Original Article

Contraceptive Use and Fertility Control in Rural and Urban Communities of Lagos Nigeria

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Abstract

Background: It is predicted that the population of sub-Saharan Africa will be thrice its size by the end of the 21st century. Our study compared patterns, incentives and disincentives for the uptake of contraceptives in rural and urban communities of Lagos, Nigeria. **Materials and Methods:** This is a population-based cross-sectional study on 1445 women of reproductive ages 15–49 years using a cluster sampling technique and a pre-tested, interviewer-administered electronic questionnaire in 2020. Data were analysed using the Statistical Package for the Social Sciences (SPSS) software version 26.0 and ethical approval was obtained for the study. **Results:** About 32.4% of the respondents were rural dwellers and 67.6% were urban residents. The overall mean age was 31.7 ± 7.8 years. In terms of pattern, slightly over half (53.3%) of all respondents had ever used family planning (FP), including modern contraceptives and slightly less than a third (30.8%) currently use FP methods in both rural and urban communities, respectively. Predominant disincentives for non-use of FP include a desire to retain fertility, lack of further need, unbearable side effects and lack of spousal support. The odds of being an urban dweller currently using a method of contraceptive method is 4.169 times higher for earners above ₦60,000, which is twice the minimum wage compared to those without income (adjusted odd's ratio: 4.169, 95% confidence interval: 1.395–12.462). **Conclusion:** Sustained effort is required to improve contraceptive uptake, FP service delivery and demand satisfaction for modern contraceptives to enable the achievement of demographic dividends and gains.

Keywords: Communities, contraceptives, family planning, rural, urban

INTRODUCTION

There are several global concerted efforts to expand contraceptive information and services including the sustainable development goals, which seek to assure global access to sexual and reproductive healthcare services, including family planning (FP) information and education by 2030.[1] Unfortunately, rapid population growth and suboptimal FP coverage are huge public health problems in low- and middle-income countries (LMICs), particularly in sub-Saharan Africa.[2] Currently, it is predicted that the population of sub-Saharan Africa will be twice and thrice its current size in 50 years and by the end of the 21st century, respectively.[3] Consequent upon this and the socio-economic inequalities inherent in sub-Saharan Africa, population problems may have been worsened by the coronavirus disease 2019 (COVID-19) pandemic which was expected to increase unmet need for FP in LMICs.[1] This may be more so, due to movement restrictions during the early phase of the pandemic when the world was grappling with the evolving science and control of COVID-19.[4]

In Nigeria, contraceptive use and fertility control were deemed suboptimal before the pandemic. For example, according to the 2018 Nigeria Demographic Health Survey (NDHS), Nigeria has a total fertility rate of 5.3% and unmet need for FP services of 19.0%.[5] In addition, despite the transformative investment potential of FP services, the benefits of population control and

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several policy steps to increase the uptake of FP services in the country, contraceptive prevalence rate (CPR) has persistently remained inadequate at 17% for any method and 12% for modern contraceptive methods (modern CPR [mCPR]) among currently married women.[5-7] Furthermore, Nigeria witnessed a minimal 5% increase in demand for contraception, and a 3% increase in the demand met by modern methods between 2013 and 2018.[5] Low uptake of modern contraceptive methods is one of the reasons Nigeria is associated with very high fertility rates.[8] This has resulted in unplanned and unintended pregnancies likely contributing to unacceptable maternal mortality rates and other negative health outcomes.[9]

Child spacing and fewer births are proven advantages of modern contraceptive use beneficial to mother, child and families in general, as it provides sufficient time for recovery from last pregnancy-delivery experiences.[10] In addition, child spacing is especially important in rural communities where maternal and child health outcomes are often poor due to health systems challenges. Countries with high maternal and child mortality rates can potentially prevent about 10% and 32% of child and maternal deaths, respectively through the uptake of proven FP methods.[7] Previous research has established rural-urban disparities in demand for, access to and uptake of contraceptives in Nigeria.[5,11,12] Even though there are projections that the current trend of modern contraceptive use may increase over time, the rate of uptake and market penetration remain slow.[1] As the most populous country in Africa, with almost half of its people resident in rural communities,[5] population control in Nigeria through improved uptake of modern contraceptives could contribute to reductions in high fertility levels with serious implications for women's health, family, societal and socio-economic well-being as part of demographic dividends. Moreover, an indirect association between contraception and maternal health has been observed through the influence of fertility decline and reduction in maternal mortality ratio.[13,14]

A rural-urban disaggregation on uptake of contraceptives could provide a clearer understanding on possible contextual factors influencing uptake in the various communities of Lagos. Such evidence is useful in assessing the responsiveness of reproductive health services in controlling fertility and a possible complementary effort in reducing maternal mortality. Furthermore, data generated are valuable for micro-planning and scalable programmatic interventions to strengthen uptake of FP services which can be replicated in other states of the Federation. Our study compared FP and modern contraceptive patterns, incentives and disincentives for the uptake of modern contraceptives in the rural and urban communities of Lagos, which is the commercial capital and one of the most populous cities in Nigeria and Africa.

Materials and Methods

Study design
This is a descriptive population-based cross-sectional study which is part of a larger survey on contraceptive use and associated factors in Lagos State.

Study location
There are 20 Local Government Areas (LGAs) in Lagos State (16 urban and 4 rural). The study was conducted in four urban and two rural LGAs in Lagos State Nigeria, using a multistage sampling technique. The state is located in the southwest geopolitical region of the country and had a projected population of over 12 million for the year 2018 (based on estimates from the 2006 National census figures), with an annual growth rate of 3.2% in 2017.[15] Lagos State is considered the commercial and economic capital of the country often described as a melting pot of various Nigerian ethnic groups and other nationalities.

Study population
A total of 1445 consenting women of reproductive ages 15–49 years resident in selected rural and urban LGAs who met the eligibility criteria of being within 15–49 years of age and residing in the selected communities for at least 1 year before the survey were recruited for participation.

Sampling
A multistage sampling technique was used. LGAs and communities were selected using simple random sampling technique while communities were divided into clusters as sampling units. Households which met the eligibility criteria were randomly selected within the selected clusters.

A minimum sample size for the comparison of FP uptake in rural and urban communities was determined using the following formula for the comparison of two proportions.[16]

Sample size determination

$$n = \frac{(Z\alpha + Z\beta)^2 \left([P_1(1 - P_1)] + [P_2(1 - P_2)]\right)}{(P_1 - P_2)^2}$$

n = minimum sample size required for each group

$Z\alpha$ = 1.96, the critical ratio or standard normal deviate at significant level of 5%.

$Z\beta$ = 0.84, the critical ratio or standard normal deviate at desired power of 80%.

P_1 = the estimated prevalence of women using a FP method in a rural community of Nigeria was 17.2% (0.172).[17]

P_2 = the estimated prevalence of women using a FP method in an urban community of Nigeria was 47.3% (0.473).[18]

P_1-P_2 = the arithmetic difference in the uptake of FP in the rural and urban communities in Nigeria

$$n = \frac{(1.96 + 0.84)^2 \ (0.172[1 - 0.172] + [0.473(1 - 0.473)])}{(0.172 - 0.473)^2}$$

$$n = \frac{7.84(0.391)}{0.091}$$

n = 33.71 ≈ 34

Therefore, 34 respondents was the minimum per community required for the study.

This was doubled to 68 per community to improve the validity of the study.

A total of 68 respondents was recruited from each of the 6 LGAs (two rural and four urban).

The total number of respondents for the study was calculated thus: 68 × 6 = 408

$N = 408$

The minimum calculated sample size was 408.

In using a cluster sampling technique, a design effect of 3 was used as the correction factor to adjust the sample size.

3 × 408 = 1224 as minimum sample size across all 6 LGAs to strengthen the validity of the study.

During fielding, an oversampling was done resulting in a total of 1445 respondents.

Data collection

A pre-tested, semi-structured, interviewer-administered electronic questionnaire was used for quantitative data collection by trained research assistants over a 6-week period between August and September 2020. The study instrument sought information on socio-demographic and socio-economic background of respondents, fertility trends in terms of the current and desired number of children, previous and current use of modern contraceptives, decision-making authority on family size, previous experience of childbirth health challenges and reasons for non-use of contraceptives where applicable. The study outcome was the current use of modern contraceptives. The explanatory variables were selected socio-economic and demographic characteristics which include education, family income benchmarked at ₦30,000 being the monthly minimum wage in the country (https:// tradingeconomics.com/nigeria/minimum-wages), marital status and age.

Data analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS) software version 26.0. (IBM Corp, Armonk, NY) and presented as means, frequencies and percentages in tables and charts as appropriate. The Chi-square test and binomial logistics regression were used for exploring the associations between relevant variables in bivariate and multivariate analyses within 95% confidence interval (CI) ($P < 0.05$).

Ethical considerations

Ethical approval to conduct the study was sought from the Lagos State University Teaching Hospital's Health Research and Ethics Committee (LREC/06/10/1326). Moreover, social approval was also obtained from the agencies and ministries with oversight functions. All participants were provided oral explanations about the study, measures of confidentiality, information regarding the supervising ethics board and the right to participate or not, including the right to leave the study at any point.

RESULTS

A total of 1445 women were grouped as rural or urban residents according to their LGAs. About 32.4% of the total number of respondents were rural dwellers and 67.6% were urban residents.

In Table 1, the overall mean age of respondents was 31.7 ± 7.8 years. About three quarters (77.1%) of all the respondents were between 20 and 40 years of age. There was a statistically significant difference on educational attainment between respondents in the rural and urban settings ($P < 0.001$). More women had completed secondary education in the rural LGAs (61.8%) versus 50.1% in the urban LGA while a higher proportion (39.3%) had completed tertiary education in the urban settings against 22.8% of the rural dwellers. Even though generally, most (74.3%) of the respondents were in monogamous relationships, there was no statistically significant difference between those in rural and urban locations ($P = 0.365$). More women were married with a significantly higher proportion (45.8%) who had a family income <₦30,000 in the rural areas as compared to 28.7% in the urban areas ($P < 0.001$). There were more professionals (12.7%) and skilled workers (38.5%) in the urban LGAs and more unskilled workers (34.4%) in the rural LGAs. In general, there was a statistically significant difference between respondents in the rural and urban settings with respect to educational attainment, religion, income and occupation ($P < 0.05$). On the other hand, no significant difference was observed in age group, family type and marital status ($P > 0.05$).

The majority (41.2%) of the rural dwellers reported currently having significantly more children (3–4) compared to their urban counterparts who mostly (39.0%) had 1–2 children ($P < 0.001$). No statistically significant difference was observed for the desired number of additional children wanted by respondents in both settings despite a higher desire for more children by respondents in the rural LGAs. The respondents in urban settings (71.8%) reported more joint decisions with their spouses on family size compared to the rural-dwelling women (61.3%, $P < 0.001$). Overall, the predominant reasons for non-use of FP methods and desiring more children include financial status (63.5%), preference for a particular child gender (59.0%) and polygamy (46.2%). Significantly more women in the rural LGAs (20.3%) reported pregnancy or childbirth-related challenges [Table 2].

In Table 3a, slightly over half and about a third of respondents had ever and currently use modern contraceptives, respectively. There were no significant differences between rural and urban respondents who had ever used and currently use FP methods as at the time of the study, although current utilisation was slightly higher among urban residents (31.9%) compared with the rural dwellers (28.8%). Slightly more rural dwellers (56.2%) had ever used FP methods against 51.8% of urban dwellers. There was no statistically significant difference reported by the respondents on waiting time which

Table 1: Sociodemographic details

	Total (*n*=1445), *n* (%)	Rural (*n*=468; 32.4), *n* (%)	Urban (*n*=977; 67.6), *n* (%)	χ^2 (*P*)
Age				
<20	75 (5.2)	34 (7.3)	41 (4.2)	6.758 (0.080)
20-29	530 (36.7)	162 (34.6)	368 (37.7)	
30-39	584 (40.4)	192 (41.0)	392 (40.1)	
40-49	256 (17.7)	80 (17.1)	176 (18.0)	
Mean age (years)	31.7±7.8	31.4±7.9	31.8±7.8	153.221[a] (<0.001)
Education				
No formal	35 (2.4)	12 (2.6)	23 (2.4)	39.929 (<0.001)
Primary	141 (9.8)	60 (12.8)	81 (8.3)	
Secondary	778 (53.8)	289 (61.8)	489 (50.1)	
Tertiary	491 (34.0)	107 (22.8)	384 (39.3)	
Religion				
Christianity	714 (49.4)	277 (59.2)	437 (44.7)	27.949 (<0.001)
Islam	632 (43.7)	167 (35.7)	465 (47.6)	
Roman catholic	88 (6.1)	23 (4.9)	65 (6.7)	
Others	11 (0.8)	1 (.2)	10 (1.0)	
Family type				
Single parent	216 (14.9)	69 (14.7)	147 (15.0)	3.177 (0.365)
Monogamous	1074 (74.3)	342 (73.1)	732 (74.9)	
Polygamous	120 (8.3)	41 (8.8)	79 (8.1)	
Unknown	35 (2.4)	16 (3.4)	19 (1.9)	
Marital status				
Married	1061 (73.4)	333 (71.2)	728 (74.5)	3.724 (0.293)
Single	298 (20.6)	108 (23.1)	190 (19.4)	
Separated/divorced	60 (4.2)	21 (4.5)	39 (4.0)	
Widowed	26 (1.8)	6 (1.3)	20 (2.0)	
Income				
None	301 (20.8)	97 (20.7)	204 (20.9)	69.471 (<0.001)
<30,000	507 (35.1)	227 (48.5)	280 (28.7)	
30,000-60,000	505 (34.9)	126 (26.9)	379 (38.8)	
>60,000	132 (9.1)	18 (3.8)	114 (11.7)	
Occupation				
Housewife	87 (6.0)	35 (7.5)	52 (5.3)	11.909 (0.036)
Professional	166 (11.5)	42 (9.0)	124 (12.7)	
Skilled worker	533 (36.9)	157 (33.5)	376 (38.5)	
Student/others	181 (12.5)	60 (12.8)	121 (12.4)	
Unemployed	36 (2.5)	13 (2.8)	23 (2.4)	
Unskilled worker	442 (30.6)	161 (34.4)	281 (28.8)	

[a]*t* value (Student's *t*-test). SD: Standard deviation

was mostly short (<20 min) or average (21–59 min) for urban and rural dwellers.

Table 3b shows that a slightly higher proportion of women who had ever used (28.5%) and currently use (19.6%) traditional methods were urban dwellers as compared to rural dwellers (22.4% and 14.6%) who ever and currently use traditional methods. However, more (8.8%) rural respondents had ever used lactational amenorrhoea, while more of those in the urban LGAs had used safe period (9.0%) and withdrawal method (26.4%) in the past. The most commonly ever used modern contraceptives by the rural dwellers include condoms (43.0%), injectables (31.1%) and oral pills (30.7%) as compared to the urban dwellers who had mostly ever used condoms (39.5%), injectables (31.0%) and implants (23.6%).

Currently (as at the time of the study), the most popular modern contraceptives being used by the rural respondents include implants (27.4%), condoms (23.9%) and injectables (19.7%) as compared to the urban women who mostly use condoms (28, 7%), implants (27.9%) and injectables (22.9%).

The most common reason given for non-use across board was the desire to retain fertility (27.9% rural and 38.1% urban). Other disincentives for the use of FP include lack of further need, unbearable side effects and lack of spousal support. Inadequate knowledge was slightly higher among rural dwellers (9%), while <2% of urban dwellers related non-use with a history of terminated pregnancy [Table 4].

In Table 5, even though most of the respondents who had ever used or currently use some form of FP method (traditional

Table 2: Comparison of fertility patterns and experiences

	Total (*n*=1445), *n* (%)	Rural (*n*=468), *n* (%)	Urban (*n*=977), *n* (%)	χ^2 (*P*)
Current number of children				
None	291 (20.0)	91 (19.4)	200 (20.5)	22.132 (<0.001)
1-2	526 (36.4)	145 (31.0)	381 (39.0)	
3-4	516 (35.7)	193 (41.2)	323 (33.1)	
5 or more	107 (7.4)	34 (7.3)	73 (7.5)	
Unspecified	5 (0.3)	5 (1.1)	0	
Desired number of additional children				
None	410 (28.4)	125 (26.7)	285 (29.2)	6.417 (0.170)
1-2	413 (28.6)	120 (25.6)	293 (30.0)	
3-4	478 (33.1)	169 (36.1)	309 (31.6)	
5 or more	131 (9.1)	49 (10.5)	82 (8.4)	
Unspecified	13 (0.9)	5 (1.1)	8 (0.8)	
Reasons for the desire for more children*				
Financial status	917 (63.5)	315 (67.3)	602 (61.6)	
Gender preference	852 (59.0)	251 (53.6)	601 (61.5)	
Polygamy	668 (46.2)	173 (37.0)	495 (50.7)	
Religion/anti-abortion law	486 (33.7)	87 (18.6)	399 (40.9)	
Younger age at marriage	299 (20.7)	45 (9.6)	254 (26.0)	
Cost/unavailability of FP	298 (20.6)	15 (3.2)	283 (28.9)	
More children will aid family business	261 (18.1)	29 (6.2)	232 (23.7)	
Health status	242 (16.8)	13 (2.8)	229 (23.4)	
Others	207 (14.3)	93 (19.9)	114 (11.7)	
Increasing age	97 (6.7)	12 (2.6)	85 (8.7)	
Decision maker on family size				
My spouse and 1	988 (68.4)	287 (61.3)	701 (71.8)	45.777 (<0.001)
I alone	245 (17)	105 (22.4)	140 (14.3)	
My spouse	109 (7.5)	37 (7.9)	72 (7.4)	
Others	103 (7.1)	39 (8.3)	64 (6.6)	

*Multiple options permitted. FP: Family planning

Table 3a: Family planning use in rural and urban areas

	Total, *n* (%)	Rural, *n* (%)	Urban, *n* (%)	χ^2 (*P*)
Ever used FP methods[a] (*n*=1159)				
Yes	618 (53.3)	228 (56.2)	390 (51.8)	2.019 (0.155)
No	541 (46.7)	178 (43.8)	363 (48.2)	
Current use FP methods[a] (*n*=1159)				
Yes	357 (30.8)	117 (28.8)	240 (31.9)	1.155 (0.283)
No	802 (69.2)	289 (71.2)	513 (68.1)	
Waiting time for FP services[b] (*n*=357)				
Short (≤20 min)	161 (45.1)	51 (43.6)	110 (45.8)	3.562 (0.313)
Average (21-59 min)	142 (39.8)	47 (40.2)	95 (39.6)	
Long (>60 min)	34 (9.5)	15 (12.8)	19 (7.9)	
Unspecified	20 (5.6)	4 (3.4)	16 (6.7)	

[a]Based on those who have ever heard of family planning, [b]Based on those who currently use a family planning method. FP: Family planning

or modern) were between ages 30 and 39 years, there was no statistically significant difference between those in rural or urban locations regarding usage (*P* > 0.05). In terms of marital status, significantly more married respondents (92.5%) were currently using some form of FP method in the urban communities as compared to 82.1% of rural dwellers (*P* < 0.01). Furthermore, compared to those with no income, more respondents earning some income had ever and currently use FP methods (*P* < 0.05). The higher

the educational level the more respondents had ever used FP methods. This difference was statistically significant between the urban and rural respondents (*P* < 0.01).

A single woman experiences a reduction of 86.2% in the odds of being an urban dweller who currently uses FP compared to a married woman (adjusted odds ratio [AOR]: 0.138, 95% CI: 0.047–0.402). Furthermore, the odds of being an urban dweller currently using FP methods is 4.169 higher for those

Table 3b: Family planning methods used in rural and urban areas

Types of (FP) method used	Ever used rural (n=228), n (%)*	Urban (n=390), n (%)*	Current use rural (n=117), n (%)*	Urban (n=240), n (%)*
Traditional FP methods	51 (22.4)	111 (28.5)	17 (14.6)	47 (19.6)
Safe period/cycle beads/rhythm method	18 (7.9)	35 (9.0)	8 (6.9)	15 (6.3)
LAM	20 (8.8)	8 (2.1)	3 (2.6)	0
Withdrawal	33 (14.5)	103 (26.4)	10 (8.5)	41 (17.1)
Modern FP methods (modern contraceptives)	215 (94.3)	364 (93.4)	107 (91.5)	212 (88.3)
Implants	42 (18.4)	92 (23.6)	32 (27.4)	67 (27.9)
IUCD	13 (5.7)	26 (6.7)	9 (7.7)	15 (6.3)
Injectables	71 (31.1)	121 (31.0)	23 (19.7)	55 (22.9)
Oral pills	70 (30.7)	80 (20.5)	22 (18.8)	21 (8.8)
Emergency contraceptives	25 (11)	22 (5.6)	3 (2.6)	1 (0.4)
Condoms	98 (43.0)	154 (39.5)	28 (23.9)	69 (28.7)
Others	12 (5.3)	14 (3.6)	5 (4.3)	13 (5.4)

*Multiple options permitted, others: sterilisation, unspecified modern and traditional methods. LAM: Lactational amenorrhoea. IUCD: Intrauterine contraceptive device, FP: Family planning

Table 4: Reasons for non-use of contraceptives rural and urban areas

	Rural, n (%)	Urban, n (%)
Desire to retain fertility	80 (27.9)	195 (38.1)
Not needed anymore	85 (29.4)	102 (19.9)
Unbearable side effects	54 (18.7)	87 (17.0)
Don't like the idea	53 (18.3)	86 (16.8)
No spousal support	42 (14.5)	62 (12.1)
Problems with the method	23 (8.0)	45 (8.8)
Inadequate knowledge	26 (9.0)	21 (4.1)
History of terminated pregnancy	2 (0.7)	8 (1.6)

Multiple response permitted means the numbers will not add up in a total because participants are able to answer in the affirmative to more than one option

whose earning is above ₦60,000 (twice the minimum wage) compared to those without an income. [AOR: 4.169, 95% CI: 1.395–12.462; Table 6].

DISCUSSION

Our study provides evidence on the current use of modern contraceptives, traditional FP techniques, reasons for non-use and prevalent methods of modern contraceptives among women of rural and urban communities in Lagos. According to Fotso *et al*., family size and desire for more children in urban Nigeria have often been lower than what is obtainable in rural parts of the country.[19] In this study, the lack of desire for additional children was slightly higher (29.2%) among urban dwellers. This is not surprising considering the changing socio-economic realities resulting in higher cost of living and raising a family, especially in urban settings. In addition to socio-economic reasons, preference for children of a particular gender was the most prevalent reason for desiring more children, and this was surprisingly higher (61.5%) among urban dwellers compared to respondents in rural LGAs. Although we did not try to ascertain respondents' preferred choice in terms of child's sex, the patriarchal nature of the typical African society where the male child is more celebrated than the girl child[20-22] strengthens our speculation that the desire for male children is a possible reason for the inclination towards having more children. A similar finding was reported in a South-Eastern Nigeria study which reported that over 60% of mothers preferred to have male children and about half of the respondents would only stop trying to have a child of their preferred gender after they must have had four children.[22] This could have implications for sustainable fertility levels in the society.

We further observed that a few women in the rural settings did not disclose the current number of children they have. This may not be unconnected to some myths surrounding the disclosure of one's current family size in our study region[23] where it is sometimes believed that children are gifts, therefore, it may not be necessary to plan pregnancies. Joint decision-making on family size was higher (over 70%) among urban than rural residents [Table 2]. Interestingly, a similar study reported that 68.6% of women in a rural area of Nigeria alluded to the fact that family decisions on reproductive health matters should be the responsibility of the men.[24] The decision-making process is important in planning families and promoting uptake of valuable health interventions such as modern contraceptives. While we are unsure whether these women transitioned to using modern methods, we speculate that a decline in use from ever to current usage of traditional methods by women in both locality settings may be consequent on probably finding traditional methods to be less potent in pregnancy prevention.[25] Furthermore, considering that this study was fielded in the early phase of the ongoing COVID-19 pandemic, women may have had challenges with access to reproductive health services on account of movement limitations before the ease of restrictions.

Implants were identified as the most common currently used modern contraceptive method. Although associated with some side effects such as disruption of menstrual cycle, implants are very effective, safe and offer long-lasting protective action in preventing unwanted pregnancies obviating the need for

Table 5: Bivariate analysis of factors associated with the use of family planning methods

	Ever used			Current use		
	Rural *n*=228), *n* (%)	Urban (*n*=390), *n* (%)	χ^2 (*P*)	Rural (*n*=117), *n* (%)	Urban (*n*=240), *n* (%)	χ^2 (*P*)
Age						
<20	0	1 (0.3)	4.153 (0.245)	0	1 (0.4)	1.872 (0.599)
20-29	64 (28.1)	86 (22.1)		30 (25.6)	51 (21.3)	
30-39	107 (46.9)	210 (53.8)		62 (53.0)	142 (59.2)	
40-49	57 (25.0)	93 (23.8)		25 (21.4)	46 (19.2)	
Marital status						
Married	191 (83.8)	345 (88.5)	2.776 (0.428)	96 (82.1)	222 (92.5)	15.447 (0.001)
Single	17 (7.5)	20 (5.1)		14 (12.0)	5 (2.1)	
Separated/divorced	15 (6.6)	19 (4.9)		6 (5.1)	11 (4.6)	
Widowed	5 (2.2)	6 (1.5)		1 (0.9)	2 (0.8)	
Income						
None	27 (11.8)	40 (10.3)	26.517 (<0.001)	16 (13.7)	24 (10.0)	10.219 (0.017)
<30,000	112 (49.1)	124 (31.8)		53 (45.3)	82 (34.2)	
30,000-60,000	77 (33.8)	168 (43.1)		42 (35.9)	99 (41.3)	
>60,0000	12 (5.3)	58 (14.9)		6 (5.1)	35 (14.6)	
Education						
None	6 (2.6)	3 (0.8)	16.140 (0.001)	2 (1.7)	1 (0.4)	5.843 (0.119)
Primary	34 (14.9)	32 (8.2) 1		9 (7.7)	16 (6.7)	
Secondary	21 (53.1)	191 (49.0)		71 (60.7)	123 (51.2)	
Tertiary	67 (29.4)	164 (42.1)		35 (29.9)	100 (41.7)	

Table 6: Multivariate analysis of factors associated with the current use of family planning methods

	OR	95% CI		*P*
		Lower	Higher	
Marital status				
Married				0.004
Single	0.138	0.047	0.402	<0.001
Separated/divorced	0.885	0.304	2.580	0.824
Widowed	0.817	0.067	10.045	0.875
Income				
None				0.013
<30,000	1.104	0.526	2.319	0.794
30,000-60,000	1.875	0.8781	4.002	0.104
>60,000	4.169	1.395	12.462	0.011

CI: Confidence interval, OR: Odd's ratio

frequent follow-up visits.[26] Even though we did not probe on reasons for the choice of contraceptive methods used by respondents, it is worrisome that more urban dwellers use traditional methods such as withdrawal method. The risk of contraceptive failure from traditional methods such as withdrawal method is known to be higher than modern contraceptives except this is combined with other forms of contraception.[27] In general, condoms are one of the most commonly used contraceptives,[8,28] and so far, they function in a dual role of preventing pregnancy and sexually transmitted infections (STIs).[1,29] Even though condoms are considerably popular compared to other modern contraceptive methods, especially amongst urban dwellers, we found that less than

a third of respondents currently use condoms. This finding has implications in the prevention of STIs including human immunodeficiency virus.

Waiting time for FP services was mostly good as most women reported short (45.1%) to average (39.8%) waiting times across the rural and urban LGAs. Delay in service administration may discourage the uptake of contraceptives which could worsen current inadequate reproductive health indicator estimates. A few factors were responsible for the downward trend observed among those who had ever used and those who currently use some form of contraception in all participants regardless of location. For example, a desire to retain fertility was the most predominant reason given for the non-use of modern contraceptives by the urban respondents, corroborating findings from a study conducted in a semi-urban community in Nigeria which reported intention to have more children was the primary reason for non-use of FP.[30] Another prominent reason was the experience of unbearable side effects.

Inadequate knowledge about contraceptives was seen in the residents of rural areas, which is an indication to upscale health promotion and education on contraceptive use among rural-dwelling women. By making a wide range of FP options available, couples are empowered to make decisions on the methods best suited for their long-term or immediate needs.[25] We are cognisant that interaction with reproductive health facilities such as FP clinics offers a chance to make every experience educational. We also observed that failure to prevent pregnancy was one of the reported problems with some FP methods leading to inconsistent or non-use. Literature has

shown that about 30% of unintended pregnancies occurring on a yearly basis are due to contraceptive failure among women using any FP method.[31]

Results from the 2018 NDHS show that the CPR among married women was highest for those in their mid and late 30s[5] Similarly, in this research and our initially published results,[32] we found CPR to be higher for women in their 20s and 30s. Further, increasing household income was more broadly associated with the use of FP methods in the urban LGAs which are typically characterised by high living expenses.

Comparing the results of multivariate analysis in this study, unlike reports from other surveys,[5,33] there are indications from our study that married women, especially in urban settings are more likely to use contraceptive methods than those who are not married. A study conducted in Ethiopia showed a similar pattern, as the unmarried women were 91% less likely to utilise contraceptive methods, compared to their married counterparts.[34] Given the suboptimal trend observed on uptake of modern contraceptives and traditional FP techniques, sustained effort is required to bend the curve in the direction of the transformative investment of FP and contraceptive.

A slightly higher current use of modern contraceptives was observed among the urban dwellers (31.9%) as compared to the rural dwellers (28.8%) and the overall figure for all respondents (30.8%). These findings are higher than the national modern mCPR target of at least 27% by 2030.[35]

Even though we attempted to assess satisfaction with FP services and its effect on uptake using waiting time, we are cognisant that the cross-sectional design of the study is unable to generate evidence for the measurement and improvement of FP service delivery. Furthermore, actual reasons for discontinuation of the FP methods ever used could have provided information to guide strategic interventions for the uptake of FP. However, our findings have generated useful data estimates that could guide research to practice gaps in population control for LMICs and priority commercial population settings such as Lagos characterised by rural and urban communities.

Conclusion

In conclusion, sustained effort is required to improve contraceptive uptake, FP service delivery and demand satisfaction for modern contraceptives to enable the achievement of demographic dividends and gains. Furthermore, to sustain increased uptake of contraceptives, there is need to align with both national and international goals by financing FP programs, strengthening supply chains, reducing unmet need for contraceptives and increasing FP demand satisfaction with modern methods. This could enable couples not only to achieve reproductive intentions but also decrease the risk of unwanted and unplanned pregnancies.

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Conflicts of interest
There are no conflicts of interest.

References

1. United Nations Department of Economic and Social Affairs, Population Division. World Family Planning 2020 Highlights: Accelerating Action to Ensure Universal Access to Family Planning; 2020.
2. Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: The unfinished agenda. Lancet 2006;368:1810-27.
3. de la Croix D, Gobbi PE. Population homeostasis in sub-Saharan Africa. Econ Hum Biol 2022;45:101102.
4. Michael TO, Agbana RD, Ojo TF, Kukoyi OB, Ekpenyong AS, Ukwandu D. COVID-19 pandemic and unmet need for family planning in Nigeria. Pan Afr Med J 2021;40:186.
5. National Population Commission (NPC) [Nigeria] and ICF. Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF; 2019.
6. Ononokpono DN, Odimegwu CO, Usoro NA. Contraceptive use in Nigeria: Does social context matter? Afr J Reprod Health 2020;24:133-42.
7. Nigeria FP2020 Commitment. Family Planning 2030; 2012. Available from: http://fp2030.org. [Last accessed on 2022 Feb 17].
8. Saheed U, Kalejaye O, Isola I, Oluwaniyi O, Ojogbede A, Adu A. Family planning practices among rural community women in Nigeria. J Exp Integr Med 2016;6:88.
9. Olonade O, Olawande TI, Alabi OJ, Imhonopi D. Maternal mortality and maternal health care in Nigeria: Implications for socio-economic development. Open Access Maced J Med Sci 2019;7:849-55.
10. Goliber TJ, Sanders R, Ross J, editors. Analyzing Family Planning Needs in Nigeria: Lessons for Repositioning Family Planning in sub-Saharan Africa. Washington, DC: Futures Group, Health Policy Initiative, Task Order 1. USAID; 2009.
11. Idowu A, Ukandu GC, Mattu J, Olawuyi D, Abiodun A, Adegboye P, *et al.* >Modern contraception: Uptake and correlates among women of reproductive age-group in a rural community of Osun State, Nigeria. Ethiop J Health Sci 2020;30:531-40.
12. Tunau K, Awosan KJ, Adamu H, Muhammad U, Hassan M, Nasir S, *et al*., editors. Comparative Assessment of Modern Contraceptives Knowledge and Utilization among Women in Urban and Rural Communities of Sokoto State, Nigeria. J Med Med Sci 2016;7:006-014. Available online http://www.interesjournals.org/JMMS. [Last accessed on 2022 Oct 05].
13. Jain AK. Measuring the effect of fertility decline on the maternal mortality ratio. Stud Fam Plann 2011;42:247-60.
14. Zureick-Brown S, Newby H, Chou D, Mizoguchi N, Say L, Suzuki E, *et al.* Understanding global trends in maternal mortality. Int Perspect Sex Reprod Health 2013;39:32-41.
15. Lagos Bureau of Statistics. Abstract of Local Government Statistics. Secretariat, Alausa, Ikeja: Lagos Bureau of Statistics; 2019.
16. Onwasigwe C. Principles and Methods of Epidemiology. Uwani Enugu: EL 'DEMAK Publishers; 2010. p. 173.
17. Etokidem AJ, Ndifon W, Etowa J, Asuquo EF. Family planning practices of rural community dwellers in cross River State, Nigeria. Niger J Clin Pract 2017;20:707-15.
18. Jagun OE. Family planning and contraceptive practices among parturient in a Cottage Hospital in South-West Nigeria contraceptive practices and determinants orient. J Med 2017;29:1-16. Available from: http://www.orientjom.com. [Last accessed on 2022 Nov 13].
19. Fotso J, Ajayi J, Idoko E, Speizer I, Fasiku D, Mberu B, *et al*. Family Planning and Reproductive Health in Urban Nigeria: Levels, Trends and Differentials; 2011.
20. Ademiluka SO. 'Hannah's prayer for a male child: Interpreting 1 Samuel 1:11 in the Nigerian context'. In die Skriflig 2021;55:a2719, 1-8.
21. Rossi P, Rouanet L. Gender preferences in Africa: A comparative analysis of fertility choices. World Dev 2015;72:326-45.
22. Inyang-Etoh E, Ekanem A. Child-sex preference and factors that influenced such choices among women in an obstetric population in Nigeria. OALib 2016;3:1-10.

23. Ibisomi L. Fertility transition in Nigeria: Exploring the role of desired number of children. Afr Popul Stud 2013;23:1-16. [Doi: 10.11564/23-2-321].

24. Ugal D, Obi P, Ugabi J. Gender-Based Decision Making and Family Size Preference Among Urban and Rural Dwellers of Obudu L.G.A of Cross River State. 2009. p. 1-17. Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1513976. [Last accessed on 2022 Nov 10].

25. Polis CB, Bradley SE, Bankole A, Onda T, Croft T, Singh S. Typical-use contraceptive failure rates in 43 countries with Demographic and Health Survey data: Summary of a detailed report. Contraception 2016;94:11-7.

26. Pam VC, Mutihir JT, Nyango DD, Shambe I, Egbodo CO, Karshima JA. Sociodemographic profiles and use-dynamics of Jadelle (levonorgestrel) implants in Jos, Nigeria. Niger Med J 2016;57:314-9.

27. Trussell J. Understanding contraceptive failure. Best Pract Res Clin Obstet Gynaecol 2009;23:199-209.

28. Beksinska M, Wong R, Smit J. Male and female condoms: Their key role in pregnancy and STI/HIV prevention. Best Pract Res Clin Obstet Gynaecol 2020;66:55-67.

29. Family Planning/Contraception Methods. World Health Organization; 2020. Available from: http://www.who.int. [Last accessed on 2020 Feb 06].

30. Idris SH, Sambo MN, Ibrahim MS. Barriers to utilisation of maternal health services in a semi-urban community in northern Nigeria: The clients' perspective. Niger Med J 2013;54:27-32.

31. Singh S, Darroch JE, Ashford LS. Adding It Up: The Costs and Benefits of Investing in Sexual and Reproductive Health 2014; 2014.

32. Wright KO, Wusu O, Akinyinka M, Adebayo B, Adepoju F, Bashir K, *et al.* Use of modern contraceptives in Lagos Nigeria during the COVID-19 pandemic. Health Care Women Int 2022;43:382-97.

33. Lowe M, Sagnia PIG, Awolaran O, Mongbo YAM. Sexual and reproductive health of adolescents and young people in the Gambia: a systematic review. Pan Afr Med J 2021;40:221. Published 2021 Dec 13.

34. Gebremedhin AY, Kebede Y, Gelagay AA, Habitu YA. Family planning use and its associated factors among women in the extended postpartum period in Addis Ababa, Ethiopia. Contracept Reprod Med 2018;3:1.

35. Federal Ministry of Health. Nigeria National Family Planning Blueprint. Abuja, Nigeria: Federal Ministry of Health; 202 0.