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Barriers to use of modern contraceptive among reproductive age women in rural communities in Delta State, Southern Nigeria

Rolle Remi Ahuru[1,2*] and Chimezie Igwegbe Nzoputam[2,3]

[1] Department of Economics, Faculty of Social Sciences, University of Benin, Benin City, Nigeria
[2] Centre of Excellence in Reproductive Health Innovation, University of Benin, Benin City, Nigeria
[3] Department of Community Health, School of Medicine, College of Medical Sciences, University of Benin, Benin City; Nigeria.

*Corresponding author: remirolle1986@yahoo.com

Abstract

Background: Low contraceptive use remains a public health challenge in Nigeria**.** The study aims to assess the coverage, barriers to usage and predictors of modern contraception among women of reproductive age in Ughelli North Local Government Area (LGA), Delta State, Nigeria.

Method: A community-based cross-sectional household survey was conducted in eight rural communities. Multi-stage sampling was used in selecting the respondents. Both descriptive and predictive analyses were conducted. Simple frequency and proportion was used to describe the characteristics of the women. Binary logistic regression was estimated to examine determinants of modern contraceptive use. We estimated both adjusted and unadjusted odd ratios. Multiple response analysis was undertaken to assess reasons for use and non-use of modern contraceptive.

Findings: The results revealed that 19.3% of the women were currently using modern contraceptive, while 31.8% once used and stopped. In order of hierarchy, the most commonly used types of contraceptives were injectable, oral pills and implants. The most commonly mentioned reason for the use of modern contraceptive were birth spacing and termination of childbearing. The fear of side effects and the need to continue childbearing were the motivations for discontinuing the use of modern contraceptive. The predictors of modern contraceptive use are secondary educational qualifications **(aOR**: 1.456, 95% CI: 0.45–4.71) and tertiary educational qualifications (**aoR**: 3.091, 95% CI: 0.93–10.24).

Conclusion: While education opportunities should be expanded for women in the area, intervention programmes with awareness creation that will educate the women and allay their fears on side effects of modern contraceptives use should be implemented.

Keywords: Contraceptive Use, Reproductive age, Delta State, Nigeria

Introduction

The Millennium Development Goals (MDGs) and its successor Sustainable Development Goals (SDGs) were articulated to encourage development by improving socioeconomic conditions among poor countries of the world. The SDGs consist of seventeen time-bound goals which range from poverty reduction to improvement in maternal health (1). In spite of every commitment, progress report shows that Nigeria may not achieve the SDGs **(1).** The use of contraceptive is central to achieving the SDGs, plan of action (POA) of International Conference on Population and Development (ICPD, 1994) and strongly connected to social and economic conditions of poorer nations (2). Agenda to achieve the SDGs must recognize the immense benefits of slowing down the growth rate of the population. One way of slowing down rapid population growth rate (RPG) through fertility regulation is to reduce the unmet need of family planning (3). Hence, attempts to achieve the SDGs and POA for Nigeria may be a mere illusion if research on fertility intentions and use of contraceptive is ignored, given Nigeria's high maternal mortality ratio which ranges between 545 and 608 per 100,000 live births, and under-five mortality rate of 120 per 1,000 live births (**4,5**). Recent estimates show that 54,000 unwanted pregnancies, 79, 000 maternal deaths, and 1.2 million child mortality will be averted with universal access to family planning services (**6-8**).

Population explosion remains one of the critical issues to be considered in Nigeria's development agenda, being the most populous black nation on earth **(4).** Current estimates put its population at 190,886 million people **(9).** Nigeria's population growth rate is put at 2.68 percent with a total fertility rate of 5.3 children per woman **(4).** Its rapid population growth rate is an impediment to achieving the SGDs, POA of ICPD **(10).** There are both health and economic burdens associated with RPG. At community level, RPG puts pressure on available social amenities thereby creating the need for increased natural, human and financial resources (6). At the household level, the high fertility rate may put pressure on resources in society, rising cost of living, ill-health, poor nutrition and limited educational opportunities, this ultimately can trap women in vicious circles of poverty (2, 5). RPG increases the risk of maternal and childhood morbidity and mortality **(6).**

In response to the RPG and its adverse effects on national progress, the Federal Government of Nigeria (FGN) approved the National Policy on Population for Development (NPPD) on February 4, 1988. Due to the low progress made and the challenges posed by HIV/AIDS, poverty and gender inequality, there was a need to review the 1988 NPPD and promulgate the National Policy on Population for Sustainable Development (NPPSD). The policy advanced that socioeconomic issues and environmental issues are irrevocably interrelated with population issues **(5).**

The overall goal of NPPSD is to ensure sustainable development; hence achieving a higher quality of life for the present generation must not compromise the quality of live for the future generation **(11).** The policy plan and programme implementation aims at the following goals: reduction of

national population growth rate, reduction of HIV/AIDS prevalent rate, reduction of gender gap in educational attainment, reduction of fertility rate through increase of contraceptive prevalent rate, achieve sustainable universal basic education, eliminate literacy by 2020, reduction of maternal and under-five mortality rate by 2015 (5).

Determinants of contraceptive use have been the subject matter of several Nigerian studies (**5, 12-16**).Studies has shown low use of contraceptive in Nigeria (*2*, **17-20**). Low level of education, spousal disapproval, infrequent sex, fear of side effects of modern contraceptive, misconception of the side effects of contraceptive and use of unproven methods are the reasons advanced for non-use of contraceptive in Nigeria (5, **12-20, 27)**. However, the significance of these factors has not been extensively researched for each specific area in Nigeria. Nigeria is a multilingual country with diverse culture and religious belief, which influence both the use of contraceptive, fertility and birth interval. In the light of the foregoing, predictors of contraceptive use in Nigeria are contextually bound, and as such extrapolation of findings of study from one setting may not hold for other settings (23). Against this backdrop, this study analyzed the utilization of modern contraceptive services amongst women of reproductive age in eight rural communities in Ughelli North Local Government Area (LGA) in Delta State, Southern Nigeria. It is the first study that examined predictors of modern contraceptive use among women in rural communities in Delta State, Southern Nigeria. The study yielded insight on determinants of modern contraceptive use among rural women in Delta State, which is pertinent in monitoring the progress made with respect to the NPPSD. Understanding the predictors of modern contraceptive use can assist in developing policies and designing interventions aimed at improving service utilization in study area. This will go a long way in reducing maternal mortality.

Methods

Study area

A community-based cross-sectional study was conducted in Ughelli North LGA in Delta State, Southern Nigeria. Ughelli North LGA lies between $9^0$45 N and 8 ^{0}43' E with a landmass of 818 square km. administratively, the LGA comprises eleven political wards with 105 communities embedded in the wards. The primary source of maternity care in the LGA is PHCs. Although, several private hospitals exist in the LGA that renders various degrees of maternal healthcare services, there are 30 public PHCs in the LGA, with 18 PHCs per 10,000 of the population (24). Health services by private and public health facilities complement PHCs in the area.

Study population

The population in this study was all women within the reproductive ages (15-49 years) living in the study area at the time of the survey.

Sample size determination

Adopting a 50% contraceptive prevalent rate due to absence of previous study that reported the prevalence of modern contraceptive rate in study area, an error margin of 5%, and 1.96 critical values for 95% confidence level and applying the Cochrane' (25) single proportion sample size formula, the sample size was estimated as 382. Utilizing a 5% non-response rate, the sample size was increased to 410. However, only 384 of the questionnaires had complete responses and were used for the analysis.

Sampling procedure

A multi-stage sampling procedure was used in selecting respondents for the study. In stage one four political wards were randomly selected out of the eleven political wards that made up the LGA. In stage two, simple balloting was used to select two communities from each of the political wards using simple random sampling techniques. In the final stage, household survey was conducted. A complete list of household was carried out for selecting eligible women for the study. The listing was done in such a way that households that have no eligible married women of reproductive age (15-49) were filtered out and the entire households with at least one qualified woman was enlisted in the survey. In each selected community, the centre was identified and while there, a pen was spun to identify the random walking direction. The team of data collectors began walking from the centre and visited consecutive households in the direction of the pen. In households where more than one qualified women were on the ground at the time of the survey, simple balloting was used to select one out of the lot. A proportional sampling technique was used to allocate the worked out sample size across the eight rural communities.

The eligibility criteria were women within the reproductive ages (15-49), either married or in consensual union, and those not desiring to have birth in the next two to three years. On the other hand, sterilized women, in fecund women, pregnant women and those desiring babies in the next two or three years were excluded. Women desiring babies were excluded from the study because it unlikely for them to use contraceptive (10, 17).

Data collection

Trained field research assistants were used to administer the questionnaire. Research assistants were graduates of Management and Social sciences discipline, and were conversant with the study area, and understood English, Pidgin English and Urhobo (mother tongue of residents of study area). Research assistants were given two days' training on the content of the questionnaire, ethics of the research and field conduct. The questions were fielded in English language, Pidgin English and Urhobo and the questionnaire was administered through face-to-face interviews. The interview took place in household settings, hence the privacies of respondents were ensured throughout. The household survey was carried out from January to June, 2019.

An interviewer–administered questionnaire was used in collecting the data. The questionnaire was formulated by the researchers based on the objective of the study, and was drawn from literature and previous studies. The interview guide developed for this study is provided as additional File 1 .The questionnaire comprises mainly close–ended questions, in which respondents were provided with response options. The questionnaire was structured into five sections. Section 1 and 2 respectively focused on respondent's characteristics and husband's information. Section 3 focused on use of contraceptive. Section 4 focused on availability and accessibility of contraceptive services and section 5 focused health education and awareness. The questionnaire comprises a total number of 28 structured questions. The questionnaire was pretested by administering it to eight women in a nearby

community. Adjustments were made based on the results of the pilot test by rephrasing questions which were hazy to respondents and completely removing those ones that seem irrelevant.

Ethical approval and consent to participate

Approval to conduct the study was obtained from the University of Benin Ethics Review Committee. Permission to undertake the survey was sought from the leaders of the various communities where the survey was conducted. Informed consent was secured from each study participant. Finally, participants' privacy and confidentiality was ensured throughout the time of data collection. Instructions were carefully explained to the respondents prior to the filling of the questionnaire assuring them that the information given would be confidential and be used only for the purposes of the study.

Outcome indicator

The outcome indicators used for the study is modern contraceptive use. Respondents who reported they use modern[1] contraceptives were coded 1, while otherwise coded 0.

Independent variables

Drawing on the model of maternal health service utilization and past studies on utilization of contraceptive, the effects of the following independent variables were explored: Monthly income, maternal education, partner's education, employment status of respondents, spousal attitude to contraceptive use, religion, availability of health centres in communities of respondents, time involved in walking to the nearest health centres, transport cost to health centers, number of health talks ever attended, mass media exposure, maternal age and marital status .The variables were selected based on previous studies (10, 17, 26-29). Both maternal education and partner's education were categorized into no formal education, primary education, secondary education and tertiary education. Religion was categorized into other Christians, Catholic, and Others (Islam, African Traditional worshiper, Pagans). Employment status considered working and not working women. Monthly income considered the monthly income of respondents (measured in naira). The following response options were provided: < 10000, (10000-14,999), (15,000-19,999) and ≥ 20, 000. The transport cost refers to the amount of money respondents spent on movement to and fro health entre (measured in naira). Four response options were provided :< 200, (200-499), (500-799) and ≥ 800. Exposure to media examined whether respondents listen to the radio, watches television and read newspaper. Respondents who did any of this were concluded to be exposed, while those who did not were considered not exposed. Spousal attitude to contraceptive examined if respondent's spouse is in support of her usage of contraceptive or oppose to it. Availability of health centres in communities examined if health centre exists in respondent's communities. Time involved in travelling to health centre considers the minimum amount of time it will take the respondent to walk to the nearest health centre. Three options were provided options < 30 minutes, (30-59) minutes and ≥ 60 minutes. Number of health talks attended ever considered the number of health talks the respondents attended in continuous terms. Maternal age measures the recent age of respondents in years. Marital status considered the respondent's current marital status. The following response options were

considered: married, living together, divorced, widowed and separated.

Data analysis

All statistical analyses were undertaken using STATA version 13.0. Socio-demographic characteristics were presented using simple proportions and frequency. Cross tabulation was performed to obtain the proportion of use and non-use of modern contraceptive among the women. The binary logistic regression was estimated to show both adjusted and unadjusted odd ratios. Only variables that were significant at the unadjusted model were accommodated into the adjusted logistic regression model. Statistical analyses for the logistic regression were set at 5%.

Results

The summary of respondents is presented in Table 1.Teenage mothers (15-19) years constituted 22.9% while 77.1% were within the age group (20-49) years. A higher proportion of the women had secondary educational qualifications (46.6%). Majority of the women were not working hence they were full time house wife (72.4%). While 52.1% were married and living with their husbands, 20.3% were in informal union, and the remaining numbers were among widowed, separated, divorced and single. The majority of the women were affiliated to other Christians (71.1%), and other Catholic faith (23.9%). While 69% earned less than ₦10,000 per month, approximately 12% belonged to the income group ₦ (20,000-99,999). Majority of the women pay less than ₦200 as transport fare to the nearest health centre (87.2%). A higher proportion of partners had secondary educational qualification (44.6%). Approximately 92% of partners were working. While 77.9% were in support of their wives using contraceptive 22.1% were not. From the analysis, 91.2% of the respondents reported the availability of health centre in their communities. Majority of the participants reported they have attended health talk programs two times (50.1%). A low media exposure was recorded, as only 17.7% of the respondents reported either watching television, listening to the radio or reading newspapers.

Table 1: Characteristics of the study respondents

Variables	Frequency	Percentage
Maternal age (years)		
15-19	88	22.9
20-49	296	77.1
Maternal education		
None formal	20	5.2
Primary	83	21.6
Secondary	179	46.6
Tertiary	102	26.6
Employment status		
Working	86	22.4
Not working	298	72.4
Marital status		

Married	200	52.1
Living together	78	20.3
Widowed	10	2.6
Separated	04	1.04
Divorced	08	2.1
Single	84	22.0
Religion		
Catholic	92	23.9
Other Christians		
Other religions	19	4.9
Monthly income (₦)		
<10,000	265	69.0
10,000-14,999	41	10.7
15,000-19,999	34	8.9
≥20,000	44	11.5
Cost of transportation to nearest PHCs (₦)		
<200	334	81.2
200-499	29	7.6
500-799	08	2.1
≥800	12	3.1
Husband Education		
Non-formal	10	3.6
Primary	34	12.2
Secondary	124	44.6
Tertiary	110	39.6
Spousal attitude to contraception		
Support	299	77.9
Non-support	85	22.1
Availability of health Centre in communities		
Yes	350	91.2
No	34	8.9
Travel time health Centers (mins)		
<30	289	75.3
30-59	70	18.2
≥60	25	6.5
Number of health talks ever attended		
1	81	21.2
2	192	50.1
3	62	16.2
4	28	7.3
≥5	20	5.2

Mass media exposure		
Yes	68	17.7
No	316	82.3

Source: Author's compilation (2020).

Patterns of contraceptive use among respondents

In Table 2, we examined the various contraceptive used by the study participants. About 19.3% of the respondents were currently using contraceptive while 31.8% reported they once used contraceptive, but they stopped. Examination of various types of contraceptive use revealed that in order of frequency, the most commonly used method of contraceptives were injectable (26.2%), oral pills (24.6%), and implant (14.8%). Also, withdrawal method accounted for 9.8%, safe period for 8.2% and breast feeding for 3.3%.

Table 2: Patterns of contraceptive use among study participants

Variables	Frequency	Percentage
Current use of modern contraceptive/Family planning (FP)		
Yes	74	19.3
No	310	80.7
Once used contraceptive/ FP but stopped		
Yes	122	31.8
No	262	68.2
Method of contraceptive/FP		
Male condom	10	8.2
Female condom	02	1.6
Oral pills	30	24.6
IUCD	0	0
Implant	18	14.8
Injectable	32	26.2
BTL	04	3.3
Breast feeding	04	3.3
Safe period	10	8.2
Withdrawal	12	9.8
Female sterilization	0	0
Vasectomy	0	0

Source: Author's compilation (2020)

Bivariate analysis

In Table 3, the proportion of respondents that use modern contraceptive against those who did not use across the various socio-demographic factors is presented. The use of modern contraceptive is more pronounced among participants within the age group (15-19) years (34.1%), those who reported tertiary educational qualification (44.1%), Catholic Christians (52.6%), those who were

divorced (62.5%) and participants who belonged to the income bracket, ₦ (20,000-99,999) (40.9%). Furthermore, the use of modern contraceptive is higher among respondents who reported transport cost to the nearest facility as ₦ (500-799) (62.5%), whose partners had primary school educational qualification (41.2%), those whose partners were in support that they should use contraceptive (32.1%) and those who lived within 30 minutes' walk to the nearest health centre (33.2%). In comparison with respondents living in communities without health centres, those in communities with health centres were more likely to use modern contraceptive (32.6%). Women who reported they attended health talks twice were more likely to use modern contraceptive (33.9%). Finally, higher proportion of women who recorded media exposure utilized modern contraceptives (33.8%).

Table 3: Bivariate analysis of use and non-use of modern contraceptive among study participants

Socio-demographic factors	Non-use (%)	Use (%)
Maternal age (years)		
15-19	65.9	34.1
20-49	68.6	31.4
Maternal education		
None formal	80.0	20.0
Primary	78.3	21.7
Secondary	68.7	31.3
Tertiary	55.9	44.1
Religion		
Catholic	47.4	52.6
Other Christian	69.9	30.1
Other Religions	66.3	33.7
Marital status		
Married	68.8	31.2
Widowed	60.0	40.0
Separated	66.7	33.3
Divorced	37.5	62.5
Single	69.0	31.0
Monthly income (₦)		
< 10,000	68.9	31.1
10,000-14,999	73.2	26.8
15,000-19,999	67.6	32.4
≥20,000	59.1	40.9
Cost of transportation to nearest PHCs (₦)		
<200	69.1	32.9
200-499	86.2	13.8
500-799	37.5	62.5
≥800	75.0	25.0

Husband's education		
No husband	70.8	29.2
None formal	60.0	40.0
Primary	58.8	41.2
Secondary	65.9	34.1
Tertiary	71.8	28.2
Spousal attitude to contraception		
Support	67.9	32.1
Non-support	68.2	31.8
Travel time health Centers (mins)		
<30	66.8	33.2
30-59	74.3	25.7
≥60	64.0	36.0
Availability of health Centre in communities		
Yes	67.4	32.6
No	92.7	7.3
Number of health talks ever attended		
1	67.9	32.1
2	66.1	33.9
3	69.4	30.6
4	71.4	28.6
≥5	75.0	25.0
Mass media exposure		
Yes	68.4	31.6
No	66.2	33.8

Source: Author's compilation (2020).

Reasons for use of modern contraceptive

The data showed that 27.9% of the women used modern contraceptive for child spacing. In addition, 18.0% mentioned that they already had enough children and their usage of modern contraceptive was to avoid unwanted pregnancy and possible unsafe abortion (9.8%). Only a relatively small number of them were using modern contraceptive because their husbands desired it or approved of it (4.9%) (**Table 4**).

Table 4: Reasons for use of modern contraceptive

Reason for use	Number of women	% of women
To space children	34	27.9
I have enough children	22	18
To avoid unsafe abortion	12	9.8
My husband demanded for it	06	4.9

Source: Author's compilation (2020).

Reasons for non-use of modern contraceptive

A higher proportion of the respondents (39.6%) reported side effects as reason for their non-use of modern contraceptive, while 33.3% reported other barriers as the reasons why they were not using modern contraceptive. Furthermore, 16.7% reported their desire for more babies as their reasons for discontinuing the use of modern contraceptive. Also, 6.3% reported that their husband desired they stop. Finally, only 4.2% of them reported high costs of modern contraceptive as their major hindrance (**Table 5**).

Table 5: Reasons for non- use of modern contraceptive

Reason for use	Number of women	% of women
Reasons for non-use		
Side effects	19	39.6
Too expensive	02	4.2
I wanted another baby	08	16.7
My husband forced me to stop it	03	6.3
Others	16	33.3

Source: Author's computation (2020).

Predictor of modern contraceptive use

In Table 6, univariate analysis and results of multivariate analysis using binary logistic regression showing predictors of modern contraceptive use is presented. In reference to respondents who had no formal educational qualification, those with secondary educational qualifications {**aOR**: 1.46, 95% CI: 0.45-4.71**}** and tertiary education qualifications {**aOR**: 3.09, 95% CI: 0.93-10.24**}** were significantly more likely to use modern contraceptive.

Table 6: Factors Associated with the use of Modern Contraceptive

Variable	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
Maternal age (years)		
15-19 (ref)	1	0
20-49	0.886 (0.54 – 1.47)	0
Maternal education		
Non-formal(ref)	1	1
Primary	1.108 (0.33 – 3.73)	0.831 (0.24 – 2.91)
Secondary	1.821 (0.58 – 5.70)	1.456 (0.45 – 4.71)*
Tertiary	3.158 (0.99 – 10.11) ***	3.091 (0.93 – 10.24)*
Employment status		
Working (ref)	1	0
Not working	1.262 (0.76 – 2.09)	0
Marital status		
Married(ref)	1	1

Living together	1.401 (0.40 – 5.35)	1.379 (0.35 – 5.42)
Single	1.103 (0.10 – 12.33) ***	2.341 (0.19 – 29.68)
Separated	1.678 (0.86 – 15.74)	3.586 (0.77 – 16.78)
Widowed	0.989 (0.58 – 1.68)	1.100 (0.63 – 1.92)
Religion		
Other Christians (ref)	1	1
Catholic Christian	0.386 (0.15 – 0.99) ***	0.328 (0.12 – 0.94)
Other Religion	0.457 (0.17 – 1.24)	0.400 (0.13 – 1.21)
Monthly income (₦)		
<10,000 (ref)	1	0
10,000 14,999	0.804 (0.38 – 1.68)	0
15,000-19,999	1.048 (0.49 – 2.25)	0
20,000-99,999	1.518 (0.79 – 2.92)	0
Spousal support for contraceptive		
Support (ref)	1	0
No support	0.984 (0.58 – 1.65)	0
Travel time health Centers (mins)		
<30 (ref)	1	0
30-59	0.696 (0.39 – 1.25)	0
≥60	1.131 (0.48 – 2.65)	0
Number of health talks ever attended		
1(ref)	1	0
2	1.083 (0.62 – 1.88)	0
3	0.935 (0.46-1.91)	0
4	0.846 (0.33 – 2.17)	0
≥5	0.705 (0.23 – 2.15)	0
Mass media exposure		
Yes (ref)	1	0
No	1.104 (0.63 – 1.92)	0
Partner's education		
No partner (ref)	1.612 (0.43 – 6.12)	0
Non-formal	1.694 (0.76 – 3.77)	0
Primary	1.254 (0.72 – 2.20)	0
≥ Secondary education	0.949 (0.53 – 1.71)	0
Availability of health Centre		
Yes (ref)	1	0
No	0.745 (0.34 – 1.65)	0
Cost of transportation to PHC (₦)		
<200 (ref)	1	1
(200-499)	0.326 (0.11 – 0.96) ***	0.295 (0.10 – 0.90)
(500-799)	3.394 (0.77 – 14.46) ***	4.141 (0.93 – 18.43)

≥800	0.679 (0.18 – 2.56)	0.665 (0.17 – 2.68)

Source: Author's computation (2020).

*Ref: reference category; 0 Variable not included in the model; *Significant at 1% significance level; ** Significant at 5% significance level; ***Significant at 10% significance level; + represent unemployed women.*

Discussion

The study examined the use of modern contraceptive among reproductive age women in eight randomly selected rural communities in Delta State, Southern Nigeria. Also, the determinants of modern contraceptive and reasons for use and discontinuation of use were explored. The result of the study showed that 19.3% of the women reported they were currently using modern contraceptive. Although, the contraceptive prevalent rate reported in this study is higher than the 17% reported by the most recent National Demographic and Health Survey (**30**), it is still far below the global average of 63% (**31**). Several recent Nigerian studies have reported low contraceptive prevalent rate (2, 30, 32, 33, 34, and 35). In 2011, the Nigerian government launched the free family planning commodity policy, by committing itself to providing family planning commodities free of charge to all women attending public health facilities. Again, following the 2012 London family planning summit, family planning 2020, Nigerian government set a target of achieving a 36% modern contraceptive prevalent rate by 2018 (2). Annually, the target was to increase the modern contraceptive prevalent rate by 1.5% (35). Also, the prevalence reported in this study is far below the 66.1% reported by a recent Nigerian study conducted in South-western geopolitical zones of Nigeria **(22)**. The low contraceptive prevalent rate in the study area shows that a lot of the women who did not desire babies in the next few years were still not using contraceptive, making it impossible for them to avoid unwanted pregnancies and it attendant undesirable consequences **(10).** Low Nigerian contraceptive rate has been associated with high fertility rate and rapid population explosion (6, 36). Evidence has linked both high under-five mortality rate (120 per 1,000 live births) and high maternal mortality rate (565 per 100,000 live births) in Nigeria to the high fertility rate **(10).** These indicators are the themes that featured in both the MDGs and SDGs. Hence, to achieve the SDGs, efforts must be made to redress the RPG by encouraging the use of contraceptive among rural Nigerian women.

Approximately 40% of the respondents reported side effects as the major reason why they discontinued the use of modern contraceptive. This is far higher than 7.2% reported by the most recent National Demographic and Health Survey (**30**). Decisions to use modern contraceptives was influenced by the side effects of the methods, dislike of existing methods, inconveniencies associated with the usage and the desire to have more children. Though some respondents were practising family planning the fear of side effects discouraged them. It is the most cited reasons for discontinuation of, or reluctance to use modern contraceptive in this study. Ajayi, Adeniyi and Akpan (**22**), remarked that the fear of side effects with respect to modern contraceptive may push some women to rely on less effective traditional methods (withdrawal and rhythm methods).

Other recent Nigerian studies reported fear of side effect as deterrent to use of modern contraceptive (32,33) Erroneous perception of the side effects of modern contraceptive and possibly infertility associated with it is common among women who do not have adequate reproductive health information. The women in the study area should be educated on the usefulness of modern contraceptive and that the method is safe without any side effect. Reproductive health information can be broadcasted through radio, television and other media platforms. Intervention programs that involve the use of health workers to educate women can be implemented in the study areas. Family planning and reproductive health should be integrated in the study area.

Furthermore, the desire to space children and avoid unplanned pregnancy were the two major reasons advanced why some women were using contraceptive. These set of practitioners are aware of the relationships between the use of contraceptive, their own health and their children's health and the overall quality of life **(37**). It can be deduced from the findings of the study that women are likely to use contraceptive to avoid unwanted pregnancies and its undesirable consequences.

The logistic regression result showed that maternal education significantly influenced the use of contraceptive. This finding corroborates that of several other studies both for Nigeria and elsewhere (2,**10, 16, 38-40**).The positive effects of education on contraceptive use is due to the fact that education improves women's socioeconomic status and empowerment, and as a result impacts positively on contraceptive use. In the literature, education is associated with knowledge, attitude and utilization of modern maternal care services (**34**). Maternal education enhances their capability and also their reproductive rights to decide freely and responsibly the number, spacing and timing of their children and to have other necessary information regarding reproductive rights. Though the women in the study area are significantly educated as shown by the summary statistics, however, for the few who are not educated, opportunities should be expanded for them to acquire formal education. For both primary and secondary school, enrolment should be made compulsory for women. At the tertiary level, a preferential cut-off should be used to encourage female enrolment rate. Free tuition fee should be implemented for female children in order to encourage female educational enrolment rate.

Limitations of the study

The study has three limitations that should be noted. First, the data analysed was gotten through verbal reporting, hence was not subjected to any form of validation such as the use of health facility card. Second, the study was cross-sectional and so the interporal relationship between the socio-demographic factors and the use of contraceptive was not established. Third, the findings of the study cannot be generalized to urban population.

Conclusion

The study concludes that a significant proportion of the respondents were not using contraceptive despite the fact that they were not planning to have children in the next two to three years. Thus, the coverage of contraceptive is both poor and unimpressive. Fear of side effects of contraception and women wanting more children are significant reasons for poor practice. Socio-demographic factor like education and monthly income was found to influence the

use of contraceptive among respondents. In addition, whether women practise family planning depends on many factors and the most common factors are avoiding unwanted pregnancy or spacing out the number of children, the side effects of the methods and other reasons advanced by respondents. Side effects were the biggest concern for non-users. Rumours about possible side effects deterred some women from using modern contraceptive; especially the pill and injectable contraceptive. The various stakeholders involved in the implementation of family planning programmes should, therefore, intensify awareness campaigns on specific methods of contraception and management of possible side effects and improve public, private and outreach family planning services provision to improve uptake and reproductive health outcomes in the study area.

Abbreviation

MDGs: Millennium Development Goals; SDGs: Sustainable Development Goals; ICPD: International Conference on Population and Development; POA: Plan of Action; USAID: United States Agency for International Development; UN: United Nations; FGN: Federal Government of Nigeria; NPPD: National Policy on Population and Development; RPG: rapid population growth; NPPSD: National Policy on Population and Sustainable Development; NPopC: National Population Commission and LGA: Local Government Area; FP: Family Planning; IUCD: Intrauterine contraceptive device.

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Availability of Data and Materials

The dataset used and analyzed during the current study is available from the corresponding author on a reasonable request**.**

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Authors' Contribution
RRA conceived the study, undertook the analysis while CIN undertook the write up of part of the manuscript and estimated the models. All two authors read and approved the final manuscript. It was the responsibility of RRA to upload and send to the journal.

Conflict of Interest
The authors declared they have no conflicts of interest.

Footnotes:
1.According to the 2013 NDHS, modern contraceptives method are pills, intra-uterine device, injectable, implants, female condoms, male condoms, diaphragm, foam/jelly, female sterilization, male sterilization and lactational amenorrhea (NDHS, 2014). Methods outside of these are non-modern methods, which could be either traditional methods or the folklore methods.

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