



Contraceptive Use in Two Semi-Urban Primary Health Care Centres in Ogun State Southwest Nigeria: Determinants and barriers

Adebayo Adekunle Akadri^{1*} and Oluwaseyi Isaiah Odelola²

¹Department of Obstetrics and Gynaecology, Babcock University, Nigeria; and

²Department of Obstetrics and Gynaecology, Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria

*Corresponding author: Adebayo Adekunle Akadri, Department of Obstetrics and Gynaecology, Babcock University, Nigeria. E-mail: bayoakadri@yahoo.com

Summary

BACKGROUND

Contraceptive uptake is low in Nigerian women and this is associated with a high incidence of unintended pregnancies and unsafe abortions with their attendant complications. This study was designed to elucidate the pattern, determinants, and barriers of contraceptive use in two primary health care centres in Ogun State south-west Nigeria.

MATERIALS AND METHODS

This was a cross-sectional study. The convenience sampling technique was used to recruit 250 women who presented for contraceptive services in two primary health care centres. A structured questionnaire was used to obtain contraceptive information. Data were analysed using IBM-SPSS version 23.0 (IBM Corp., Armonk, NY, USA). The level of significance was set at a p-value less than 0.05.

RESULTS

Out of 250 study participants, 234(93.6%) were aware of contraceptives but only 142 (56.8%) had used any method. The male condom was the most commonly used contraceptive method (61; 24.4%). Fear of side effects (128; 51.2%) was the most frequently reported barrier to contraceptive use. Women who attained secondary and tertiary levels of education had a higher likelihood of using contraceptives than those who attained primary level (aOR 7.4, CI 2.0-27.1, P=0.003) and (aOR 10.8, CI 2.7-42.3, P=0.001) respectively.

CONCLUSION

The male condom was the most commonly used contraceptive method while fear of side effects was the most commonly reported barrier to contraceptive use. Despite the high level of awareness, contraceptive uptake is still low in Sagamu, Ogun State, Nigeria.

RECOMMENDATION:

Awareness campaigns should be instituted in the media to provide credible information about the benefits of contraceptives and dispel misconceptions regarding their use.

Keywords: Barriers, Contraceptives, Determinants, Uptake

[*Afr. J. Health Sci.* 2022 35(3): 322 - 331]

Introduction

Nigeria has a rapid population growth rate and a recent estimate suggests that the

population may be approaching 200 million, the largest in Africa [1]. The Total Fertility Rate (TFR) has remained high with a recent estimate



being 5.3 [2]. This huge population constitutes a major strain on the limited resources available in the country. Evidence suggests that there is a positive correlation between population growth and increasing poverty in Nigeria [3]. This gloomy picture is unlikely to change unless serious attempts are made to reduce the fertility rate of women in the country. It is widely agreed that the use of modern contraceptives is the main determinant of fertility [1].

Contraception is the deliberate prevention of impregnation through the use of various devices, agents, drugs, sexual practices, or surgical procedures [4]. Modern methods of contraception could either be temporary or permanent. Permanent methods include male and female sterilization while temporary methods could be generally classified into hormonal contraceptives (oral, injectables, and implants), intrauterine devices, and barrier methods. Intrauterine contraceptive devices and progestogen-only injectable contraceptives appear to be the most commonly used contraceptive methods by Nigerian women [2,5].

In Nigeria, the contraceptive prevalence rate is low; 17% among women of the reproductive age group while the unmet need for family planning is 19% among married women [2]. Some factors such as socioeconomic status, place of residence, and level of education may affect the uptake of contraceptives by Nigerian women. The number of children a woman has may also determine if she will use contraceptives. Generally, women without children or those with low parity often avoid using contraceptives. Other factors such as religious beliefs, misinformation and wrong perception about various contraceptive methods, fear of side effects, and opposition from partners also contribute to poor uptake of contraceptives in sub-Saharan Africa [6]. The role of men in couples' contraceptive choices cannot also be ignored because their perception regarding

contraceptives often influences couples' behaviour.

Nigeria's rapid population growth rate has become a great challenge to its economic development.

With the present population growth rate, it is projected that Nigeria will be the 4th most populous country by the year 2050 with a population of 397 million [7]. The consequences of the rapidly growing population are numerous. They include deforestation, desertification, climate change and the destruction of natural ecosystems, unemployment, pressure on health facilities, pressure on housing and transportation infrastructure, conflicts, and worsening security [8]. The result is pervasive poverty and deterioration in the living condition of the citizens.

Recent surveys in some tertiary hospitals in Nigeria have indicated low contraceptive uptake among women [5,9,10]. In addition to the high fertility rate, the low contraceptive uptake by Nigerian women leads to a high incidence of unintended pregnancies which commonly results in unsafe abortion with its attendant complications. It is important to note that unsafe abortion accounts for 7.8% of maternal mortality in Nigeria [11].

One of the targets towards achieving sustainable development goal three is ensuring universal access to sexual and reproductive healthcare services including family planning. Knowledge of the pattern of choices and determinants of contraceptive use in a given environment is essential to developing strategies that will result in improved contraceptive prevalence and reduced unmet need for family planning. Hence, this study was designed to elucidate the pattern, determinants, and barriers of contraceptive use in two primary health care centres in Ogun State south-west Nigeria.



Materials and Methods

This was a cross-sectional study of contraceptive use among women in two primary health care centres (PHCs) in Ogun State, Nigeria. The PHCs are located in Ajaka and Sabo, both being semi-urban areas in Sagamu, Ogun State. All women 15-49 years who presented for contraceptive services in the PHCs were recruited for the study. The minimum sample size was calculated using the Cochran formula $n = pq (z^2)/e^2$ [12]; where Z= Standard normal deviate (1.96), e = margin of error (0.05), p is the prevalence of modern contraceptive use among women 15- 49 years in Ogun State, Nigeria, reported as 16.6% from a previous study [2] and $q = 1-p$. Therefore, the minimum sample size of the study was 212. The addition of 10% to allow for attrition gave a final sample size of 233.

All consenting women 15-49 years were recruited for the study while women who presented for emergency contraception or those who were placed on contraceptive agents for other indications apart from contraceptives, were excluded from the study. A convenience sampling technique was used. All women who met the inclusion criteria were recruited until the sample size was reached.

The data collection instrument was a structured questionnaire that was developed specifically for this study. The content validity of the questionnaire was assessed by a gynaecologist with vast knowledge in contraception and family planning. The questionnaire is made up of three sections. The first section was used to collect information on the socio-demographic characteristics of the study participants. The second section was used to obtain information on the awareness and desirability of various contraceptive methods while the third section was used to obtain information on the potential barriers to the uptake of contraceptives. The questionnaire was

pretested among clients at a PHC in Ilishan-Remo, Ogun State, and necessary modifications were made before use for the study. The questionnaires were administered to the respondents by the researcher and trained research assistants (family planning nurses, resident doctors in obstetrics and gynaecology). The study participants were assured of the confidentiality of data obtained from them.

Data collected in questionnaires were checked for completeness and accuracy, anonymized to ensure privacy, and entered into a computer for analysis using the IBM-SPSS version 23.0 (IBM Corp., Armonk, NY, USA). Continuous variables were summarized using descriptive statistics such as median and interquartile range (IQR). Categorical variables were summarized using frequencies and percentages. Pearson's Chi-square test was used to establish the association between some respondents' factors and their choice of contraceptives. Binary logistic regression analysis was done to determine probable determinants of contraceptive uptake. The level of significance was set at a p-value less than 0.05.

Ethical approval for the study was obtained from the Babcock University Health Research Ethics Committee (NHREC/24/01/2020). The research was conducted under the World Medical Association Declaration of Helsinki. All study participants were given full information on all aspects of the study and then asked to sign an informed consent form.

Results

A total of 250 women were recruited for the study. The socio-demographic characteristics of the study participants are depicted in Table 1. One hundred and fourteen participants (45.6%) were in the 30-39 years age group while 96 participants (38.4%) were in the 20-29 years age group. The median age of the study participants



was 32 years, with an interquartile range (IQR) of 26-36 years. The majority of study participants (151; 60.4%) had a parity of 0-2. The median parity was 2, with an IQR of 1-3. One hundred and eighty-five participants (74.0%) were Christians and the majority (130; 52.0%) attained tertiary level education. One hundred and thirty-two participants (52.8%) attained coitarche at an age less than 20 years; the median age at coitarche was 19 years, with an IQR of 17-23 years. One hundred and twenty-two participants (48.8%) married before their twenty-fifth birthday; the median age at marriage was 25 years with an IQR of 22-28 years. Two hundred and thirty-four study participants (93.6%) were aware of modern forms of contraceptives while only 142 study participants (56.8%) were either currently using contraceptives or had used contraceptives in the past. Of all the contraceptive methods, the male

condom was the method that participants were most aware of (151; 60.4%). The male condom was also the most commonly used contraceptive method by the respondents; 61 participants (24.4%) reported having used the method. The most commonly used long-acting contraceptive method was subdermal implants, used by 49 study participants (19.6%). Spermicides and diaphragm/cervical cap had the poorest awareness among the study participants, (11; 4.4%) and (20; 8.0%) respectively. None of the study participants had ever used either spermicides or diaphragm/cervical caps. Male condoms (20; 8.0%), subdermal implants (17; 6.8%), injectables (15; 6.0%) and withdrawal method (15; 6.0%) were the most preferred methods for future use by the study participants. None of the study participants indicated the desire to use permanent methods such as bilateral tubal ligation and vasectomy (Table 2).

Table 1:
Socio-Demographic Characteristics of Study Participants

Characteristics	Frequency	Percentage
Age (years)		
≤ 19	8	3.2
20-29	96	38.4
30-39	114	45.6
40-49	32	12.8
Parity		
0-2	151	60.4
>2	99	39.6
Religion		
Christianity	185	74.0
Islam	65	26.0
Level of Education		
Primary	20	8.0
Secondary	100	40.0
Tertiary	130	52.0
Age at Coitarche (years)		
<20	132	52.8
≥ 20	118	47.2
Age at Marriage (years)		
<25	122	48.8
≥25	128	51.2



The fear of side effects (128; 51.2%) and the perception that the use of contraceptives could cause infertility (65; 26.0%) were the most frequently reported barriers to the use of contraceptives by the respondents (Table 3). The most common source of contraceptive information was from health workers, 165 study participants (66.0%) obtained information relating to contraceptives from Health workers (Table 4).

Table 5 depicts the association between some study participants' factors and

contraceptive use. The proportion of women using contraceptives increased with the increasing age of study participants, age at coitarche, age at marriage, level of education, and the number of children. Contraceptive use was higher in women who had children of both genders, than in those with one gender or those without children. However, on logistic regression analysis (table 6), the only level of education predicted the use of contraceptives.

Table 2:
Awareness and Usage of the Various Contraceptive Methods

Contraceptive method	Awareness n(%)	Ever used method n(%)	The preferred method for future use n(%)
Withdrawal method	113(45.2)	29(11.6)	15(6.0)
Billings method	29(11.6)	5(2.0)	0(0.0)
Spermicide	11(4.4)	0(0.0)	0(0.0)
Diaphragm/cervical cap	20(8.0)	0(0.0)	0(0.0)
Male condom	151(60.4)	61(24.4)	20(8.0)
Female condom	104(41.6)	9(3.6)	6(2.4)
Oral Pills	135(54.0)	35(14.0)	9(3.6)
Injectables	109(43.6)	26(10.4)	15(6.0)
Subdermal implant	132(52.8)	49(19.6)	17(6.8)
Intrauterine contraceptive device	107(42.8)	28(11.2)	3(1.2)
Emergency contraceptive pill	94(37.6)	31(12.4)	3(1.2)
Bilateral Tubal ligation	47(18.8)	0(0.0)	0(0.0)
Vasectomy	29(11.6)	0(0.0)	0(0.0)

Table 3:
Barriers to Contraceptive Uptake

Barriers	Frequency	Percentage
Occasional sex cannot lead to pregnancy	64	25.6
Contraceptive methods are too expensive	15	6.0
Worried about the side effects	128	51.2
Contraceptive methods are not readily available or accessible	6	2.4
I don't know how to use	33	13.2
My partner does not want (me) to use a method	44	17.6
My religion does not encourage the use of contraceptive	41	16.4
My culture does not encourage the use of contraceptive	15	6.0
Contraceptive use can cause infertility	65	26.0
My health care worker does not encourage the use of contraceptive	0	0.0

*Multiple choices allowed



When compared with women who attained primary level education, women who attained secondary level education had a higher likelihood of using contraceptives (aOR 7.4, CI 2.0-27.1, P=0.003). Similarly, women who attained tertiary-level education also had a higher likelihood of using contraceptives (aOR 10.8, CI 2.7-42.3, P=0.001).

Discussion

Access to modern contraceptives is one of the reproductive rights of women as captured in several global initiatives. One of such initiatives is the sustainable development goals which call for universal access of girls and women to family planning services [13].

Table 4:
Sources of Information about Contraceptive

Source	Frequency	Percentage
Health workers	165	66.0
Family and friends	42	16.8
Media (Newspapers, radio, television)	43	17.2
Social media	35	14.0
Internet	23	9.2
Religious centres	11	4.4
School/Seminars/lectures	30	12.0

*Multiple choices allowed

Table 5:
Association between Some Study Participants' Factors and Contraceptive Use

Variables	Use of Contraceptives		Chi-square	P-value
	Yes	No		
Age (years)				
< 20	0(0.0)	8(100.0)	22.601	<0.001
20-29	44(45.8)	52(54.2)		
30-39	74(64.9)	40(35.1)		
40-49	24(75.0)	8(25.0)		
Age at coitarche (years)				
<20	61(46.2)	71(53.8)	12.777	0.001
≥ 20	81(68.6)	37(31.4)		
Age at Marriage (years)				
<25	56(45.9)	66(54.1)	11.534	0.001
≥ 25	86(67.2)	42(32.8)		
Level of education				
Primary	4(20.0)	16(80.0)	13.152	0.001
Secondary	56(56.0)	44(44.0)		
Tertiary	82(63.1)	48(36.9)		
Gender of Children				
No child	9(24.3)	28(75.7)	19.737	<0.001
All females	29(56.9)	22(43.1)		
All males	32(61.5)	20(38.5)		
Both males and females	72(65.5)	38(34.5)		
Number of living children				
0-2	77(50.3)	76(49.7)	13.152	0.001
>2	65(67.0)	32(33.0)		



This study assessed the contraceptive choices and their determinants in two PHCs in Ogun State Nigeria. The majority of the study participants were between the ages of 20 – 39 years. This appears to be the age range when most Nigerian women opt to use contraceptives [2]. It is important to note that more than half of the study participants had started having sexual intercourse before being 20 years old and the majority reported getting married after their 25th birthday. This may suggest that women in southwest Nigeria use contraceptives mainly for child spacing in marriage rather than preventing unwanted pregnancy outside marriage. This underscores the importance of putting more effort into promoting contraceptive use among sexually active adolescents and young adults.

The awareness of contraceptive methods was very high among the respondents. Similar findings were reported in other Nigerian communities [14,15]. The high level of awareness however did not translate to the high uptake of contraceptive methods. This has also been reported by other researchers [14,15]. Male condoms and oral pills were the methods mostly known by the study respondents, similar to findings from other studies [14,16]. The male condom was also the most commonly used

method, followed by subdermal implants and oral pills. Contraceptive use and choices vary widely in Nigeria according to the type of health facility, geopolitical zone, and setting (urban or rural) settings. Factors such as availability, cost of services, side effects, and technical know-how of health care providers may influence the particular contraceptive device used by a woman. The availability and accessibility of male condoms and oral pills in many local drug stores may be responsible for their relatively common use. Also, the use of these contraceptive methods does not require input from health personnel. Subdermal implants were the most commonly used long-acting contraceptive method. Recent evidence suggests that contraceptive implants are also increasingly becoming popular among Nigerian women due to their effectiveness and long duration of action [17]. There is a need to create more awareness about long-acting contraceptive methods to increase their uptake.

Two-thirds of respondents in this study got information on the use of contraceptives from health workers. This is contrary to reports from other studies which suggest that only a few people get contraceptive information from health workers [18,19].

Table 6:
Logistic Regression Analysis of Predictors of Contraceptive Use

Variable	Adjusted Odds Ratio	95% C.I	P-value
Age	1.0	0.9-1.1	0.200
Age at coitarche	1.0	0.9-1.1	0.366
Age at marriage	0.9	0.9-1.1	0.844
Level of education			
Primary	Reference		
Secondary	7.4	2.0-27.1	0.003
Tertiary	10.8	2.7-42.3	0.001
Number of Living children	1.3	0.9-2.0	0.211
Gender of Children			
No child	Reference		
All males	2.6	0.9-7.6	0.087
All-female	2.8	0.9-8.5	0.069
Both males and females	2.1	0.6-8.5	0.263



It appears that the source of contraceptive information is dependent on age and marital status [20]. Married women, especially parous ones often attend family planning clinics and obtain their contraceptive information from health workers. However, adolescents and young adults often obtain their contraceptive information from family and friends and some of the information they get may be unreliable. This trend is particularly worrying and may be partly responsible for some of the misconceptions regarding the use of contraceptives. In Nigeria, there is a cultural perception that presupposes that discussions about sex and contraception with adolescents and young women are inappropriate; hence family planning clinics are not usually friendly to this set of people [18].

More than half of the respondents reported fear of side effects as a barrier to the use of modern contraceptives. Other important barriers noted in this study are the misconceptions that contraceptive use could cause infertility and that occasional sex could not lead to pregnancy. Previous studies have also reported that misconceptions, misinformation, and fear of side effects are some of the factors that act as barriers to contraceptive use by women [15,21,22]. Provision of contraceptive information through the use of mass media may assist in correcting some of the misconceptions about contraceptives among Nigerian women. Recent evidence also suggests that social media platforms may be useful in disseminating information about contraception [23]. This may be particularly effective among adolescents and young adults.

In this study, 'ever use' of contraceptives significantly increased with advancing age, higher age at coitarche, higher age at marriage, and increasing level of education. We can postulate that contraceptive

use may be indicated in older married women for child spacing and terminal contraception. The increased use of contraceptives associated with higher age at coitarche and marriage may also be an indication that contraceptive use by women in southwest Nigeria is predominantly in older, possibly married women. This is partly responsible for the high unmet need for contraceptive use, especially among adolescents and unmarried women and may also account for a substantial number of unintended or unwanted pregnancies in this group of women. Improved contraceptive use will assist in reducing unwanted pregnancies. This will be particularly beneficial in a country like Nigeria where abortion laws are restrictive and unsafe abortions with their negative reproductive health consequences are the norm.

The use of contraceptives was significantly higher in women who had more than two living children, and those who had both male and female children. As indicated in this study, factors such as the desire for particular gender (especially male child), early marriage, and early sexual debut are known to contribute significantly to the low uptake of modern contraceptives [6,24]. However, on logistic regression analysis, level of education was the only factor that was predictive of the use of contraceptives. The higher the educational attainment, the more likely it is that women will use modern contraceptives. Educated women are more likely to have access to contraceptive information. They are also more likely to desire child spacing and limiting family size.

This study has some limitations. The cross-sectional design of this study did not allow for the determination of the experiences of contraceptive users and the discontinuation rate. The study assessed contraceptive use in PHCs which often have a limited range of



contraceptive options available. This limits the generalizability of the results.

Conclusion

Male condoms, implants, and oral pills were the most commonly used contraceptive methods in Sagamu, Ogun State, Nigeria. The level of education of women was the only factor that was predictive of the use of contraceptives while fear of side effects and misconceptions about contraceptives were the commonest barriers to the use of contraceptives.

Recommendation

There is a need for policymakers and contraceptive advocates to drive the expansion of contraceptive choices, especially the long-acting reversible methods at primary health care centres. Awareness campaigns should be instituted in mass media and social media to provide credible information about the benefits of contraceptives and dispel misconceptions regarding their use. Furthermore, the education of women should be encouraged as this is predictive of contraceptive use. There is also a need for further studies to explore the experiences of contraceptive users and assess the discontinuation rates.

Source of financial support: None

References

1. **Akinyemi A, Adedini S, Hounton S, Akinlo A, Adedeji O, Adonri O et al.** Contraceptive use and distribution of high-risk births in Nigeria: a sub-national analysis. *Glob Health Action* 2015, 8: 29745 - <http://dx.doi.org/10.3402/gha.v8.29745>
2. **National Population Commission (NPC)** [Nigeria] and ICF. Nigeria demographic and health survey 2018 key indicators report. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.
3. **Olofin OP, Adejumo AV and Sanusi KA.** Determinants of Poverty Level in Nigeria. *Journal of Sustainable Development* 2015; 8(1): 235-241
4. **Meka IA, Okwara EC and Meka AO.** Contraception among bankers in an urban community in Lagos State, Nigeria. *Pan Afr Med J* 2013;14:80.
5. **Akadri AA and Odelola OI.** Progestogen-only injectable contraceptive: Acceptor prevalence and client experience at Sagamu, Nigeria. *Niger Postgrad Med J* 2017;24:178-81.
6. **Ogboghodo EO, Adam VY and Wagbatsoma VA.** Prevalence and determinants of contraceptive use among women of child-bearing age in a rural community in southern Nigeria. *Journal of Community Medicine and Primary Health Care.* 29 (2) 97-107.
7. **World Population Data Sheet (WPDS)** (2015). Washington: *Population Reference Bureau*, 2015; 1-3.
8. **Dominic A, Oluwatoyin MA and Fagbeminiyi FF.** The determinants of population growth in Nigeria: A co-integration approach. *The International Journal of Humanities and Social Studies* 2016; 4(11): 38-44.
9. **Adebayo AM, Ojo TO, Omotoso BA and Ayodeji OO.** Family planning services in a tertiary hospital in a semi-urban area of south-western Nigeria: Uptake and determinants of contraceptive use. *J Obstet Gynaecol.* 2016;36(7):904-908.
10. **Ojule JD and Macpepple DA.** Family planning practice in a tertiary health institution in Southern Nigeria. *West Afr J Med.* 2011;30(3):178-81.
11. **Oladapo OT, Adetoro OO, Ekele BA, Chama C, Etuk SJ, Aboyemi AP et al.** When getting there is not enough: a nationwide cross-sectional study of 998 maternal deaths and 1451 near-misses in



- public tertiary hospitals in a low-income country. *BJOG* 2016;123:928–938.
12. **Cochran WG.** Sampling techniques (3rd ed.). New York: *John Wiley & Sons*,1977.
 13. **World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.** Family Planning: A Global Handbook for Providers (2018 update). Baltimore and Geneva: *CCP and WHO*, 2018.
 14. **Olubodun T, Balogun MR and Ogunsilu EA.** Awareness and practice of family planning among women residing in two rural communities in Ogun State, South West Nigeria. *Ann Afr Med* 2020; 19:246-51
 15. **Monjok E, Smesny A, Ekabua JE and Essien EJ.** Contraceptive practices in Nigeria: Literature review and recommendation for future policy decisions. *Open Access Journal of Contraception* 2010:1
 16. **Umoh AV and Abah MG.** Contraception awareness and practice among antenatal attendees in Uyo, Nigeria. *Pan Afr Med J* 2011; 10:53
 17. **Kolawole OO, Sowemimo OO, Ojo OO and Fasubaa OB.** Contraceptive implants: A review and current perspective in southwest Nigeria. *Trop J Obstet Gynaecol* 2018; 35: 108-12
 18. **Abiodun OM and Balogun OR.** Sexual activity and contraceptive use among young female students of tertiary educational institution in Ilorin, Nigeria. *Contraception.* 2009;79:146–149.
 19. **Oye-Adeniran BA, Adewole IF, Odeyemi KA, Ekanem EE and Umoh AV.** Contraceptive prevalence among young women in Nigeria. *J Obstet Gynaecol.* 2005;25:182–185.
 20. **Schwandt HM, Speizer IS and Corroon M.** Contraceptive service provider imposed restrictions to contraceptive access in urban Nigeria. *BMC Health Serv Res.* 2017;17(1):268. doi: 10.1186/s12913-017-2233-0. PMID: 28403858; PMCID: PMC5389090.
 21. **Campbell M, Sahin-Hodoglugil NN and Potts M.** Barriers to fertility regulation: a review of the literature. *Stud Fam Plann.* 2006;37:87–98.
 22. **Casterline JB and Sinding SW.** Unmet need for family planning in developing countries and implications for population policy. *Popul Dev Rev.* 2000;26: 691–723.
 23. **Merz AA, Gutiérrez-Sacristán A, Bartz D, Williams NE, Ojo A, Schaefer KM, et al.** Population attitudes toward contraceptive methods over time on a social media platform. *Am J Obstet Gynecol.* 2020 :S0002-9378(20)31378-8. doi: 10.1016/j.ajog.2020.11.042.
 24. **Babalola S, Folda L and Babayaro H.** The effect of a communication program on contraceptive ideation and use among young women in Northern Nigeria. *Stud Fam Plann.* 2008;39(3):211–220.