

Original Research Article

A Qualitative Analysis of Contraceptive Use and Barriers to Uptake Among Antenatal Clinic Attendees at a Tertiary Hospital in Port Harcourt, Southern Nigeria.

Abstract

Background: The use of modern contraceptives has been identified as one of the most cost-effective public health interventions for reducing fertility, improving maternal and child health outcomes, avoiding pregnancy and lowering maternal and child morbidity and mortality rates.

Aim: This study aimed at exploring the views of pregnant women attending the antenatal clinic (ANC) at the University of Port Harcourt Teaching Hospital (UPTH) on their use and barriers to contraceptive use.

Study design: Qualitative study

Methodology: A qualitative research design was used to collect data from pregnant women attending UPTH antenatal clinic. Four focus group discussions (FGDs) were conducted in August, 2021 with each group having 10 pregnant women. A total of 40 participants were purposely recruited from the antenatal clinic attendees every week. The interviews were audiotaped, transcribed and subjected to thematic analysis with the aid of NVivo 12.

Results: The FGDs revealed that many of the women used contraceptives mostly to prevent unwanted pregnancy, sexually transmitted infections (STIs) and for child spacing, while traditional methods (withdrawal, unproven concomitant mixtures and herbs) were in high use more than modern methods. The study also identified that the major barrier to contraceptive use among the women was fear of side effects while others included religion, misconception about contraceptives, search for a particular sex of child, partner's disapproval and financial constraints.

Conclusion: Findings from this research confirm that traditional methods enjoyed more use than modern contraceptive methods. Fear of side effects was the main barrier to modern contraceptive uptake among the pregnant women. Hence, the need to intensify efforts towards enlightening the populace on the types, uses and benefits of modern contraceptives as well as making them more affordable and accessible.

Keywords: *Contraceptive use, Barriers, Side effects, Antenatal attendees*

1. INTRODUCTION

The use of modern contraception has been identified as one of the most cost-effective public health interventions for reducing fertility, improving maternal and child health outcomes, avoiding pregnancy at high-risk maternal age and parity, and lowering maternal and child morbidity and mortality rates [1-3]. There has been a lot of technical breakthroughs in the production and types of available contraceptives to assist boost their advantages and meet the above-mentioned goals [4]. However, the World Health Organisation (WHO) stated that despite the numerous advantages and global efforts to promote the use of modern contraception, its adoption rate has remained low, with a continually high unmet demand for family planning among women in underdeveloped countries [5]. This unmet need for contraception has been defined as; fecund and sexually active women who do not want to have additional children or wish to delay pregnancy but are not taking any type of contraception [6]. Though unmet need for contraception among married women has decreased in all major areas of the globe, the greatest rate of 21% is seen in Sub Saharan Africa (SSA) [7,8]. According to the United Nations (UN), one in every five women in SSA has an unmet need for contraception [9], while over 75 million married women in this region are exposed to ineffective conventional approaches for avoiding pregnancy [10]. This has been attributed to some factors which include; lack of proper knowledge, religious views, occupation, financial concerns, educational level, fear of adverse effects, partner's rejection, and difficulty with decision-making at home which have all been identified as contributing reasons [11,12]. Hence, this study was set at investigating the use of contraceptives and the barriers to use among pregnant women attending antenatal clinic at a tertiary healthcare centre in Port Harcourt.

2. MATERIALS AND METHODS

2.1 Study Design and setting

This study employed the qualitative method and was conducted in the ante-natal clinic of the University of Port Harcourt Teaching Hospital (UPTH).

2.2 Study Population

The participants in this study were pregnant women who attended the UPTH antenatal clinic (ANC) during the study period (1st to 31st August, 2021). They were involved in a total of four (4) Focus Group Discussions (FGDs) which consisted of 10 participants per group (making it a total of 40 participants). The participants were purposely selected from the antenatal clinic attendees each week on different clinic days during the study period. The antenatal clinic runs from Monday to Friday every week. Criteria used for selection included their socio-demographics, use and non-use of contraceptives. The pregnant women that consented to join the FGDs were given appointment on a chosen day during the week to participate in the discussion.

2.3 Data Collection

The participants for this study were involved in focus group discussions using FGD guide to explore the views of the respondents on use of contraceptives and factors that affect its use among women of reproductive age. The researcher served as the facilitator of the discussion while a research assistant collected data. With participants' consent, the FGD sessions were audio-recorded to ensure that the accounts of all participants were captured, in addition to the notes taken during the discussions. The FGDs lasted about 60 minutes each. This was done every week until data saturation point was reached (a point at which no new information was given during the discussions).

2.4 Study Instrument

The study made use of an FGD guide which was made up of questions adapted from the study of Adeyemi et al. [13]. The respondents also filled a bio-data form which collected information on their socio-demographic details prior to the commencement of each session.

2.5 Statistical Analysis

The audio recordings and field notes were transcribed and coded accordingly using qualitative software (NVivo 12) for data management. Thematic analysis approach was used to analyse the qualitative data. The thematic analysis approach followed the generic steps of data familiarization, coding, defining and identification of emerging themes as well as reviewing them. A report was then developed in text format with the emerging themes including direct quotes from the respondents.

3. RESULTS

3.1 Social demographic characteristics of study participants

The socio demographic characteristics of the women recruited into the FGDs was analysed and presented in Table 1. As presented in the table, 22 (55.0%) of the women were aged 21 to 30 years with a mean age of 29.58 ± 4.59 . Most of them, 36 (90.0%) were married and 32 (80.0%) reported that they were educated up to the tertiary level. The religion of almost all the respondents, 37 (92.5%) was Christianity while 25 (62.5%) of the respondents were residing in urban areas.

Table 1: Socio-demographic characteristics of women in the FGDs

Variable	Frequency (n =40)	Percent
Age group		
≤20	1	2.5
21-30	22	55.0
31-40	17	42.5
Mean ± SD	29.58 ± 4.59	
Marital status		
Married	36	90.0
Single	3	7.5
Cohabiting	1	2.5

Education		
No formal education	1	2.5
Secondary education	7	17.5
Tertiary education	32	80.0
Religion		
Christianity	37	92.5
Islam	3	7.5
Residential area		
Rural	15	37.5
Urban	25	62.5

3.2 Views of women on uses and barriers to contraceptive use

A total of 40 pregnant women were engaged in four (4) focus group discussions (FGDs) consisting of 10 women per group discussion. Six themes emerged as follows;

3.2.1 Knowledge of contraceptive methods

The FGDs revealed that most of the women had good knowledge of contraceptives, and knew at least two contraceptive methods used for prevention of unwanted pregnancy, child spacing or prevention of sexually transmitted infections (STIs). Among the contraceptive methods mentioned were: contraceptive pills, Implants, injectables, postinor-1 and 2, bilateral tubal ligation (BTL), vasectomy, male and female condoms, withdrawal method, breast feeding, and counting of calendar dates for safe period. The discussants also expressed knowledge of different local or traditional methods used for contraception, including; mixture of leaves or herbs or roots with alcohol, use of castor seed, mixture of salt and water, mixture of alcohol with substances such as uda (Negro pepper), turmeric, ginger, garlic, uziza leaf (*Piper guineense* -West African pepper), et cetera, which they also referred to as 'combo' or 'washing and setting'. Other substances such as Andrews liver salt, unrefrigerated krest (a soft drink) taken alone or mixed with salt, Sprite, Schweppes, 'white quinine', and mixture of Lipton tea and lime were also mentioned as been used as contraceptives, especially to prevent pregnancy following unprotected sexual intercourse. While some used these traditional methods to prevent pregnancy, others used them for fertility. They explained that the function of these traditional mixtures was dependent on the period in the reproductive cycle of the woman within which they were taken. Thus, the traditional contraceptive methods were explained to have dual functions; to help a woman get pregnant or to prevent the woman from getting pregnant. It was explained that to prevent pregnancy, these traditional contraceptive mixtures (especially the ones they called 'combo') were to be taken immediately after sex, but to get pregnant they were to be taken during the period of menstruation. One of the participants narrated her experience thus;

"...there is another one [another contraceptive method] that they call 'combo'. That one is mixed with different things like turmeric, ginger and garlic cloves for three days. My sister took it because she didn't want to deliver [get pregnant] again. Although she is doing [she was on] family planning but she is still adding it [the traditional contraceptive] up. It can be used immediately you sleep with your husband [that is immediately after having unprotected sexual

intercourse], but I used it because I was looking for pregnancy. I usually mix it and keep 3 days before my period, then when my period starts, I start using it [drinking the mixture] until my period ends” (Participant 3, FGD 1).

It was unanimously concurred by the discussants that the said traditional contraceptive mixture called ‘combo’ had been in use over the years and had been effective for both prevention of pregnancy and conception.

3.2.2 Reasons for use of contraceptives

It was gathered from the group discussions that the reason why most of the women used contraceptives was to prevent unwanted pregnancy, and this was especially common among the single ladies. However, most married women used contraceptives for child spacing, to avoid having a child when they were not ready to have one, and to also maintain a family size that they would be able to cater for. Some contraceptives especially the traditional contraceptive mixtures were reported to have both contraceptive and fertility functions, and hence the dual use. They also reported that contraceptives such as condoms were used to prevent sexually transmitted infections (STIs). It was also extracted from the group discussions that some women used contraceptives to regularize irregular menstruation or to prevent painful menstruation, while others used contraceptives for cosmetic values which included use of contraceptives to gain weight, or to lose weight, or have better body shape, or to maintain body figure and shape. Some discussants also reported that some ladies used contraceptives because their friends were using it, without knowing the reason why the said friend subscribed to the particular contraceptive method.

“I have a friend who was very thin before she started using contraceptives, after she started taking contraceptive pills, she exploded [became fat], her breast became bigger and she became more beautiful. Immediately one of our other friends noticed that this girl’s physique changed because of the pills she [the first friend] was taking, she [the second friend] started taking her own pill to have big breast and fine body shape like our other friend [the first friend]” (Participant 8, FGD 3).

Most of the drugs or substances used as contraceptives were not medically prescribed, but self-identified as a contraceptive agent following certain inscriptions to the drug or substance, such as ‘do not use if pregnant’. One of the discussants narrated thus:

“There is this drug they call ‘Igodogoko Cleanser’ [a herbal mixture] that they say cleanses the body system. Whenever they are advertising the drug, they will say if you are pregnant don’t take it. So anytime I have sex or if I am feeling funny after having sex, I will just take it because I know it is not for pregnant people, and it works for me [helps her terminate any forming pregnancy]” (Participant 9, FGD 3).

3.2.3 Experiences with use of contraceptives

Majority of the discussants used the traditional contraceptive mixtures (especially mixture of alcohol with herbs, or with roots, or with spices such as garlic, ginger, turmeric and lime to prevent pregnancy, especially when they were single. However, after they got married, they resorted to use of the modern contraceptive methods. While some discussants complained of not getting complete sexual pleasure or satisfaction from the use of condom, others complained that the modern contraceptive methods they used failed them, ranging from bursting of condom during sexual intercourse with the spermatozoa spilling in and getting eggs fertilized, to women on intrauterine device (IUD) getting pregnant and giving birth to babies born wearing the device as ring on their wrist. Below is the narrative of one the discussants.

“There is this contraceptive device my mum did in the hospital that is like ring, but it wasn’t effective because the baby she used it for wore the ring and came out. The pregnancy the device was intended to prevent was successful and the baby was delivered putting on the ring” (Participant 2, FGD3)

While some discussants explained that their partners were excellent in the withdrawal method, others complained that the method failed them.

“This is my second pregnancy; the first one was four years ago. We were using the withdrawal method. My husband is more than an expert in withdrawal method. In fact, I was even praying that let mistake come but mistake said no until we agreed to have this baby. Once we agreed it entered” (Participant 8, FGD 4).

“My second pregnancy was a product of withdrawal method. My husband withdrew but it did not work” (Participant 2, FGD 2).

3.2.4 Risk of use of contraceptives

A number of risks were enumerated by discussants to be associated with the use of contraceptives. It was reported that contraceptive use may result in bleeding, difficulty in conceiving after completing the contraception plan (secondary infertility), especially among women who used implant method, irregular menstruation sometimes accompanied with heavy menstrual flow, change of the body system, affecting eating habit and sleeping pattern, high risk of infections, weight gain. A participant reported thus:

“.....when I took the implant, within my system, I was not free like before. I felt like there was a kind of disruption, like everything within me was not balanced. My sleeping method changed, my eating method changed, my appetite dropped. I monitored myself within the first 6 months into the contraception and found out that I was having infection, I was itching and smelling..... Another thing I noticed was that immediately the implant expired I started having heavy flow.....” (Participant 5, FGD 1).

3.2.5 Role of Culture and Religion in use of contraceptives

The participants unanimously reported not having any cultural practice preventing use of contraceptives, however, some reported having cultural practices that prevent women from terminating pregnancy. Others also reported having cultural practices that discourage promiscuity among the women, with death of children following such act from a woman.

“In my place we do not have any culture that prevents us from using contraceptives, but if you have already carried the pregnancy [got pregnant] you must give birth to it. If you try to remove it [terminate the pregnancy] you will die” (Participant 6, FGD 4).

Most participants reported not being members of any religious group that prevents the use of contraceptives, however, some participants reported knowing individuals who on religious grounds, do not accept or use contraceptives. One of the participants reported thus:

“I know of a woman that said she would not do [that is, not use contraceptives] because it is not in the Bible. She has 6 children and she said if she gets pregnant again, she would still give birth” (Participant 1, FGD 1).

Another discussant reported knowing a Christian religious denomination that is actually not against contraceptives, but against the withdrawal method, borrowing their faith from a story in the Bible.

“There is a story in the Bible that God killed a man for spilling the sperm instead of helping his brother to get children by sleeping with his wife. Some churches would tell you that if God could kill that man in the Bible, that means He is against spilling the sperm, which means you are not supposed to withdraw” (Participant 4, FGD 2).

Some discussants reported that some Christian religious groups misinterpret the portion of the Bible that says “Go into the world and multiply” to mean giving birth to as many children as they can, and hence do not subscribe to anything that would prevent them from giving birth to as many children as they can produce during their stay on earth. It was also noted from the discussions that some Christian religious denominations do not allow members to take drugs or any form of medication, but to pray over everything and have faith that their prayers have been answered.

3.2.6 Barriers to contraceptive use

The participants identified some factors that hinder women from using contraceptives.

3.2.6.1 Side effects of contraceptives: The numerous side effects that women who use contraceptives experience hinder them and other women around them from using contraceptives. The side effects complained about were alteration in menstrual cycle, heavy menstrual flow, difficulty in getting pregnant after terminating the contraceptive course, change in the physical structure of the woman especially the excessive weight gain associated with use of contraceptives. Some women also complained of experiencing raised blood pressure following use of contraceptives.

“This is my third pregnancy and I intend to go for family planning but I am afraid because people say e dey wori o [meaning it is problematic]. Some say during their cycle it was very heavy [heavy menstrual flow] and did not stop within 4-5 days, that it exceeded to 7 days. I also heard some people say it makes their tommy [abdomen] excessively big, while some people complain that the blood doesn’t come out at all [no menstrual flow during the period of contraceptive use], so that is the challenge I’m having now” (Participant 10, FGD 4).

3.2.6.2 Poor knowledge and misconception about contraceptives: Another frequently reported barrier to contraceptive use was poor knowledge about contraceptives and wrong information or misconception about contraceptives. While some women did not have knowledge about contraceptives, others who had heard about it got the wrong impression. Some heard and believed that the hormone used to produce contraceptive substances such as implants were gotten from pigs, and hence the reason women grow very fat after using such contraceptives, others believe that it is the leading cause of cancer among women, and some believe a woman may never be able to get pregnant again after using contraceptives.

“The first thing I heard [about contraceptives], is that this Implant, they said it is from pig. That they collected the hormone from pig, so that is why when it is inserted into a woman, it makes the woman to be fat like a pig” (Participant 4, FGD 1).

3.2.6.3 Search for a particular sex of child: Some women do not subscribe to contraceptive use because they are in search for a child of a particular sex. Hence, they keep on giving birth until they get that particular sex of the child that they need.

“There is this woman in my neighbourhood that has 8 girls. People have been advising her to go for family planning but she said no, that she will still give birth because she is looking for a male child. She is even pregnant again” (Participant 7, FGD 3).

3.2.6.4 Partner’s disapproval of contraceptive use: Concerns about husbands not giving consent for their wives to use contraceptives was also noted as another major barrier to use of contraceptives.

“After my third child I went to take family planning without my husband’s consent because I had been begging him for us to do it but he refused. When he found out he sent me out of his house. Immediately I called my dad and told him what the problem was, he encouraged me to come back home before he [my husband] kills me for him [my dad]..... It was our pastor and his dad I reported to that talked to him and calmed him down. This is my fourth and last pregnancy, and it is three years after the third”. (Participant 6, FGD 2).

3.2.6.5 Financial constraint: Some women complained of not having money to pay for contraception. Although, family planning services are announced to be free in all public health facilities approved to administer contraceptives, most women complained of still paying for the services most times if they are asked by the health workers who administer

the contraceptives to pay for the consumables which would be used for the administration process. Some women never even bothered to access the health facility for contraception because they had already assumed that the process would be expensive, or had been told by others that it is expensive to administer.

“.....yes we hear that family planning is free, but when you go there, they would still tell you to pay money” (Participant 2, FGD 2).

3.2.6.6 Religious Affiliation: While some religious groups encourage their members to go for family planning so as to give birth to the number of children they can take care of, others preach against the use of contraceptives, saying that those who use contraceptives disobey the commandment of God which says “go into the world and multiply”.

4. DISCUSSION

4.1 Reasons for use of contraceptives

The reason for use as gathered from the FGDs showed that the singles used it mostly to prevent unwanted pregnancy and STIs while most of the married women used it for child spacing. Interestingly, it was deduced from the FGDs that there was a high rate of use of traditional methods (withdrawal, unproven concomitant mixtures and herbs) while the discussants reported that they also used contraceptives to regularize irregular menstruation, prevent painful menstruation as well as for cosmetic values (weight gain and better body shape). Comparing these findings with that of other studies, Kaniki [14] reported that the reason behind contraceptive use for the respondents was for child spacing and avoiding unplanned pregnancy, while Ajayi et al. [15] stated that there was a high rate of use of traditional methods which they identified was due to their willingness to probe just as done in this present study. Dasgupta et al. [16] in Malawi also reported a common use of traditional methods (periodic abstinence and lactational amenorrhea) among their respondents.

Some of the women not using contraceptives had no reason, while others reported that their reason was due to desire for more children and fear of side effects. The report from the FGDs also revealed that fear due to past experiences deterred the women from contraceptive use. In previous studies, Eko et al. [17], Adeyemi et al. [13] did report that majority of their respondents who were not currently using contraceptives during the study did not have any reason for non-usage. In addition to this, there are several other reports showing other reasons behind non-utilization of contraception to include desire to conceive or have more children, fear of side-effects and harmful effects on health and husband/partner's disapproval [17-22]. The major factors that influenced the uptake of modern contraceptives among the respondents in this study were; religious inclination, disapproval by husbands, fear of health problems/side effects, and the urge to have more children, which is similar to what was discovered by Kaniki [14]. Also, Ajayi et al. [15] identified in their study that fear of side effects of modern contraceptives, postponement of contraceptive use and lack of access were among the reasons for non-use of contraceptives.

Furthermore, low usage of modern contraceptives among the women, especially without any reason can be linked to poor knowledge and negative attitude of the respondents towards contraceptive use, while its implication can vary from unwanted pregnancies, with its attendant consequences of illegal unsafe abortions, to population explosion [13,19,23]. Again, Curtis et al. [24] mentioned that fear of adverse effects and prior contraceptive experience were some of the causes for contraceptive non-use, while non-use of any kind (inadequate contraception usage, withdrawal, and contraceptive failure) is linked to an increased risk of unwanted pregnancy. Hence, Ajayi et al. [15] emphasised that appropriate information on the necessity and efficacy of each contraceptive technique, as well as its mechanism of action and side effects, is needed to enable women to make educated decisions and alleviate their concerns about contraceptive side effects.

4.2 Barriers to contraceptive use

The major barriers to contraceptive use among the women was fear of side effects while others included religion, poor knowledge and misconception about contraceptives, search for a particular sex of child, partner's disapproval and financial constraints. Similarly, Bishwajit et al.[25] and Campbell et al.[26] reported that poverty was significantly associated with unmet need as women from rich household were less likely to report unmet need for contraception. Furthermore, the findings from the studies of Batool and Sabahat [27] revealed that lack of spousal communication, religious beliefs, rural residence, concerns about infertility, side effects, poor access, lack of counselling and insufficient availability of modern methods were identified as significant factors that affect use of contraceptive methods. Also, the effect of religion as a barrier to contraceptive use has been backed by Kabir et al. [21] as they stated that the use of modern contraceptives as a birth control measure is not acceptable in the Catholic Church. Furthermore, According to Ajayi et al.[15] the high unmet need for contraception among rural respondents could be due to a high allocation of family planning resources favouring urban areas, while Alenoghena et al.[28] added that the influence of occupation on contraception uptake could be related to affordability and the resultant effect of occupation on individuals' socio-economic status.

In the area of fear of side effects, Otoide et al. [29] also stated that the women in their FGDs were not just concerned with the side effects of the contraceptives but the misinformation about the nature of these side effects. This is also similar to the position held by Gele et al. [30] which reported that lack of appropriate information about modern contraception was the main reason behind the notion held by many of their respondents that use of modern contraceptives was associated with cancer, vitamin deficiency and infertility. In other studies, partner's approval of contraception and discussion of family planning within the couple were found to be significantly associated with non-use of contraceptives [31].

5. CONCLUSION

The findings from this study have shown that many of the respondents used traditional methods of contraception (withdrawal, unproven concomitant mixtures and herbs), while the main reasons for use

of contraceptives were to avoid unwanted pregnancy, sexually transmitted infections and for child spacing, as well as to regularize irregular menstruation, prevent painful menstruation and for better body shape. Also, the barriers to contraceptive use were identified as religion, perceived side effects, misconceptions about contraceptives, preference for a particular sex of child, partner's rejection, and financial constraints. Hence, efforts should be intensified towards enlightening the populace on the types, uses and benefits of modern contraceptives. There is also need to make contraceptives more affordable and accessible to all who desire it.

Ethical Consideration

The Ethics committee of the University of Port Harcourt gave approval for the study. Informed written consent was sought from the recruited pregnant women before the Focus Group Discussions were held.

UNDER PEER REVIEW

REFERENCES

1. Handady SO, Naseralla K, Sakin HH, Alawad AAM. Knowledge, attitude and practice of family planning among married women attending primary health center in Sudan. *International Journal of Public Health Research*. 2015;3(5):243 – 247.
2. Akinwale DO, Okafor AN, Akinbade OM, Ojo CI. Determinants of Modern Contraceptives Utilization among Women of Reproductive Age in Rural Community, Osun State, Nigeria. *International Journal of Caring Sciences*. 2020;13(2):1173–1182
3. Wang W, Staveteig S, Winter R, Allen C. Women's marital status, contraceptive use, and unmet need in sub-Saharan Africa, Latin America and the Caribbean. Rockville, Maryland, USA: ICF. 2017. DHS Comparative Report. Pp. 44.
4. Obwoya JG, Wulifan JK, Kalolo A. Factors influencing contraceptive use among women in the Juba city of South Sudan. *International Journal of Population Research*. 2018:1 – 7.
5. World Health Organisation (2019). Contraception: evidence brief, Department of Reproductive Health and Research. World Health Organisation, Geneva: Switzerland
6. Yaya S, Ghose B. Prevalence of unmet need for contraception and its association with unwanted pregnancy among married women in Angola. *PLoS ONE*. 2018;13(12): e0209801. <https://doi.org/10.1371/journal.pone.0209801>.
7. Grindlay K, Dako-Gyeke P, Ngo TD, Eva G, Gobah L, Reiger ST, Chandrasekaran S, Blanchard K. Contraceptive use and unintended pregnancy among young women and men in Accra, Ghana. *PLOS ONE*. 2018;13(8): e0201663. Doi: 10.1371/journal.pone.0201663
8. Wang C, Cao H. Persisting regional disparities in modern contraceptive use and unmet need for contraception among Nigerian women. *BioMed Research International*. 2019;2019:1–9
9. United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Family Planning 2017 - Highlights (ST/ESA/SER.A/414)*. New York: USA.
10. Singh S, Sedgh G, Hussain R. Unintended pregnancy: Worldwide levels, trends, and outcomes. *Studies in Family Planning*. 2010;41(4):241–250. Doi: 10.1111/j.1728-4465.2010.00250.x
11. Frini HO, Nabag WOM. The knowledge and determinant factors of contraceptive use among married Sudanese Women. *App Sci Report*. 2013;4(3):247–51.
12. Saluja N, Sharma S, Choudhary S, Gaur D, Pandey S. Contraceptive knowledge, attitude and practice among eligible couples of rural Haryana. *Internet Journal of Health*. 2001;12(1):1-6.
13. Adeyemi AS, Olugbenga-Bello AI, Adeoye OA, Salawu MO, Aderinoye AA, Agbaje MA. Contraceptive prevalence and determinants among women of reproductive age group in Ogbomoso, Oyo State, Nigeria. *Open Access Journal of Contraception*. 2016; 7:33 – 41
14. Kaniki FR. Factors influencing the use of modern contraceptive methods among rural women of child bearing age in the Democratic Republic of the Congo. *Journal of Family Medicine and Primary Care*. 2019;8(8):2582-2586.
15. Ajayi AI, Adeniyi OV, Akpan W. Maternal health care visits as predictors of contraceptive use among childbearing women in a medically underserved state in Nigeria. *Journal of Health, Population and Nutrition*. 2018;37(1):19
16. Dasgupta AN, Zaba B, Crampin AC. Postpartum uptake of contraception in rural northern Malawi: a prospective study. *Contraception*, 2016;94(5):499–504
17. Eko JE, Osonwa KO, Osuchukwu NC, Offiong DA. Prevalence of contraceptive use among women of reproductive age in Calabar Metropolis, Southern Nigeria. *International Journal of Humanity and Social Science Invention*. 2013;2:27–34.
18. Umoh AV, Abah MG. Contraception awareness and practice among antenatal attendees in Uyo, Nigeria. *Pan African Medical Journal*. 2011;10:53.
19. Asekun-Olarinmoye, EO, Adebimpe WO, Bamidele JO, Odu OO, Asekun-Olarinmoye IO, Ojofeitimi EO. Barriers to use of modern contraceptives among women in an inner city area of Osogbo metropolis, Osun State, Nigeria. *International Journal of Womens Health*. 2013;5:647–655
20. Ajong AB, Njotang PN, Yakum MN, Essi MJ, Essiben F, Eko FE, et al. Determinants of unmet need for family planning among women in urban cameroon: A Cross Sectional Survey in the biyem-assi health district, yaoundé. *BMC Women's Health*. 2016;16(1).4. Doi: 10.1186/s12905-016-0283-9
21. Kabir AD, Lukman OO, Olusegun E. Barriers to Contraceptive Uptake among Women of Reproductive Age in a Semi-Urban Community of Ekiti State, Southwest Nigeria. *Ethiopian Journal of Health Sciences*, 2017;27(2):121–128

22. Chatterjee S, Bangal VB. Awareness and acceptability of contraceptive methods amongst antenatal patients attending antenatal care clinic at Pravara Rural Hospital (PRH) Loni. *Pravara Med Rev.* 2020;12(04):97–105.
23. Sedgh G, Bankole A, Oye-Adeniran B, Adewole IF, Singh S, Hussain R. Unwanted pregnancy and associated factors among Nigerian women. *International Family Planning Perspective.* 2006;32:175–184.
24. Curtis S, Evens E, Sambisa W. Contraceptive discontinuation and unintended pregnancy: an imperfect relationship. *Int Perspect Sex Reprod Health.* 2011;37(2):58–66.
25. Bishwajit G, Tang S, Yaya S, Feng Z. Unmet need for contraception and its association with unintended pregnancy in Bangladesh. *BMC Pregnancy and Childbirth.* 2017;17(1). Doi: 10.1186/s12884-017-1379-4
26. Campbell MM, Prata N, Potts M. The impact of freedom on fertility decline. *Journal of Family Planning and Reproductive Health Care.* 2013;39(1):44–50. Doi: 10.1136/jfprhc-2012-100405
27. Batool Z, Sabahat H. Reasons for low modern contraceptive use, insights from Pakistan and neighbouring countries. (2015). Available at: http://www.popcouncil.org/uploads/pdfs/2015RH_LitReview-RAF.pdf. Accessed on December, 2020
28. Alenoghena I, Yerumoh S, Momoh MA. Knowledge, attitude and uptake of family planning services among women of reproductive age group attending outpatient clinic at a tertiary health institution in Edo State, Nigeria. *Journal of Public Health and Epidemiology.* 2019;11(3):63–70.
29. Otoide VO, Oronsanye F, Okonofua FE. Why Nigerian adolescents seek abortion rather than contraception: Evidence from focus group discussions. *International Family Planning Perspective.* 2001;27(2):77–81.
30. Gele AA, Musse FK, Shrestha M, Qureshi S. Barriers and facilitators to contraceptive use among Somali immigrant women in Oslo: A qualitative study. *PLoS ONE,* 2020;15(3):e0229916. Doi: <https://doi.org/10.1371/journal.pone.0229916>
31. Adewole IF, Oye-Adeniran BA, Iwere N, Oladokun O, Gbadegesin A, Babarinsa AI. Contraceptive usage among abortion seekers in Nigeria. *West African Journal of Medicine.* 2002;21(2):112–114.