202	15.0
Primary	266	19.7
Secondary/Post-Secondary	883	65.4
Religion		
Muslim	1076	79.6
Christian	275	20.4
Reproductive health profile		
Parity		
<4	783	54.4
≥4	568	45.6
Last pregnancy outcome		
Normal	1308	96.8
Complicated	43	3.2
Last child birth (years)		
≤ 1	1009	74.7
>1	342	25.3
Type of contraceptives used		
Short acting reversible (n=780)		
Combined oral Contraceptives	139	10.3
Noristerat	472	34.9
Depo-Provera	162	12.0
Sayana press	7	0.5
Long acting reversible (n=571)		
Hormonal implant	559	41.4
IUCD	12	0.9
Source of FP information		
Clinic personnel	1102	81.6
Friends/ Relatives	118	8.7
Community outreach	70	5.2
Mass Media	61	4.5
Reason for using FP service		
Child spacing	1119	82.8
Child limiting	232	17.2

the combined oral contraceptives and injections among participants in this study, compared to the utilization of the LARC such as the IUCDs and sub dermal implants, which is consistent with findings from previous studies.[21-25] However, we observed in this study that when the FP methods were considered individually, the demand for the sub-dermal implants were the highest. This increased utilization of sub-dermal implants by these women will enhance adequate child spacing which in turn will improve maternal and child health outcomes.[26] Previous studies have also reported increasing demand for the hormonal implant contraceptive by WRAG in developing nations.[27-29] It was also noted in this study that fewer women with high parity (≥4) came to the health facility for FP services compared to the WRAG with parity < 4. This contrasts with previous reports which associated high parity with increase demand for FP services.[30-31]

The reasons for the lower patronage of the FP services by women with > 4 children could not be fully explored within the scope of this quantitative study, however further analysis of the data showed that the odds for desire for child limiting was 26% higher for the Christian women as compared to the Muslim women, although it was not significant, indicating the likely influence of socio-cultural and religious beliefs on the utilization of FP services.` Previous studies have reported the socio-cultural context as a major contributor to the low utilization of FP services in Nigeria and have proposed the use of religious leaders and significant others as champions of family planning at the community level.[32-34]

TABLE 2: Socio-demographic and reproductive health factors associated with desire for child spacing in clients

Variables	Child Yes (n=1119) n (%)	Spacing No (n=232) n (%)	χ2	p-value
Age (years)				
15-24	398 (90.7)	41 (9.3)	136.2	<0.001
25-34	602 (86.2)	96 (13.8)		
≥ 35	119 (55.6)	95 (44.4)		
Level of education				
No education	159 (78.7)	43 (21.3)	6.44	0.04
Primary	212 (79.7)	54 (20.3)		
Secondary/Post-Secondary	748 (84.7)	135 (15.3)		
Religion				
Muslim	899 (83.5)	177 (16.5)	1.94	0.16
Christian	220 (80.0)	55 (20.0)		
Parity				
<4	707 (90.3)	76 (9.7)	72.9	<0.001
≥4	412 (72.5)	156 (27.5)		
Last pregnancy outcome				
Normal	1083 (82.8)	225 (17.2)	0.03	0.88
Complicated	36 (83.7)	7 (16.3)		
Last child birth (years)				
≤ 1	861 (85.3)	148 (14.7)	17.6	<0.001
>1	258 (75.4)	84 (24.6)		
Type of contraceptives				
Short acting reversible	659 (84.5)	121 (15.5)	3.57	0.059
Long acting	460 (80.6)	111 (19.4)		
Source of FP information				
Clinic personnel	905 (82.1)	197 (17.9)	2.08	0.149
Others	214 (85.9)	35 (14.1)		

Table 3: Multivariate logistic regression for predictors of no desire for child spacing among the clients

Variables	Crude OR[95%CI]	p value	Adjusted OR[95%CI]	p value
Age group (years)				
15-24	1 [Ref]		1 [Ref]	
25-34	1.55[1.05-2.28]	0.027	0.99[0.64-1.53]	0.96
≥ 35	7.74[5.09-11.79]	<0.001	3.72[2.21-6.63]	**<0.001**
Level of Education				
No education	1 [Ref]		1 [Ref]	
Primary	0.94 [0.6-1.48]	0.79	1.12[0.69-1.83]	0.64
Secondary/Post-Secondary	0.67 [0.45-0.98]	0.04	1.05[0.69-1.61]	0.82
Religion				
Muslim	1[Ref]		1 [Ref]	
Christian	1.26 [0.91-1.78]	0.16	1.37 [0.94-2.0]	0.1
Parity				
<4	1[Ref]		1[Ref]	
≥4	3.52 [2.61-4.75]	<0.001	2.35[1.6-3.46]	**<0.001**
Last child birth (years)				
≤ 1	1[Ref]		1[Ref]	
>1	1.89[1.4-2.56]	<0.001	1.40[0.99-1.97]	0.05
Type of contraceptives used				
Short acting reversible	1[Ref]		1 [Ref]	
Long acting reversible	1.31[0.98-1.74]	0.06	1.40 (1.02-1.91]	0.04
Source of FP information				
Clinic personnel	1[Ref]		1 [Ref]	
Mass media	0.59[0.27-1.33]	.21	0.67[0.29-1.54]	0.35
Community outreach	0.77[0.45-1.32]	0.35	0.58 [0.34-1.03]	0.06
Friends/relatives	0.86[0.44-1.66]	0.65	0.69 [0.33-1.40]	0.30

This study also showed that family planning information was received more from clinic personnel in the facilities compared to other sources such as community outreaches, mass media and from family and friends. This shows the influence of health care providers in providing quality information with capabilities to encourage positive behavioral attitudes towards utilization of FP services. Community outreaches that targets WRAG and their spouses can also encourage spousal FP communication and increase spousal consent which is very crucial to the utilization of the FP services, since the male partners still dominate in taking crucial reproductive health decisions in this patriarchal setting.[35-36] Creating demand for the FP services through information communication technology has also been reported by the Nigerian Urban Reproductive Health Initiative (NURHI) project in Nigeria.[37]

This study findings are limited in terms of overall generalizations since it is not all the WRAGs in the community who accessed FP services at this facility. We did not also know about the FP preferences of those whose records were missing during the period of the study. Despite these limitations, we believe that our data provides useful information for the utilization of FP services in the LGA and will also inform policy decisions by the relevant FP stakeholders in Kaduna State.

In conclusion, varied, specific and demand generating health programs with targeted FP messages that are sensitive to the different socio- demographic dimensions of WRAGs in this community are recommended. For instance, child spacing FP messages could be targeted at young, less educated women with less than four living children while child limiting messages could be targeted at the educated, women with more than four living children and the older women. More emphasis should be placed on community outreaches and use of the electronic media to increase the reach of FP information especially for the grand multi parous women. Incentivized support for the clinic personnel as agents of FP social marketing is also crucial to sustaining the gains already made by the utilization of these services by these community women.

Competing interest: The authors declare that there is no competing interest.

Authors' contribution: AO is the principal investigator for the study; he contributed to the study design, data collection, and analysis as well as drafted the initial and revised manuscripts. BA contributed to the data analysis and BA, AGN and KMA made critical inputs into the revision and finalization of the manuscript. All authors read and approved the final manuscript.

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