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Pattern And Trend of Contraceptive Use among Female Attendees of Family Planning Clinic in UNIOSUN Teaching Hospital, Osogbo - A Retrospective Study

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ABSTRACT

Background: Contraceptive use is critical for reducing unintended pregnancies and maternal mortality. Despite global advancements, access remains limited in regions like Western Africa. **Objective:** This study aimed to examine the patterns and trends of contraceptive use among female attendees at the family planning clinic of UNIOSUN Teaching Hospital, Osogbo, Nigeria.

Methods: A retrospective study was conducted from January 2019 to December 2021, analysing records of 652 clients. Data on sociodemographic, contraceptive methods, and information sources were extracted and analysed using IBM SPSS version 25.0.

Results: The contraceptive prevalence rate was 29.8%. Most clients were aged 31–40 years (52.9%), married (98.6%) and had secondary or tertiary education (92%). Implants were the most preferred method (46.3%), followed by intrauterine devices (38.3%). Clinic personnel were the primary information source (82.4%). Significant associations were found between contraceptive choice and age of the respondents, education, marital status, and parity ($p<0.05$). The use of implants increased from 36.2% in 2019 to 52.0% in 2021, while the use of intrauterine devices declined.

Conclusion: Implants were the dominant contraceptive choice, with healthcare providers playing a key role in information dissemination. Sociodemographic factors significantly influenced method of selection. Efforts to enhance adolescent education and media engagement are needed to improve contraceptive uptake.

Keywords: Contraceptive use, Family planning, Implants, Sociodemographic factors, Nigeria.

INTRODUCTION

Contraception is the prevention of pregnancy by methods other than abstinence from coitus [1]. In the last two decades, the percentage of women accessing contraceptives in both developed and developing countries has increased. The United Nations Population Fund reports that in 2019, 63% of women aged 15 to 49 were using some form of contraception method, and 58% were using a modern contraception method [2]. Despite these advancements, millions of women continue to lack access to modern contraceptives. Today, an estimated 885 million women in developing regions want to prevent pregnancy. Three-quarters of these women use a modern method of contraception; however, one quarter—214 million—have an unmet need for contraception [3]. While contraceptive use is above 70% in Europe, Latin America and the Caribbean, and North America, it is below 25% per cent in Middle and Western Africa [4].

Nigeria has the largest population in Africa. The United Nations projects that the overall population of Nigeria will reach approximately 401.31 million by the end of 2050. By 2100, if current figures continue, the population of Nigeria will be over 728 million [5]. The birth rate in Nigeria is about 37 births per 1,000 people, while the current fertility rate for Nigeria in 2022 is 5.144 births per woman [5]. The major contributors to Nigeria's population growth are early marriages, high birth rates, and a lack of family planning access [5]. The contraceptive uptake rate in Nigeria is approximately 11- 17% according to **Iseoluwa** [6]. This rate is very low despite a high rate and widespread awareness of various methods of contraceptives among Nigerians. It is due to social, economic, cultural and religious factors tending towards a large family [7-10].

Family planning serves three critical needs: It helps couples avoid unintended pregnancies, it reduces the spread of sexually transmitted diseases (STDs), and by addressing the problem of STDs, it helps reduce rates of infertility [11]. Spacing births offered by family planning gives room for healthier pregnancies, thus decreasing risks of maternal morbidity, foetal prematurity and low birth weight. A study by **Cleland *et al.*** [12] has estimated that contraception can reduce up to 32% maternal death and 10% childhood mortality if readily available. It is estimated that there are 22 million unsafe abortions each year, approximately 47,000 deaths from unsafe abortion, and 5 million women suffer injury/disability from unsafe abortion. These are preventable through contraception and, as a back-up, access to safe abortion [13].

Basically, there are two major methods of family planning: The traditional and modern methods [14]. The traditional methods of contraception include the lactational amenorrhea method, coitus interruptus (withdrawal method), calendar method or rhythm method, cervical mucus method and abstinence [15, 16]. Examples of modern contraceptive methods commonly used include female and male sterilisation, oral hormonal pills,

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intrauterine device, male condom, injectables, implant, vaginal barrier methods, female condom, and emergency contraception [14–17].

Birth control methods are designed to prevent conception or interrupt or nullify implantation and growth. Conception can be prevented by hormonally disrupting the menstrual cycle (Oral contraceptive (OC) pills), by physically blocking the passageway (barrier methods or sterilisation), or, less successfully, by abstinence during fertile periods or the withdrawal method. Implantation is impaired via the use of a foreign body (intrauterine device {IUD}) or surgical removal (Salpingectomy or Vasectomy). The most effective methods of contraception are the long-acting reversible methods of contraception (LARC) – or so-called 'fit and forget methods' such as the copper intrauterine device (Cu-IUD), levonorgestrel intrauterine system (LNG-IUS) and progestogen-only implant [13, 15]. LARC have been defined as a method that requires administration less than once per month [15].

Hormonal methods of contraception, in particular, have several specific noncontraceptive benefits. When used to manage a medical problem, the risk–benefit ratio changes. The 52-mg LNG-IUS is highly effective for heavy menstrual bleeding and more cost-effective than other medical therapies and endometrial ablation. It reduces the pain of endometriosis and adenomyosis and protects against unopposed oestrogen, and evidence also suggests it prevents and causes regression of endometrial hyperplasia and protects the endometrium against the effects of tamoxifen (amongst women with breast cancer). The 13.5-mg LNG-IUS is not licensed for treatment of heavy menstrual bleeding, but does reduce menstrual bleeding and amenorrhoea rates improve with time according to a study conducted by **Schindler** [18]. COC pills can help with bleeding, acne and hirsutism, and symptoms of premenstrual syndrome. DMPA is effective in managing the symptoms of endometriosis and, given the high incidence of amenorrhoea, is also used for heavy menstrual bleeding [19]. Hormonal contraception protects against certain gynaecological cancers, the most important being the significant reduction in ovarian and endometrial cancer with the use of the COC pill. DMPA confers a high degree of protection against endometrial carcinoma and should theoretically also protect against ovarian cancer[18, 19].

Many factors determine the method of contraception an individual chooses. These include age, fertility intentions, perceptions of effectiveness and safety, familiarity and experience of others, ease of use, and non-contraceptive benefits [16]. A woman's choice of contraception is just as likely to be based upon information from media, friends and family, as from a health care professional [8, 9, 15]. Women should be given accurate information about all methods for which they are medically eligible. Studies show that women welcome information in an audio-visual format (DVD, tablet & phone app) and that this may enhance uptake of the most effective methods [13, 20, 21]. Family planning in many parts of Nigeria is influenced by cultural and religious beliefs [22]. The low contraceptive prevalence in Nigeria has been attributed to poverty, ignorance, low educational level, and desire for large family size, poor access to contraceptive services, community pressure, male or husband dominance, and religious beliefs [8, 9, 22, 23].

There is currently a lack of studies on the pattern and trend of contraceptive choices among female attendees of the family planning clinic in UNIOSUN teaching hospital, Osogbo. It is therefore imperative to conduct this retrospective study. This study aimed to examine the patterns and trends of contraceptive use among female clients attending The Family Planning Clinic at UNIOSUN Teaching Hospital. Specifically, it seeks to explore the sociodemographic characteristics of these clients, identify their primary sources of information regarding contraceptive methods, and assess the uptake rates of different types of contraceptives. This study also aimed to evaluate the yearly trends in contraceptive use over time to provide insights into the dynamics of family planning service utilisation in this setting.

MATERIALS AND METHODS

Study area: The study area is Osogbo, the capital city of Osun State, which is between latitude $7_o46^{\prime\prime}$ N, longitude $4_o34^{\prime\prime}$ E and 7.767_oN, 4.567_oE with an area of 47kmsq. Osogbo has two local government areas (Osogbo and Olorunda Local Governments). Based on the 2015 estimation, the population of Osogbo is 649,000 people. Osogbo is the home of art and culture in the Yoruba traditional history. Most inhabitants of the town are Artisans, farmers or Civil Servants.

Study location: The study was carried out in UNIOSUN Teaching Hospital, Osogbo, Osun State, South-west, Nigeria. Osogbo is the state capital, located in the South-western region of the country. It is made up of two local governments, Olorunda and Osogbo local governments.

Study design: This is a retrospective study conducted at UNIOSUN Teaching Hospital, Osogbo, Nigeria, between January 1, 2019 and December 31, 2021.

Study Population: Female attendees of The Family Planning Clinic of UNIOSUN Teaching Hospital, Osogbo, within the study period.

Data collection method: The record cards of all the clients who took the available contraceptives between 1st January 2019 and 31st December 2021 were retrieved and studied. The information extracted from the cards included the socio-demographic characteristics of the clients, source of information concerning contraception, types of contraceptives chosen and breastfeeding status of

the clients. The data was analysed with the IBM SPSS version 25.0 (Armonk, NY) using frequency counts and percentages.

RESULTS

A total of 652 clients attending The Family Planning Clinic during the study period were analysed. There were 2,184 deliveries over the study period, giving a contraceptive prevalence rate of 29.8%.

The sociodemographic characteristics of contraceptive users attending The Family Planning Clinic were presented in table (1). The age distribution of the clients ranged from 16 to 50 years, with a mean age of 33.64 ± 6.00 years. The majority of clients (52.9%) were aged 31–40 years, followed by those aged 21–30 years (33.0%). Only a small proportion (0.6%) were teenagers (≤ 20 years). Educational attainment varied among respondents, with nearly half (46.3%) had a tertiary education and 45.7% had secondary education. A smaller proportion had primary education (6.9%) or no formal education (1.1%). Religiously, Christianity was the most common affiliation (66.7%), followed by Islam (29.8%) and traditional religion (3.5%). Marital status data revealed that the overwhelming majority of clients were married (98.6%), while only 1.4% were single. Parity distribution indicated that most clients (76.1%) had 2–4 previous deliveries, whereas 16.4% were primiparous, 6.1% were grand multiparous (≥ 5 deliveries), and a small fraction (1.4%) were nulliparous (Table 1).

Table (1): Socio-demographic data of the Respondents (N=652)

	Variable	Frequency	Percentage
Age group	≤ 20 yrs	4	0.6
	21-30 yrs	215	33.0
	31-40 yrs	345	52.9
	41-50 yrs	88	13.5
	Mean ± SD	33.64±6.00	
Religion	Christianity	435	66.7
	Islam	194	29.8
	Traditional	23	3.5
Educational Level	No formal education	7	1.1
	Primary	45	6.9
	Secondary	298	45.7
	Tertiary	302	46.3
Marital Status	Married	643	98.6
	Single	9	1.4
Parity	None	9	1.4
	1	107	16.4
	2-4	496	76.1
	≥5	40	6.1

Table (2) showed the sources of information for all the contraceptives chosen by the clients. The majority of the respondents (82.4%) obtained the information from clinic personnel, followed by friends or relatives (11.1%).

A smaller proportion of respondents reported receiving information from radio/television (3.5%) or print media (1.8%), while a minimal fraction (1.2%) cited other unspecified sources. These findings underscore the crucial role of healthcare providers in disseminating family planning knowledge to clients in this setting.

Table (2): Sources of Information of the Respondents on Contraceptives

Sources of Information	No. of Clients	Frequency
Clinic Personnel	537	82.4
Friend /Relatives	72	11.1
Radio/Television	23	3.5
Print media	12	1.8
Others	8	1.2

Figure (1) showed the frequency of contraceptive use over the study period. The number of users of contraceptives in The Family Planning Clinic increased over the study period, from 207 in 2019 to 248 users in 2021, though there was a slight decrease in 2020 with 197 users.

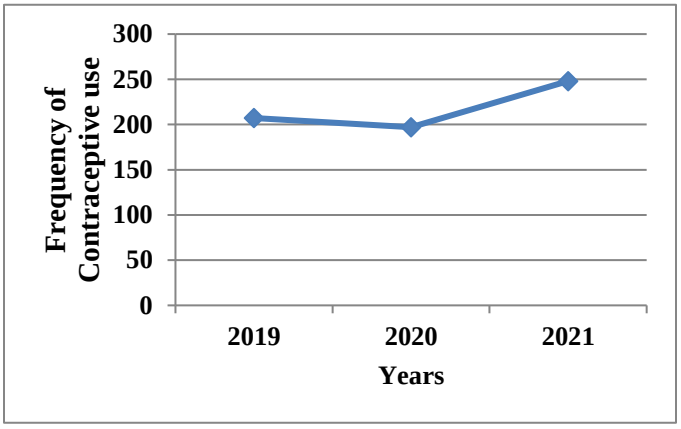

Figure (1): Frequency of contraceptive use over the study period.

Table (3) showed the different types of contraceptives used by the clients and the frequency of use. The analysis of contraceptive preferences revealed that implants were the most frequently used method (46.3%), followed closely by intrauterine contraceptive devices (IUCDs) (38.3%). Injectable contraceptives accounted for 12.0% of users, while oral contraceptive pills (2.1%) and condoms (1.2%) were the least commonly utilised methods among the study population.

Table (3): Prevalence of contraceptive methods among family planning (N=652)

Contraceptives	**No. of Users**	**Percentage**
Condom	8	1.2
Implant	302	46.3
Injectable	78	12.0
IUCD	250	38.3
OCP	14	2.1

In table (4), the yearly trend of contraceptive methods utilised by the clients was presented. Implants demonstrated consistent growth in utilisation, increasing from 36.2% in 2019 to 52.0% in 2021, maintaining their position as the most frequently chosen method each year. Conversely, IUCD use declined from 43.0% to 31.0% during the same period.

Injectable contraceptives showed variable patterns, decreasing sharply in 2020 (5.1%) before partially rebounding in 2021 (13.3%). Less common methods, including oral contraceptive pills and condoms, collectively accounted for less than 5% of utilisation annually, though condom use demonstrated a gradual increase from 0.5% to 2.0%.

Table (4): Yearly trend of contraceptive method utilisation

Variable	2019	2020	2021	X^2 value	p-value
Condom	1(0.5)	2(1.0)	5 (2.0)		
Implant	75(36.2)	98(49.7)	129 (52.0)		
Injectable	35(16.9)	10(5.1)	33 (13.3)	29.180	**0.001***
IUCD	89(43.0)	84(42.6)	77 (31. 0)		
OCP	7(3.4)	3(1.5)	4 (1.6)		

*Statistically significant

The association between the clients' preferred contraceptive method and their socio-demographic characteristics was shown in table (5) where significant associations were observed. Age emerged as an important determinant, with implants (51.7%) and IUCDs (54.0%) being predominantly chosen by women aged 31-40 years, while younger women (21-30 years) showed greater preference for condoms (62.5%) and oral contraceptive pills (57.1%), and this was statistically significant (p=0.013). Educational attainment similarly influenced method selection, as tertiary-educated clients more frequently opted for condoms (75.0%) and implants (50.0%), whereas secondary-educated women demonstrated higher use of injectables (46.2%) and IUCDs (54.0%). Marital status showed striking patterns, with nearly all married women selecting provider-dependent methods, including implants (98.3%), IUCDs (99.6%), and injectables (100%), while single women were more likely to use condoms (25.0%) or oral pills (7.1%). Parity also significantly affected contraceptive choices, as women with 2-4 children overwhelmingly preferred implants (77.8%), IUCDs (75.6%), and injectables (75.6%), whereas grand multiparous women (≥5 children) tended to select injectables (14.9%) and IUCDs (7.2%). These associations were also found to be statistically significant (p<0.001) (Table 5).

Table (5): Association between the clients' preferred contraceptive method and their socio-demographic characteristics

Variable	Condom	Implant	Injectable	IUCD	OCP	X^2 value	p-value
Age group							
≤ 20 yrs	0 (0.0)	4(1.3)	0 (0.0)	0 (0.0)	0 (0.0)		
21-30 yrs	5 (62.5)	113 (37.4)	19 (14.4)	70 (28.0)	8 (57.1)		
31-40 yrs	2 (25.0)	156 (51.7)	47 (60.3)	135 (54.0)	5 (35.7)	25.352	**0.013***
41-50 yrs	1 (12.5)	29 (9.6)	12 (9.6)	45 (18.0)	1 (7.2)		
Religion							
Christianity	6 (75.0)	197 (65.2)	49 (62.8)	172 (68.8)	11 (78.6)		
Islam	2 (25.0)	96 (31.8)	26 (33.3)	67 (26.8)	3 (21.4)	4.278	0.830
Traditional	0 (0.0)	9 (3.0)	3 (3.8)	11 (4.4)	0 (0.0)		
Educational Level							
No formal education	0 (0.0)	4 (1.3)	2 (2.6)	1 (0.4)	0 (0.0)		
Primary	1 (12.5)	27 (8.9)	9 (11.5)	8 (3.2)	0 (0.0)		
Secondary	1 (12.5)	120 (39.7)	36 (46.2)	135 (54.0)	6 (42.9)	25.917	**0.001***
Tertiary	6 (75.0)	151 (50.0)	31 (39.7)	106 (42.4)	8 (57.1)		
Marital Status							
Married	6 (75.0)	297 (98.3)	79 (100.0)	249 (99.6)	13 (92.9)		
Single	2 (25.0)	5 (1.7)	0 (0.0)	1 (0.4)	1 (7.1)	39.225	**0.001***
Parity							
None	1 (12.5)	5 (1.7)	1 (1.3)	1 (0.4)	1 (7.1)		
1	3 (37.5)	51 (16.9)	7 (9.0)	42 (16.8)	4 (28.6)	32.610	**0.001***
2-4	4 (50.0)	235 (77.8)	59 (75.6)	189 (75.6)	9 (64.3)		
≥5	0 (0.0)	11 (3.5)	11 (14.9)	18 (7.2)	0 (0.0)		

*Statistically significant.

Table (6) showed the assessment of the relationship between sociodemographic characteristics and contraceptive use across the three-year study period (2019–2021), which revealed no statistically significant temporal trends. The age distribution of clients remained relatively stable, with the majority (52.0–54.1%) consistently comprising women aged 31–40 years, while adolescents (≤ 20 years) represented less than 1% of users annually. Similarly, religious affiliation showed minimal variation, with Christians maintaining a steady majority (66.1–67.5%), followed by Muslims (28.4–31.9%) and traditional religion adherents (2.0–4.8%). Educational attainment patterns demonstrated a non-significant shift toward higher education over time, as the proportion of clients with tertiary education increased from 42.5% in 2019 to 54.9% in 2021, while those with secondary education or less declined correspondingly (χ^2=11.529, p=0.073). Marital status distribution was remarkably consistent, with married women constituting over 98% of clients each year.

Table (6): Relationship between the Socio-demographic Data and usage year of contraceptives

Variable	2019	2020	2021	X^2 value	p-value
Age group					
≤ 20yrs	2(1.0)	1(0.5)	1(0.4)		
21-30yrs	68(32.9)	67(34.0)	80(32.3)	1.848	0.933
31-40yrs	112(54.1)	104(52.8)	129(52.0)		
≥50yrs	25(12.1)	25(12.7)	38(15.3)		
Religion					
Christianity	138(66.7)	133(67.5)	164(66.1)		
Islam	59(28.5)	56(28.4)	79(31.9)	3.3.87	0.495
Traditional	10(4.8)	8(4.1)	5(2.0)		
Educational Level					
No formal education	3(1.4)	2(1.0)	2(0.8)		
Primary	17(8.2)	15(7.6)	13(5.2)		
Secondary	99(47.8)	101(51.3)	98(39.5)	11.529	0.073
Tertiary	88(42.5)	79(40.1)	135(54.9)		
Marital Status					
Married	203(98.1)	193(98.0)	247(99.6)	2.814	0.245
Single	4(1.9)	4(2.0)	1(0.4)		

This finding revealed that nearly half (45.9%, n=299) of clients were lactating at the time of initiating family planning methods, while the majority (54.1%, n=353) had either discontinued breastfeeding or were not lactating (Table 7).

Table (7): Prevalence of breastfeeding mothers using contraceptives

Breastfeeding	No. of Clients	Frequency
Yes	299	45.9
No	353	54.1

Figure (2) showed the distribution of respondents on breastfeeding level within the period of the study. Annually, a greater proportion of clients-initiated family planning methods during non-breastfeeding periods, with 110 (2019), 109 (2020), and 134 (2021) non-lactating users respectively. Conversely, breastfeeding women utilising contraceptives numbered 97 (2019), 88 (2020), and 114 (2021).

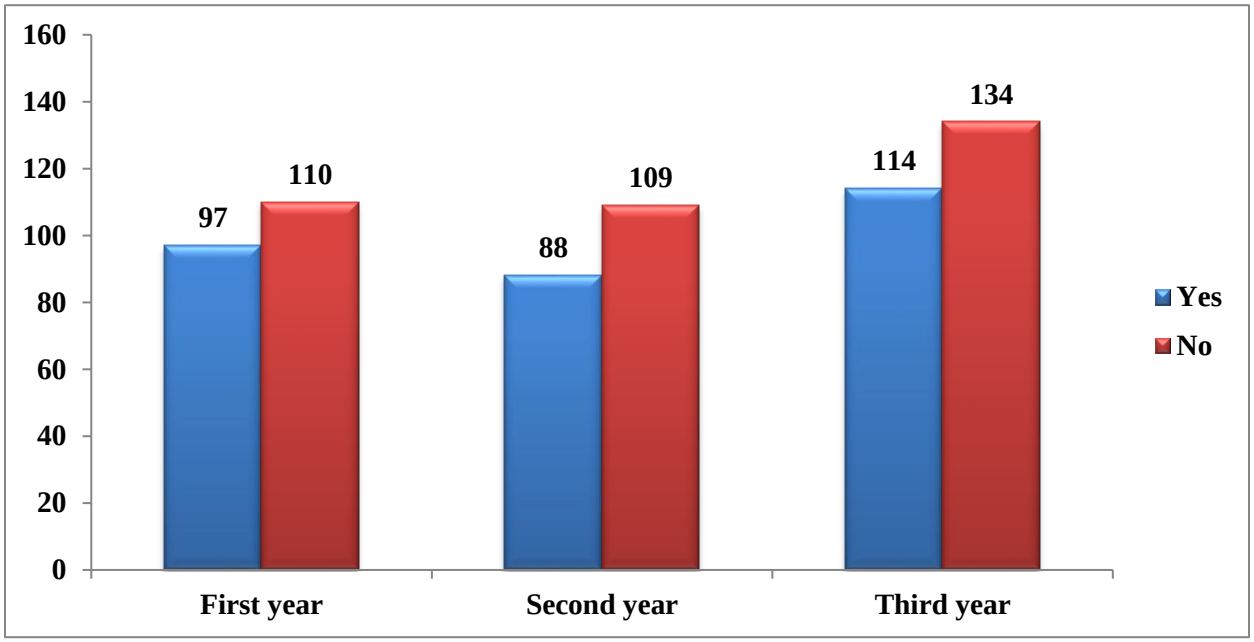

Figure (2): Distribution of respondents on breastfeeding level within the period of the study.

DISCUSSION

The age range of the clients was between 16 and 50 years, and the mean age was 33.64 years, which is similar to the previous studies carried out in Port Harcourt and Lagos [10, 24] where their respondents' age range was in a similar category. The majority of the clients were between 31-40 years, while only 4 teenagers were users of contraceptives during the study period, similar to findings in studies done in Port Harcourt and Ilorin, but lower than figures found in studies done in Makurdi, Kano and Nassarawa state, Nigeria [9, 25–27]. The low prevalence of contraceptive uptake among teenagers in this study is a worrisome issue, as studies have shown that more than 70% of youths in our environment become sexually active before the age of 17 years, **Eyitope *et al.*** [28]. Also, more than half (55%) of unintended pregnancies among adolescent girls aged 15–19 years end in abortions, which are often unsafe [29]. Therefore, it is imperative to encourage teenagers to seek contraception.

The majority of the women (92%) had at least a secondary level of education which is similar to other studies [9, 10, 24]. Education empowers women to make informed choices about their reproductive health and also exposes them to various options and benefits of family planning. The majority of the women (82.0%) had at least 2 parous experiences, while nulliparae were the least. This is similar to findings in other studies [9, 10, 24]. This finding indicates that the majority of women do not begin to use contraception until they have had at least one child, and many use it with the mindset that they have completed their family size. The majority of the clients in this study were married (98.6%) as in accordance with most other studies [9, 10, 24, 27]. This implies that married women tend to seek family planning methods, and the reason for this might be based on the increasing challenges of raising children and the need to reduce their family sizes. Christianity was the most predominant religion of clients in this study (66.7%), which is similar to studies done in Lagos, Port Harcourt and Enugu, which are southern states [9, 10, 30]. This also shows that the practice of contraception is more accepted among Christians than Muslims.

Sa`adatu *et al.* [31] had reported that this might be due to misconceptions by some that contraception is un-Islamic.

The institutional contraceptive prevalence rate in this study was 29.8%, which is similar to the 29% and 31.8% prevalence rates that were found in the studies done in Ikeji Arakeji in Osun state and Kano state respectively, but higher than 22.8% and 13.8% in studies done in Port Harcourt and Ilorin, respectively [24–26, 32, 33]. The contraceptive prevalence rate is related to the maternal mortality rate, and it has been shown that countries with a low prevalence of contraception have high maternal mortality rates [24].

In the study, there was a significant association between age, educational level, marital status, parity and the preferred types of contraceptive use, which is similar to a study done in Makurdi [23], which reported significant associations in the association between respondents' sociodemographic characteristics and contraceptive use. In addition, the Nepal Demographic and Health Survey analysis directly links education differentials between spouses to contraceptive method choice, reinforcing how sociodemographic factors shape reproductive decisions. The mechanisms observed in Nepal and Pakistan (e.g.,

education-driven autonomy, parity-linked demand) offer plausible explanations for similar findings globally[34,35].

The most common source of information about contraception was clinic personnel (82.4%), which was similar to studies done in Port Harcourt and Lagos, but in contrast to studies done in Abakaliki and a rural community in Osun state, where friends were the commonest source of information [9, 10, 24]. Most antenatal care and deliveries are taken by clinic personnel, which included doctors and nurses, therefore they influence the passing on of knowledge of contraception to their clients. This understandably may be responsible for clinic personnel being the highest source of information in this study. The next common source of information in this study was friends/relatives who might have also used contraceptive methods and can easily convince others who have not yet done so. The radio, television, print media and other sources of information still need to be well engaged in passing information about family planning to increase the contraceptive prevalence rate.

The most commonly used contraceptive method over the study period was the implant (46.3%), which is similar to a study done in Lagos, Makurdi, and Sokoto [10, 27]. But, in contrast to similar studies done in Port Harcourt and Ilorin, where IUCD and injectables were the most preferred contraceptive methods, respectively [9]. Condoms and oral contraceptive pills (OCPs) were the least used contraceptives in this study. This might be because, condom and OCPs can easily be gotten over–the–counter and are self-administered, therefore people do not necessarily come to the family planning clinic to obtain them. There is also poor record-keeping on the condoms given out in the family planning clinic during the study period, as most clients who got only a condom did not open a record card. The use of implants increased over the study period, while there was a downward trend in the use of IUCD. The reason for this might be an increase in awareness of the availability of the Jadelle implant in the family planning clinic, increased preference of users for the implant and partly due to preference of contraceptive providers in the family planning clinic. Overall, there was a decrease in the frequency of contraceptive use per year in 2020, which was due to the COVID-19 pandemic, as there were times when the clinic was not open. However, there was a significant increase in the number of contraceptive users at the end of the study period. This showed that there was an increase in awareness about family planning.

CONCLUSION

The most preferred method of contraception in this study was the implant, which also experienced an upward trend in its use over the study period. Clinic personnel were the most common source of information about contraceptives. Age, parity, educational level and marital status appear to have a significant association with choice of contraceptive method. There is a need to sensitise adolescents more about contraception, especially the sexually active ones. There is also a need to make more use of radio, television, and print media to sensitise the public to the importance and various methods of family planning.

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