



REVIEW ARTICLE

PATTERN OF INTRAUTERINE DEVICE DISCONTINUATION AND ITS DETERMINANTS IN A TERTIARY HOSPITAL IN SOUTH-WEST NIGERIA

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ABSTRACT

Background: Intrauterine Contraceptive Device is a very reliable long-acting reversible contraceptive that can be used for many years. With Nigeria's relatively low contraceptive prevalence rate, the most populous country in Africa, it is important to explore factors associated with discontinuing intrauterine devices in its users. **Objective:** This study determined factors associated with discontinuation of intrauterine contraceptives in reproductive aged women. **Methods:** This was a descriptive retrospective cross-sectional study in which 687 reproductive-aged women, who had intrauterine contraceptive devices (IUCD), at Lagos State University Teaching Hospital Family Planning clinic, over a 5-year period, were assessed for possible discontinuation and associated factors. Data were collected with a structured proforma designed for the study and analysed with relevant descriptive and inferential statistics at $p < 0.05$. **Results:** The IUCD was the most selected contraceptive, by 90% of women, in the study clinic with a discontinuation rate of 11%. Women aged 31 to 40 years accounted for about 45% of intrauterine contraceptive users were the most common group of users followed by women aged 41-50 years. The average number of children by these women was 3. No nulliparous woman opted for IUCD during the study period. The commonest reason for discontinuation was the desire to get pregnant (19.7%) and menorrhagia and missing strings were other common causes. The women's age and marital status significantly influenced IUCD discontinuation. **Conclusion:** Relatively older reproductive-aged women more readily opted for IUCD. Single and low parity women were more likely to discontinue its use for the desire to conceive.

INTRODUCTION

The 8 billion population in the world is still increasing geometrically despite contraceptives having been proven as an interventional tool in curbing the massive explosion. Contraceptives prevent 54 million unintended, unwanted and untimely pregnancies.¹ Contraceptive uptake is not only dependent on its adopter but also on users who discontinue contraceptives before the due date, for whatever reason while at risk of pregnancy, this is known as contraceptive discontinuation.^{1,2} The adoption and discontinuation of contraceptives are two crucial elements that influences population growth and directly affect the contraceptive prevalence.³ Intrauterine contraceptive device (IUCD) is a modern form of long-acting reversible contraceptive that is effective, reliable, cheap, low failure rate, and requires little user interference.⁴ It can be used for 7- 10 years in situ. Women with most coexisting medical conditions can safely use IUCD since IUCD does not interact with drugs. It can be inserted immediately after delivery with no interference with breastfeeding and removal reverses to fertility instantly.⁵ Despite its effective qualities, IUCD is not without its setbacks, Users of IUCD have complained of fear of foreign bodies in-situ, myriads of side effects, and unwanted complications. Side effects can range from mild to severe ones affecting the quality of life, including abdominal pain,

spotting, menorrhagia, pelvic inflammatory disease, dysmenorrhea, vaginal discharge, dyspareunia, and sometimes spouses complain of string bites during intercourse.^{2,3,4,5} Moreover, other users are encumbered with complication such missing string, extrusion, perforation, expulsion or translocation. Subsequently, these negatives have cumulated into reasons why the uptake is low or why others have early discontinuation of IUCD.^{4,5,6} According to World Health Organisation (WHO), globally about a tenth would discontinue at the end of 12 months while two-third stop contraceptive use after 36 months, similarly, five in ten women in LIC/MIC would discontinue use of a contraceptive method within one year from reasons outside pregnancy.^{7,8} Studies have shown that half of the women using IUCD in developing countries would discontinue its use within five years of use as a result of side effects⁹ similar to this Gebeyehu in Ethiopia found that 45% of intrauterine devices discontinue after 3 years.¹ In United Kingdom, discontinuation rate of IUCD is 17% and 28% after one and two years respectively.⁹ The domino effect on the woman's psychological, physical, and social well-being thus reduces the desire for another form of contraceptive, increasing unwanted pregnancy, abortion, miscarriage, and maternal and infant death.^{10,11,12} Discontinuation of contraceptives has a grave effect on contraceptive prevalence, total fertility rate and unmet need.³ In developing regions 28% – 64% of the total fertility rate (TFR) and 20% of unmet need are related to the discontinuation of contraceptives.¹³ results from discontinuation because of side effects.^{13,14} Furthermore, the financial implication of the overturn cannot be overemphasized, the woman, family and the nation as a whole bear this burden.

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This implies that all efforts must be made to reduce discontinuation among IUCD users. Studies in Nigeria show that the contraceptive prevalence rate for the overall method of contraceptive is 17% among currently married women with an unmet need of 13%¹⁵. Contraceptives cause a 44% reduction in maternal mortality and a 21% reduction in deaths among children under the age of five.¹⁶ There is thus a need to understand the reasons why women discontinue IUCD and the factors that determine discontinuance. Based on the major role of IUCD discontinuation, the study aims at determining the factors related to discontinuation and the reasons for discontinuation the IUCD.

METHODOLOY

This study was a 5-year retrospective facility-based study of women between 15-49 years attending the family planning clinic of the Lagos State Teaching Hospital LASUTH in Lagos. It is a tertiary hospital providing family planning services to over 20 million in the mainland and neighboring state. The women are attended to by consultants, registrar nurses, midwives. They receive counseling on contraceptive methods, proper history taken, administration of the available method of choice and removal and follow-up on subsequent visits. The women were seen according to their needs, and New clients were counseled and consented to the contraceptive of choice. The absence of pregnancy was ascertained by either serum or urine pregnancy test. thereafter were administered the contraceptive of informed choice, follow-up visit dates were given. Old clients who either had check-ups, complaints, or desire to discontinue were also seen. Discontinuing the use of a contraceptive method was recorded in the removal record. Those with complications were referred to the gynecology clinic for proper treatment by a gynecologist. All contraceptive methods are freely given. The family planning clinic, records all dates of insertion and removal of IUCD, as well as those who were removed before the due date and reasons for discontinuation.

A detailed proforma consisting of the sociodemographic profile, reproductive, medical, and contraceptive history including dates of insertion and removal, duration of use and reasons for discontinuation, side effect experienced or other complications and the new type of contraceptive she opted for. Included in the study were women who had been inserted IUCD in the clinic within the study period and excluded were women who had complications or became pregnant while IUCD was insitu, though none was encountered. Data obtained were anonymized to ensure patient confidentiality. The data obtained were entered into an IBM-compatible personal computer and analyzed and expressed in descriptive statistics using SPSS17 for Windows statistical package (version 7.5). Ethical approval was obtained from the Health Research Ethics and Committee of the Lagos State University Teaching Hospital. The study was carried out according to the declaration of Helsinki. The participants consented to participating in the study after being informed of the study.

RESULTS

A total of Six hundred and Eighty Seven (687) women using IUCD method of contraceptive were enlisted across a period of five years. They were in the age bracket 21 and 51years+, with average age of 39years. Majority of these women are in category 31 to 50years (80.4%), large number of them are Christian (83.1%). Followed by Muslim (13.4%) and others (3.5%). About three quarter (75.3%) had Tertiary education and the remaining one-quarter (24.7%) are secondary school certificate holder. Almost all the women are married (98.4%), except for only 11 of them who were single. Majority of women enlisted are Yoruba, about 70% of them, a quarter are Igbo women (25.2%) and 5.2% are Hausa. Average number of children a woman had is 3 children, almost 9 out of every 10 women had between 1 and 4 children (88.6%) as shown in Table1. Almost all the women enlisted were on self-referral, not refer by any medical personnel except for 3 women who claimed to have been referred by Primary Healthcare (PHC).

Table 1. Socio-Demographic Characteristics of Women

| Characteristics | Frequency | % |
|-----------------------|-----------|--------|
| Age (years) | | |
| 21 - 30years | 91 | 13.2% |
| 31 - 40years | 309 | 45.0% |
| 41 - 50years | 243 | 35.4% |
| 51years and above | 44 | 6.4% |
| Age (years) | 39.1±7.4 | |
| Religion | | |
| Christian | 571 | 83.1% |
| Muslim | 92 | 13.4% |
| Others | 24 | 3.5% |
| Education | | |
| Secondary education | 170 | 24.7% |
| Tertiary education | 517 | 75.3% |
| Marital Status | | |
| Single | 11 | 1.6% |
| Married | 676 | 98.4% |
| Ethnicity | | |
| Yoruba | 478 | 69.6% |
| Igbo | 173 | 25.2% |
| Hausa | 36 | 5.2% |
| Parity | | |
| 1 – 2 | 211 | 30.7% |
| 3 – 4 | 410 | 59.6% |
| 5 and above | 66 | 9.6% |
| Total | 687 | 100.0% |

Table 2. Contraceptive used before, Reasons for removal and New Contraceptive

| Characteristics | Frequency | % |
|------------------------------------|------------|--------------|
| Source of referral | | |
| Walk in / Self | 684 | 99.6 |
| PHC | 3 | 0.4 |
| Total | 687 | 100.0 |
| Contraceptive used prior | | |
| Male condom | 30 | 4.4% |
| IUCD | 323 | 47.0% |
| Safe period/ calendar | 1 | .0.1% |
| Injectable | 30 | 4.2% |
| Pills | 11 | 1.6% |
| Implant | 32 | 4.7% |
| Coper T merina | 1 | 0.1% |
| LAM | 1 | 0.1% |
| Nil/ none | 264 | 38.4% |
| Total | 687 | 100.0 |
| Reasons for removal | | |
| Menorrhagia | 13 | 17.1% |
| For pregnancy / conception | 15 | 19.7% |
| Missing string | 13 | 17.1% |
| Patients' desire | 7 | 9.2% |
| Abdominal pain | 5 | 6.6% |
| Missed menses | 1 | 1.3% |
| Menopause | 8 | 10.5% |
| Virginal Infection | 14 | 18.4% |
| TOTAL | | 100.0 |
| New contraceptive of choice | | |
| Female condom | 3 | 3.9% |
| Pills | 4 | 5.3% |
| Re-insertion of IUCD | 10 | 13.2% |
| Implant | 12 | 15.8% |
| Male Condom | 23 | 30.3% |
| Injectable | 2 | 2.6% |
| Due to menopause | 8 | 10.5% |
| No contraceptive | 14 | 18.4% |
| Total | 76 | 100.0 |

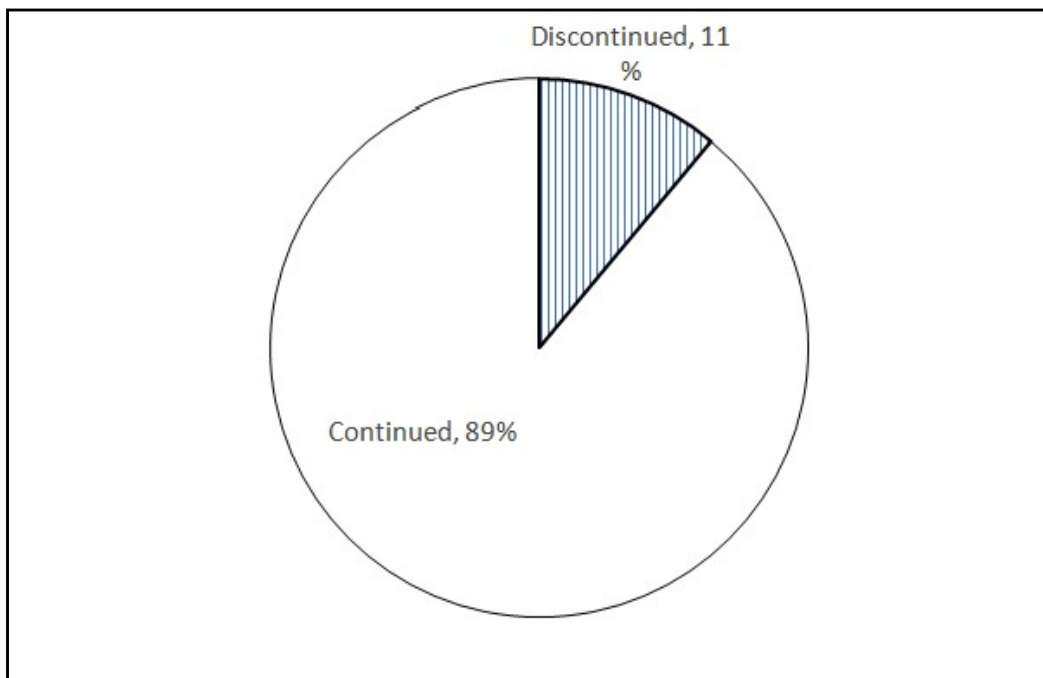
About 62% of women have used one contraceptive or the other before, the commonest type used before was IUCD (47%) followed by Implant (4.7%), Male condom (4.4%) and Injection (3.5%), others are Pills, Depo and 38.4% have never tried any contraceptive method before now. Top reason for contraceptive removal by women is for pregnancy / conception (19.7%), other reasons for removing the contraceptive by women are due to Virginal Infection (18.4%),

Table 3. Association between Subjects' IUCD status and their Demographic Profile

| | Had no Reasons | Had reasons | Total | Chi square | P-value |
|---------------------|----------------|-------------|-------------|------------|---------|
| Education | | | | | |
| Secondary education | 149 (24.3) | 21 (28.4) | 170 (24.7) | 0.59 | 0.44 |
| Tertiary education | 464 (75.7) | 53 (71.6) | 517 (75.3) | | |
| Marital Status | | | | | |
| Single | 7 (1.1) | 4 (5.4) | 11 (1.6) | 7.62 | 0.000 |
| Married | 606 (98.9) | 4 (7.5) | 676 (98.4) | | |
| Age (years) | | | | | |
| 21 - 30years | 80 (13.1) | 11 (14.9) | 91 (13.2) | | |
| 31 - 40years | 275 (44.9) | 34 (45.9) | 309 (45.0) | 12.31 | 0.006 |
| 41 - 50years | 225 (36.7) | 18 (24.3) | 243 (35.4) | | |
| 51years and above | 33 (5.4) | 11 (14.9) | 44 (6.4) | | |
| Parity | | | | | |
| 1 - 2 | 187 (30.9) | 24 (34.3) | 211 (31.3) | | |
| 3 - 4 | 362 (59.8) | 36 (51.4) | 398 (59.0) | 2.60 | 0.272 |
| 5 & above | 56 (9.3) | 10 (14.3) | 66 (9.8) | | |
| Total | 605 (100.0) | 70 (100.0) | 675 (100.0) | | |

Table 4. Association between Subjects' New Contraceptive and their Demographic Profile

| Characteristics | None | New Contraceptive | Total | Chi square | P-value |
|---------------------|-------------|-------------------|-------------|------------|---------|
| Education | | | | | |
| Secondary education | 154 (24.6) | 16 (25.8) | 170 (24.7) | 0.04 | 0.84 |
| Tertiary education | 471 (75.4) | 46 (74.2) | 517 (75.3) | | |
| Marital Status | | | | | |
| Single | 10 (1.6) | 1 (1.6) | 11 (1.6) | 0.000 | 0.994 |
| Married | 615 (98.4) | 61 (98.4) | 676 (98.4) | | |
| Age (years) | | | | | |
| 21 - 30years | 85 (13.6) | 6 (9.7) | 91 (13.2) | | |
| 31 - 40years | 280 (44.8) | 29 (46.8) | 309 (45.0) | 16.14 | 0.001 |
| 41 - 50years | 227 (36.3) | 16 (25.8) | 243 (35.4) | | |
| 51years and above | 33 (5.3) | 11 (17.7) | 44 (6.4) | | |
| Parity | | | | | |
| 1 - 2 | 192 (31.3) | 19 (31.1) | 211 (31.3) | | |
| 3 - 4 | 365 (59.4) | 33 (54.1) | 398 (59.0) | 1.97 | 0.374 |
| 5 & above | 57 (9.3) | 9 (14.8) | 66 (9.8) | | |
| Total | 614 (100.0) | 61 (100.0) | 675 (100.0) | | |

**Fig. 1. Discontinuation Rate**

Menorrhagia (17.1%) and Missing string (17.1%) while the major side effect mentioned by some women is Virginal itching (67.1%) and almost one-third of women gave no side effect (31.6%). New contraceptive commonly used by women are Male Condom (30.3%), Implant (15.8%) and Re-insertion of IUCD (13.2%) as shown in Table 2. Further analysis was run to determine the association between reasons for contraceptive removal and selected demographic profile of women enlisted, the demographic characteristics tested against the reasons for contraceptive removal are educational level of women, their marital status, age category of women and their number of children (parity). Age and Marital Status of women were found to be statistically significantly contributed ($p < 0.05$) to some reasons for removal of IUCD by women enlisted over a period of 6years while their education and parity are not statistically significantly contributing to the reasons for IUCD removal but may influence it numerically. Please see detail in Table 3 below. Also, we determine the association between New contraceptive adopted and selected demographic profile of women enlisted, the demographic characteristics tested against New contraceptive method are educational level of women, their marital status, age category of women and their number of children (parity), it is only age classification of women founded to be statistically significantly contributed ($p < 0.05$) to the new contraceptive method adopted by these women, enlisted for over a period of 6years while their education, marital status and parity are not statistically significantly contributing to the new contraceptive method but they influence the usage of new contraceptive numerically. Please see detail in Table 4 below.

DISCUSSION

The intrauterine contraceptive device is a long-acting reversible contraceptive device. The study showed that about half of its users were women of 31-40 years of advanced reproductive age. This implies that the desired number of births must have been achieved and would rather avoid pregnancy. In view of this, two -third of the women have had 3-4 childbirths potentiates the desire of avoiding pregnancy. The same explanation can be given to the second highest users being ages 41-50 years. These two age groups would have completed their family size and upheld contraception. These findings are in congruent with most other studies.^{3,11} The National Dermographic Health Survey(NDHS) also showed that most acceptors of the intrauterine device are women in the age group 31-34 years.¹⁵ In our centre, IUCD is the mainstay of contraceptives among women with an uptake of about 90% closely followed by implants.¹⁷ In our study the discontinuation rate was 11% among its users, this was similar to finding in other centres across the country. In Nigeria, the discontinuation rate varies widely across the country occurring between 2.8%-55.1%.^{3,5,10,11,12} based on a plethora of reasons such as culture, myths, spousal acceptance faulty insertion technique, education, side effects, poor counseling.^{1,2,6,7} The discontinuation rate increases with time but is skewed towards developing countries. In a similar centre in northern the average discontinuation rate of IUCD was 12.1%. In contrast, some other studies have found a higher value.¹⁰ The study revealed that pregnancy was the main reason for discontinuation among 50.9% of the users. Other studies within and outside the country have shared similar patterns with pregnancy as the commonest culprit.^{12,18,19} A third of the women were of low parity and are yet to complete the family size and others are time bound to complete their desired number as expected in early and late reproductive ages respectively. According to NDHS, the most common reason for discontinuation was the desire to become pregnant and closely followed by side effects.¹⁵ The study showed that among the side effects experienced by the women, vaginal infection(18%) was the commonest reason for removal and was closely followed by both menorrhagia (17%) and missing string(17%). Across the county, the nature of complaints was similar but the trend varies widely. Studies have found either menorrhagia or vagina infection as the commonest side effects.^{3,10,20} Odusolu in Calabar found that menstrual irregularity was the main side effect.¹⁴

In a study carried out in Egypt, the most common reasons for discontinuation were the desire for pregnancy (50.9%), followed by excessive menstrual bleeding (10.4%),²¹ In Ethiopia, generally similar, side effects were the main reasons for discontinuation, and these to what had been stated earlier.¹ According to WHO, most removals are associated with side effects² While some of these side effects wane others persist with an on towards effect on the quality of life varies.^{17,18} These culminate in heightened anxiety and fear. Most women find it impossible to cope with the experienced side effect, consequently necessitating the reversal to other forms of less effective contraceptives with high failure rates. Characteristically, some women show hesitancy or refusal to use another form of contraceptive consequently leading to unwanted pregnancy and its sequelae.¹⁹ Following the discontinuation of IUCD, some women with no desire to get pregnancy reverseto other forms of contraceptive, underscoring the fact that removal was based on the experienced side effect, however, the new contraceptive may not be the best option. Some women other than menopause refused to take up any new form of contraceptive.

A third of the women in our study reverted to a male condom as a form of contraceptive which is a temporary contraceptive method with a high failure rate though with less method-related complication and requires no caregiver assistance, thus, accounting for the high uptake. Others opted for implants (15%) which is the second most popular form of long-acting contraceptive after IUCDS. About 13%, had IUCD reinserted for those whose removal was based on the expiration of previously inserted IUCD. However, 18% chose no form of contraceptive, thus, there is a need to continually counsel and educate women as well as training and retraining of caregivers on possible expected side effects, and the need for uptake of new contraceptives after removal in preventing unwanted pregnancy, maternal and perinatal, childhood morbidity and mortality.⁵

The study also analysed the sociodemographic determinants for removal, this showed that the age of the women is a determinant for removal as the majority of these women were between 31 and 40 years range. Most of these women are married women and are more desirous of completing their family size at that reproductive age group. This was seen in several other studies. The NDHS revealed that Eighty-four percent of women consider four or more children to be ideal, while 13% prefer to have three or fewer children. This is greatly influenced by socioeconomic status, education, geographical location¹⁵ This signifies that age of insertion is more dependent on the need for discontinuation. Though, our study had no nulliparous but primiparous women were more likely to continue its use than multiparous women. There has been hesitancy on the use of IUCDs in nulliparous or adolescent age groups in our environment due to the challenges imposed on the age groups, however, The World Health Organisation (WHO) and the Royal College of Obstetrician and Gynaecology affirm the safe use of IUCD among these group.^{7,9} In the study, it was only age that contributed significantly to the uptake of new contraceptives. Though some of studies have shown that the woman's age, parity, geographic location (urban versus rural), and education are the most consistent predictors of method switching

CONCLUSION

It shows a high local acceptance and continuation rate by the majority of users. IUCD should be offered to women of reproductive age group seeking a long-lasting contraceptive. However there educating caregivers and users on forewarned side effects in making informed choices is vital in reducing discontinuance rate among users

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Abbreviation**Intrauterine Contraceptive Device:** IUCD**National Demographic Health Survey:** NDHS**Total Fertility rate:** TFR**World Health Organization:** WHO**REFERENCES**

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