*Utilization Patterns of Long and Short-Acting Modern Contraceptives Among Women Seeking Family Planning Services in a Niger Delta Cottage Hospital: A Retrospective Study*

**Abstract**

**Background:** The use of modern contraceptive devices is a proven cost-effective method for Family planning (FP) and for preventing pregnancy. This study examines the utilization pattern for Short-acting Reversible contraceptives (SARC) and Long-Acting Reversible Contraceptive (LARC) among women who sought FP services at the Obio Cottage Hospital, Port Harcourt, South-South, Nigeria

**Method**: This was a cross-sectional review of the records of 2499 clients who accessed family planning services at Obio Cottage Hospital between June 2021 and May 2023. A proforma was developed and used to extract the required information from the family planning records. The data obtained were analysed using SPSS Windows Version 25. Descriptive analysis was done for relevant variables and Chi-Square was used to test for associations. The level of significance was set at p < 0.05

**Result:** The mean age of FP uptake was 34.21+5.7. Most of the clients were multiparous women who preferred LARC (67.5%). Two fifth of the clients (1013) demanded for the hormonal implants, while 675 (27%) preferred IUCD, 259 (10.4%) Sayana Press, 187(7.5%) male condoms, 164 (6.6%) combine oral contraceptives, 133 (5.3%) and Depo Provera and 64 (2.6%) Noristerat. Only 7 (0.3%) adolescents accessed the FP services while just 48 (1.98%) of the clients had a postpartum family planning service. There was a statistically significant association between the parity of the clients and preference for SARC or LARC (X2 =25.36, p=0.001).

**Conclusion/ Recommendation**: The LARCs- hormonal implants and IUCD were the most preferred FP method, and mainly utilized by multiparous women. There were low adolescent and post-partum FP services. There is a need to increase access to these services at this cottage Hospital.

**Key words-** LARC, SARC, Implant, IUCD, Contraceptive, SPSS Windows, multiparous women

**Introduction**

The use of modern contraceptive devices is a proven cost -effective method for child spacing and Family planning.1 This reliable public health measures are quintessential especially in middle to low- income countries with limited resources.2. There are many different types of contraception, but not all types are appropriate for all situations. The most appropriate method of family planning depends on an individual's overall health, age, frequency of sexual activity, number of sexual partners, desire to have children in the future, and family history of certain diseases such as hypertension, diabetes, venous thromboembolism, cerebrovascular accidents including smokers and those above the age of 35 years.3

Long-acting reversible contraceptives (LARCs) are a type of modern contraceptive devices that provide effective and convenient contraception for an extended period of time. Unlike short-acting methods like pills, patches, or condoms, some LARCs can last between 3 to 10 years, and there are LARCs products that can last up-to 12 years, depending on the individual client factors. Generally, LARCs have a Long-term convenience depending on the type, thus eliminating the need for daily or weekly contraception. These benefits have made LARCs popular contraceptive choice among women of reproductive age group seeking for efficient, long acting and reliable contraception. 4

There are two main types of LARCs: intrauterine devices (IUDs) and implants. IUDs are small, T-shaped devices inserted into the uterus by a trained healthcare provider. Some IUDs have additional hormonal component and together with the inflammatory effect exerted by the copper, effectively prevent ovulation and consequently pregnancy.4, 5 Implants, on the other hand, are thin, flexible rods inserted under the skin of the upper arm, releasing a steady dose of hormone to prevent ovulation. LARCs are also highly cost effective. They offer more than 99% effectiveness in preventing pregnancy, making them one of the most reliable forms of contraception.6 They are also reversible and easy to maintain.7 As access and awareness continue to grow, there is a likelihood of increase in the utilization of LARCs for family planning by women from varied socioeconomic background.8

Another modern contraceptive device are the short-acting Reversible contraceptives (SARCs). As the name implies these are ideal for individuals who want to control their fertility for a short duration. SARCs are highly flexible, reversible easy to use and cost-effective. 9 However, SARCs have very limited duration, they are users’ dependent and offer limited protection against sexually transmitted infections (STIs). 10 The devices used for SARCs include barrier method such as the male and female condoms, contraceptive diaphragm, sponges, cervical caps, oral contraceptive pills (OCPs), vaginal rings or use of Hormonal injections given every few months to prevent ovulation. 11 These devices have varying ranges of effectiveness. Some SARCs such as the progestin only pills (POPs) are taken daily and the contraceptive effectiveness is as long as the pills is taken, condoms are effective during sexual intercourse if they are used appropriately. 12 The cervical caps and female diaphragm effectiveness can last between 6-48 hours depending the kind of spermicide content of these devices. The demand for both LARCs and SARCs exists in developing countries, driven by multi-dimensional factors including government support, convenience and accessibility. 12

The Nigeria National Demographic and Health survey conducted in 2024 revealed that the unmet need for family planning among the women of reproductive age group has remained stagnant (21-22%) for more than three decades (1990-2024). 13 The country also has a low contraceptive prevalence rate (CPR) of 20% among currently married women, while just half of the sexually active unmarried women would use a contraceptive device.13 This high-risk sexual practice has exposed these sexually active young women to the danger of unwanted pregnancy, sexually transmitted infections, unsafe abortions and the attendant complications of severe sepsis, multiorgan damage, uterine perforation, severe haemorrhage and death. 14,15 It is also known that poor family planning practice can have grave socioeconomic implications including poverty, maternal and child malnutrition, increased dependency ratio, increased social inequality and strain on social and public health services 16

This study therefore, reviews the family planning data at Obio cottage Hospital, Port Harcourt a Shell- Petroleum Development Company- Joint Venture supported facility with the view to determine the pattern and determinants of family planning uptake among the clients accessing the FP services at the facility. The understanding of the contraceptive uptake and the influencing factors at this level of health care service delivery will help to plan for the appropriate programme interventions to improve both the quality and uptake of FP services at the facility. These contraceptive options can help meet the unmet need for family planning and improve the reproductive health outcomes.

**Methodology**

This study was a retrospective, cross-sectional review of the records of 2499 clients who accessed family planning services at the Obio Cottage Hospital, Port Harcourt, between June 2021and May 2023. The Obio Cottage Hospital started as a Primary Health Centre in 1978. It is one of the eighteen Shell Petroleum Development Company (SPDC) supported, government -owned health facilities. Shell, through its community health department successfully established a community-based health insurance scheme in the facility that has been self-sustaining for more than a decade. The hospital is a 49 -bedded facility serving communities in the Obio-Akpor Local Government Area (LGA), Rivers State, Nigeria. 17,18 The projected population of the LGA in the year 2020 was 742,238, where children 0-9 years constituted 22.7% of the population, depicting the high fertility rate in the LGA.19,20 The study population were women of reproductive age group (15-49 years) who accessed family planning services at the facility. The inclusion criteria were the clients whose information such as the socio- demographic profile, parity, type facility and type of contraception were available in the family planning record. The study excluded those with incomplete or missing relevant data.

A proforma was developed and used to extract the required information about the clients from the family planning records, data of 2499 clients were used for the study and this were initially collated into an excel file. The data were later exported into the IBM SPSS Statistics for Windows, Version 25.0. (Armonk, NY: IBM Corp) and the StataCorp STATA/SE 14 (StataCorp.2011; Stata Statistical Software: Release 12, College Station, TX; StataCorp LP) for data analysis. The frequencies and the percentages of the socio- demographic and clinical profiles of the patients were computed. For the bivariate analysis, chi-square was used to determine the factors associated with the uptake of the FP methods. The level of statistical significance was set at p < 0.05. The Ethical approval to conduct the study was obtained from the Health Ethics Research Committee of the Rivers State Ministry of Health

**Result**

The result showed that majority of the clients at the family planning clinic were aged 30-39 years, with a mean age of 34.21±5.7. They were predominantly from the urban settlements, 2453 (94.2%) of the clients were residents in the Port Harcourt, the capital city of Rivers State, Nigeria, compared with just 245(5.8%) who came from the neighboring rural communities to access the services. Most of the clients were multiparous, 2261(90.4%), only 209 (8.4%) were primipara while 29 (1.2%) were nulliparous women. More than two-third, 1688 (67.5%), preferred the LARC method of contraception. The greater proportion of the clients, 2453 (98.2%) assessed only the routine FP services, while just a few, 46(1.8%) demanded for the post-partum family planning (PPFP) services. A total of 1013 (40.5%) preferred hormonal implants, while 675 (27%) opted for intrauterine contraceptive device (IUCD), only 259 (10.4%) had Sayana Press, only 187(7.5%) demanded for the male condoms for their spouse/sexual partners, 164 (6.6%) took the combine oral contraceptives, 133 (5.3%) requested for the Depo Provera, 64 (2.6%) had Noristerat, only 4 clients (0.2) preferred to use the female condom. The total uptake for SARC was 32.6%.

Most of the clients 2185 (87.4%), came for a revisit, only 314 (12.6%) were new FP acceptors. Ninety percent (2247) had normal blood pressure < 140/90. The BMI result for the majority of the clients, 1012 (44.9%) was overweight, more than one fifth (528) were reported to present with obesity, only 658 (29.2%) had normal weight while 57(2.5%) were diagnosed as underweight Table **1**

The study also showed in Table 2 that there was a statistically significant association between parity and the demand for either a LARC or SARC (X2 =25.36, p=0.001). More multiparous women 1559 (68.9%) demanded for LARC compared to SARC 702 (31.1%) TABLE 2

There was no statistically significant association between the age group ( X2=0.28, p=0.6), place of residence ( X2=2.17, p=0.14), , being a new contraceptive acceptor or coming for a revisit ( X2=2.13, p=0.15), routine FP uptake or PPFP services( X2=1.26, p=0.26), levels of blood pressure, ( X2=0.36, p=0.55), body mass index (X2=1.14, p=0.78), and preference for SARCs OR LARCs .

**Table 3** further revealed that the major users of combined oral contraceptives (84.8%), hormonal implants (90.6%), Depo provera, Sayana Press (91.5%), female condom (100%) and IUCD (95%) were the multiparous women. There was a statistically significant association between parity and type of contraceptive use (*X*2= 113.3, p=0.001).

**Discussion**

Most of the women in this study had the hormonal implant and IUCD, which are LARCs compared to the SARCs. Intrauterine devices (IUDs) and hormonal implants have been shown to be the most effective reversible methods of contraception. Previous studies showed that they were approximately twenty-times more effective than SARCs like the contraceptive pills, patches, and rings.21This implies that the clients who attended the FP clinics at the Obio Cottage Hospital were adequately counseled and informed about the superior effectiveness of long-acting reversible contraception (LARC) methods. The LARCs (IUDs and hormonal implants) are safe for women, including adolescents and those who are in the postpartum or postabortion period.22 The LARCs are also easy to use, and they can last for many years. They have also been described as *forgettable contraceptives; 22* this means that once inserted, the user would enjoy the contraceptive effects for a long term, they can forget or have no concern about the device until the expiry date. There is no need for any scheduled therapy or clinic revisits.

This study also revealed that most of the women who accessed the FP services for LARCs or SARCs were the older women in the age group 34-39 years. They were mostly multiparous women who wanted the contraception for birth-spacing rather than for child limiting. 23 We found no record concerning the use permanent contraceptive method in this study. This is consistent with previous findings in Africa where women would not accept permanent contraception due to the sociocultural desire for many children. 24-25

Very few adolescents accessed the FP clinic for either SARC or LARC. Previous studies have also highlighted the barriers to uptake of a family planning method by adolescents in developing countries. 24 The barriers to accessing the LARC (IUDs and hormonal implants) in poor resource settings are those related to education, negative social influence from the spouses, friends and relatives, providers’ training, cost and logistics.26,27 Successful interventions have been shown to minimize these barriers. Adolescents and adult women should be counseled about contraception and should have access to the full range of contraceptive methods, including LARC methods.28 Previous studies have also shown that some women were afraid of side effects of IUDs and hormonal implants such as change bleeding patterns.29,30 Anticipatory counselling by FP health workers about expected changes when on a modern contraceptive device will increase the uptake of the FP devices.31

Postpartum Family planning (PPFP) service utilization was very low in this study; less than 2% of the clients had a PPFP service. There is a need for the health workers in the maternity unit of this cottage hospital to ensure that women had counselling session on PPFP

post- delivery. 31 Blood pressure (BP) checks and Body mass index (BMI) done for FP clients in this cottage hospital were very appropriate as these would guide the attending health workers on the appropriate choices of contraceptives during the FP counselling sessions. Although the findings of this study did not demonstrate any statistically significant difference in the use of SARCs or LARCs for clients with different levels of BP or BMI, the reported high prevalence of overweight and obesity among these women is a concern. This can expose the women to higher risks of cardiovascular and reproductive adverse events 32

**This study is not without limitations**. The limitations of this study were that associated with the use of secondary data; the routine FP data collected were limited in the number of explanatory variables and there were some missing and incomplete data.

**Conclusion/ Recommendation**

The Long-Acting Reversible Contraceptive (LARCs)- hormonal implants and IUCD were the most preferred family planning method by the multiparous women who were the major FP clients at the Obio Cottage Hospital. There is a need for appropriate FP campaigns and community interventions to target younger women at the adolescence, nulliparity and primiparity stages. The use of post-partum family planning services is very low in this study similar to previous reports.33-35The postpartum period including attendance at the post-natal clinics is among the best time to introduce the clients to the family planning services. 36 The health workers need to take advantage of the postpartum period to maximize the uptake of the FP services by this target population.

**COMPETING INTERESTS DISCLAIMER:**

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

Consent

As per international standards or university standards, respondents’ written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

Author(s) hereby declares that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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**Table 1: Socio demographic and reproductive health profile of the clients** (n=2499)

|  |  |  |
| --- | --- | --- |
| Sociodemographic  | Frequency | percentage |
| Age (Mean=34.21+5.70)10-1920-2930-3940-49>50 | 07495157940414 | 0.319.863.216.20.6 |
| **Residence**  Urban Rural  | 2354145 |  94.2 5.8 |
| Nulliparous PrimiparaMultipara  | 292092261 | 1.28.490.4 |
| **Type of clients** Routine\*PPFP | 245346 | 98.21.8 |
| **\*LARC (1688)**Hormonal implant\*IUCD**\*SARC (811)**Sayana pressMale condomCombined oral contraceptives Depo Provera Noristerat Female Condom  | 10136752591871641336404 | 40.527.010.47.56.65.32.60.2 |
| **Type of uptake** New acceptor Revisit | 3142185 | 12.687.4 |
| Blood pressure Normal BP (<140/90)High BP. (>140/90) | 2247252 | 89.910.1 |
| **\*BMI (kg/m2) n=2255**Underweight (<18.5)Normal weight (18.5-24.9)Overweight (25.0-29.9)Obesity ( >30) | 576581012528 |  2.529.244.923.4 |

**PPFP- Post Partum Family Planning, LARC- Long-Acting Reversible Contraceptives,**

**SARC- Short Acting Reversible contraceptives, BMI- Body Mass Index**

TABLE 2: **Bivariate analysis of the socio-demographic and health factors associated with demand for LARC/SARC (n=2499)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable  | LARC | SARC  | CHI(X2) | p |
| **Age** <30>30 | 3441344 | 158653 | 0.28 | 0.60 |
| **Residence** RuralUrban  | 1061582 | 39772 | 2.17 | 0.14 |
| **Parity** NulliparousPrimiparaMultipara | 111181559 (68.9) | 1891702 (31.1) | 25.36 | 0.001 |
| **Type of uptake**New acceptorRevisit | 24113 | 2211,446 | 2.13 | 0.15 |
| **Type of FP services (N= 1824****Routine** **\*PPFP** | 165136 | 1361 | 1.26 | 0.26 |
| **Blood pressure** Normal High | 1522166 | 86725 | 0.36 | 0.55 |
| **\*BMI (kg/m2) n=2255**Underweight (<18.5)Normal weight (18.5-24.9)Overweight (25.0-29.9)Obesity ( >30) | 41440692352 | 16218320176 | 1.14 | 0.78 |
|  |  |  |  |  |

**Table 3: Association between Parity and specific types of contraceptives (n=2499)**

|  |  |  |  |
| --- | --- | --- | --- |
|  Parity/ Types of Contraceptives  | Nulliparous Frequency (%) | PrimiparaFrequency (%) | Multiparous Frequency (%) |
| Combined Oral Contraceptives  | 2 (1.2) | 23 (14.0) | 139(84.8) |
| Hormonal implant | 8(0.8) | 87(8.6) | 918(90.6) |
| Depo Provera | 0(0) | 13(0.5) | 120(4.8) |
| Noristerat | 0(0) | 13 (20.3) | 51(79.7) |
| Male condom  | 15(8.0) | 21(11.3) | 151(80.7) |
| Sayana | 1(0.4) | 21 (8.1) | 237(91.5) |
| Female condom  | 0(0) | 0(0) | 4(100.0) |
| IUCD  | 3(0.4) | 31(4.6) | 641(95.0) |
| *X*2= 113.3, p=0.001*NB- The tables were collapsed to remove the zeros before the chi square was calculated* |