

# The Acceptance Rate of Intrauterine Contraceptive Device (IUCD) Amongst Family Planning Clinic Users In Lagos University Teaching Hospital (LUTH)

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## ABSTRACT

**Background:** Intrauterine Contraceptive Device is an effective reversible long term contraceptive method that is popular and widely used in this environment.

**Objectives:** To determine the characteristics of women using this mode of contraception, their main reasons for acceptance, complications arising from usage and the discontinuation rate as well as reasons for discontinuing the method.

**Methods:** A review of case records of all the new contraceptive acceptors attending the Department of Obstetrics and Gynaecology Family Planning Clinic of the Lagos University Teaching Hospital (LUTH) from 1<sup>st</sup> January 1990 to 31<sup>st</sup> December 1994 was examined and the clients that accepted the intrauterine contraceptive device, (IUCD) during this period were identified. The records of those that opted for IUCD were thoroughly reviewed to identify the follow up events through the subsequent ten years visits to determine outcome of the contraceptive usage.

**Results:** Amongst the 2754 new contraceptive acceptors during the study period, 1602 (58.17%) clients accepted the Intrauterine Contraceptive Device (IUCD). Of these IUCD acceptors, the mean age was  $31.3 \pm 5.5$  years, mean parity was  $3.9 \pm 2$  and mean number of children alive was  $3.6 \pm 1.8$ . Seven hundred and forty nine (46.8%) of them had previously used contraceptives and 1175 (73.3%) of them still wanted more children, thus child spacing was the main reasons for accepting this method.

By 12 months, the discontinuation rate was 13.9% with the cumulative discontinuation rate of 47% as at forty-eighth month. The commonest reason for discontinuation was planning to get pregnant in 426 (26.6%) of the clients. Menstrual disorders accounted for 108 (6.7%). The mean duration of IUCD was  $25.4 \pm 18.8$  months with an accidental pregnancy rate of 0.3%.

**Conclusion:** Intrauterine Contraceptive Device is widely accepted amongst women in the study group. Devices that reduce menstrual loss and also have long duration of action like Levonorgestrel intrauterine system (LNG-IUS) qualifies to be considered.

**Keywords:** Intrauterine Contraceptive Device, Acceptance and Family Planning Clinic Users.

## INTRODUCTION

The Intrauterine Contraceptive Device (IUCD) is one of the commonly used reversible method of contraception in the world today.<sup>1</sup> Copper Intrauterine Contraceptive Devices are used by about 135 million women worldwide with a continuation rate of about 70% reported after three years of usage.<sup>2</sup> It has been shown that IUCD is one of the four contraceptive methods that couples are commonly aware of in Nigeria.<sup>3</sup> In Lagos and Ibadan, Southwestern Nigeria, IUCD accounted for about 68% to 82% of new contraceptive acceptors respectively.<sup>4,5</sup> In the Nigerian survey, oral contraceptives was the most popular modern contraceptive method used, adopted by one-fifth of the married urban contraceptive users while IUCD accounted for one-sixth.<sup>6</sup>

The IUCD had evolved for about a century. The first intrauterine device for contraception was introduced in 1909 and from this came the original development of the Graefenberg ring in 1930 and the Ota ring in 1934. Lippes introduced the famous double S-shaped Lippes loop of silastic in 1962 that was widely used until the 1970s.<sup>7</sup> Zipper and others in 1969 introduced the Copper releasing devices, which had over the years undergone modifications to increase the length of action and reduce the expulsion rate.<sup>7</sup> In 1970 Scommegma and others pioneered the hormone releasing IUCD from which the progesterone releasing device (progestasert) was developed which was only effective for twelve months.<sup>7</sup>

The generally recommended duration of IUCD is between 3 to 10 years depending on the device. Large follow up studies have shown that some can be used for up to 12 years, thus providing highly effective contraception.<sup>1</sup> The contraceptive mechanism of IUCD is to prevent fertilization by sperm immobilization or prevention of their migration to the fallopian tubes. The Copper IUCD also appear to directly affect oocytes and thus inhibiting their ability to be fertilized.<sup>8</sup> Side effects of IUCD include changes in menstrual flow especially menorrhagia, dysmenorrhoea, expulsion and perforation of the uterus may also occur.<sup>8</sup> Pelvic infection risk is minimal (0.97%) and limited to the first 20 days following insertion.<sup>9</sup>

This study was designed to provide baseline data on the use of intrauterine contraceptive device in Lagos University Teaching Hospital in order to provide a background for the introduction of the newer devices.

## SUBJECTS AND METHODS

A review of case records of all the new contraceptive acceptors attending the Department of Obstetrics and Gynaecology Family Planning Clinic of the Lagos University Teaching Hospital (LUTH) from 1<sup>st</sup> January 1990 to 31<sup>st</sup> December 1994 was examined and the clients that accepted the Intrauterine Contraceptive Device (IUCD) during this period were identified. The records of those that opted for IUCD were thoroughly reviewed to identify the follow up events through the subsequent ten years visit to determine outcome of the contraceptive usage. Relevant data noted included age, parity, marital status, level of education, socio economic class, previous contraception, intention for more children, type of IUCD inserted, various complaints and complications as well as duration of usage were looked at and reasons for discontinuing this method of contraception were noted. The duration of action of the copper IUCD device used in the study was for five years. The clients were classified as lost to follow up if they had defaulted follow up for one year or more. Their data was included in the study but the final outcome of the IUCD device could not be ascertained.

For the purpose of this study, the United Nations definition<sup>10</sup> was used to describe different groups of young people. Adolescents: 10-19 years (early adolescence 10-14 years, late adolescence 15-19 years); Youth: 15-24 years; Young people: 10-24 years. The criteria used in defining socioeconomic class in this paper is as follows:<sup>11</sup>

Social class I:	Higher professionals like doctors, lawyers
Social class II:	Lower professionals like Teachers, Pharmacist, Managerial and technical occupation
Social class III: NM	Skilled non-manual occupation like clerks, supervisors,
Social class III: M	Skilled manual occupational like engine drivers, artisans like mechanics, fitters, bricklayers, carpenters,
Social class IV:	Semi-skilled workers like bus conductors, postmen
Social class V:	Unskilled workers like general labourers, domestic servants

## RESULTS

There were 2754 new contraceptive acceptors at the family planning clinic during the period under review and

1602 (58.17%) of them accepted Intrauterine Contraceptive Device (IUCD). 1559 (97.3%) of the clients were married and 1241 (77.5%) were Christians. 141 (8.8%) had no formal education with the majority 1065 (66.5%) having had post primary education. 1175 (73.3%) of the clients intended to have more children, 302 (18.9%) did not while 125 (7.8%) were not sure of what they wanted. The IUCD was copper releasing type in all but 4 clients (0.25%) who had Lippes loop.

92.3% of the clients were aged 20 to 39 years, 0.5% was adolescent while the overall mean age was  $31.3 \pm 5.5$  years. 71.5% had married as youths, 22.88% had their first pregnancies as adolescent while 69.18% did so as youths. The mean age at marriage was  $22.2 \pm 3.9$  years while the mean age at first pregnancy was  $22.5 \pm 3.9$  years (Table 1).

Table 2 shows the parity and number of living children of the clients. Only about 1% was nulliparous and the same percentage with no living child. 63.5% were Para 1 to 4 while grandmultiparity accounted for 35.6%. The means parity was  $3.9 \pm 2$ . 69.1% of the clients had one to four children alive while 29.8% had five or more children alive. The mean number of children alive was  $3.6 \pm 1.8$ .

Table 3 shows the acceptance rate of IUCD in relation to social class.

249 (15.5%) of the clients had used IUCD before while 853 (53.2%) had used no contraception before as shown in table 4.

The commonest source of referral was from friends and relatives 655 (40.9%) while in 644 (40.2%), it was from health personnel (Table 5).

Table 6 shows the common complaints or side effects experienced by women using IUCD during the period of study. 754 (47.1%) has no complaint. Among the 584 (36.4%) experiencing complaints, vaginal discharge featured in 273 (17%), menstrual disorders in 199 (12.4%), menorrhagia accounting for 164 (10.2%).

752 clients (47%) discontinued the method as at forty-eight month, 666 (41.6%) were lost to follow up while 184 (11.4%) reinserted the IUCD after having been due for change.

Table 7 shows the cumulative discontinuation rates among women on the intrauterine contraceptive device and table 8 their reasons for discontinuing. There were five accidental pregnancies, a failure rate of 0.3%. Table 9 shows the details of these pregnancies and their outcome. Complications noted include pain 23 (1.4%), expulsion of IUCD in 14 cases (0.9%), pelvic inflammatory disease in 3 cases (0.2%) and uterine perforation with subsequent translocation of the device into the pelvis in one case (0.6%) that contributed to the failure rate.

Table 1: Age Distribution of Clients Accepting IUCD

Age in years	Number N=1602	%	Age at marriage N = 1579	%	Age at first pregnancy N = 1596	%
10-14	-	-	12	0.8	11	0.70
15-19	8	0.5	380	24.0	354	22.18
20-24	122	7.6	737	46.7	739	46.30
25-29	521	32.5	423	26.8	450	28.19
30-34	537	33.5	27	1.7	41	2.57
35-39	299	18.7	-	-	1	0.06
40-44	89	5.6	-	-	-	-
45-49	23	1.4	-	-	-	-
≥ 50	3	0.2	-	-	-	-

Mean age = 31.3 years Standard deviation (S.d) = 5.5 years Mean age at marriage = 22.2 years S. d = 3.9 years Mean age at first pregnancy = 22.5 years S.d = 3.9 years Note: Twenty-three clients were unmarried with 17 having one child each.

**Table 2: Parity and Number of Living Children of the Clients**

Parity	Number N = 1602	%	Number of children alive	Number N = 1602	%
0	15	0.9	0	18	1.1
1	171	10.8	1	176	11.0
2	268	16.7	2	301	18.8
3	282	17.6	3	314	19.6
4	295	18.4	4	315	19.7
5	243	15.2	5	240	15.0
6	160	10.0	6	156	9.7
7	101	6.3	7	56	3.5
8	42	2.6	8	20	1.2
9	15	0.9	9	5	0.3
10	5	0.3	10	1	0.1
11	3	0.2	-	-	-
13	2	0.1	-	-	-

Mean = 3.9, S. D. = 2

Mean = 3.6S. D. = 1.8

**Table 3: Socioeconomic Class**

Social class	Number (N=1602)	%
Higher professionals I	150	9.4
Lower professionals II	447	27.9
Skilled workers III	118	7.4
Semi Skilled workers IV	337	21.0
Unskilled worker V	438	27.3
None	112	7.0

**Table 5: Referral Source**

Referral	NumberN=1602	%
Friends and relatives	655	40.9
Nurses	473	29.5
Doctors	163	10.2
Social workers	8	0.5
Husbands	162	10.1
Self	103	6.4
Mass media	38	2.4

**Table 4: Previous Contraceptive Choice**

Previous contraceptive choice	Number N=1602	%
None	853	53.2
Oral contraceptives	275	17.2
Intrauterine Contraceptive Device	249	15.5
Condom	106	6.6
Periodic abstinence (Rhythm)	51	3.2
Injectable	48	3.0
Foamy tablets	13	0.8
Diaphragm	5	0.3
Bilateral tubal ligation	1	0.1
Jelly	1	0.1

**Table 6:  
Common Complaints/Side effects of copper IUCD**

Complaints	Number N=1602	%
None	754	47.1
Vaginal discharge	273	17.0
Menstrual disorder	199	12.4
Menstrual disorder + vaginal discharge	56	3.5
Pain	23	1.4
Vaginal discharge + pain	16	1.0
Menstrual disorder + pain	9	0.6
Menstrual disorder + vaginal discharge + pain	8	0.5

Note: 264 (16.5%) were lost to follow up since insertion and therefore could not be assigned to any of the categories.

**Table 7: Cumulative Discontinuation Rate**

Period in months	NumberN=1602	%
3 months	68	4.2
6 months	118	7.4
12 months	222	13.9
24 months	422	26.3
48 months	752	47

**Table 8: Reasons for Discontinuation**

Reasons	Number N=752	% of 1602 acceptors
Planning pregnancy	426	26.6
Personal reasons	109	6.8
Menstrual disorder	108	6.7
Vaginal discharge	46	2.9
Pain	23	1.4
Expulsion (partial/total)	14	0.9
Menopause	9	0.6
Missing string	9	0.6
Accidental pregnancy (method failure)	5	0.3
Pelvic inflammatory disease	3	0.2

**Table 9: Accidental pregnancies: Characteristics and Outcome**

Name	Age (yrs)	Parity	Duration of usage before failure	Reason for failure	Period of amenorrhoea	Outcome
A. G.	26	3 <sup>+1</sup> (3 alive)	3 months	Translocated to pelvis	8 weeks	Exploratory laparotomy done with IUCD removal subsequently lost to follow up
B. G.	24	1 <sup>+0</sup> (1 alive)	22 months	undetermined	10 weeks	Opted to keep pregnancy, subsequently lost to follow up
D. R.	38	5 <sup>+0</sup> (5 alive)	42 months	undetermined	8 weeks	Evacuation of uterus done subsequently changed method to depo medroxy progesterone acetate
R.L	29	1 <sup>+1</sup> (1 alive)	12 months	undetermined	8 weeks	Opted to keep pregnancy, subsequently had normal delivery
N. N.	24	4 <sup>+0</sup> (3 alive)	12 months	Partial expulsion	8 weeks	Opted to keep pregnancy, subsequently had normal delivery, had IUCD reinserted post delivery

## DISCUSSION

This study confirms the findings of an earlier one that Intrauterine Contraceptive Device (IUCD) is the most popular method of contraception in Lagos.<sup>4</sup> This may be due to provider bias for recruitment of client for the IUCD rather than other methods as the family planning clinic also serve as training centre for medical and nursing

personnel. This may be coupled with the fact that other methods do not necessarily need a skilled provider and therefore those opting for other methods may not have been included in this study.

Most of the clients (92.3%) were within ages 20 to 39 years which is a reflection of the reproductive age in this environment. The demographic findings also reflect the early age at first pregnancy with 69.18% of them having

their first pregnancies at 24 years. This category of clients need adequate contraception not only for child spacing but also reduction in their ultimate parity, thus reducing the incidence of grandmultiparity and its numerous associated risks.

The low IUCD acceptance by nulliparous women (0.9%) and women without any child alive (1.1%) may be due to counseling given before an informed choice and the fact that these categories of clients preferred other methods of contraception. Provider bias and the fear of possible pelvic inflammatory disease and its sequelae in these clients could also account for this.

Grandmultiparous women accounted for 35.6% of the clients and 29.8% of the women had five or more living children. This is not unexpected in this country as sterilization is unpopular amongst fertile Nigerian women and male sterilization is rarely performed;<sup>12</sup> thus women who should be limiting their family through this means rather opt for the IUCD. The fact that 73.3% of the clients intended to have more children suggest that child spacing rather than family completion is the preferred role for IUCD usage in this environment thus confirming the result of a previous study.<sup>4</sup>

This study reflects a low contraceptive prevalence rate as 853 (53.2%) of these women had never used any form of contraception before. Also Lippes loop accounted for only 4 (0.25%) in this study. This is not unconnected to the fact that Lippes loop has gone out of production.<sup>7</sup>

The commonest source of referral was from friends and relatives 655 (40.9%) which is similar to another study.<sup>3</sup> The fact that only 38 (2.4%) of the family planning clinic users heard about these services through the mass media suggest that more work need to be done through this avenue to highlight the benefits of family planning. This study also shows that 584 (36.4%) of the clients had complaints while a higher proportion 754 (47.1%) had none.

The high discontinuation rate of 47% in this study is similar to other studies.<sup>4, 13</sup> The most frequent reason for discontinuation was planning to get pregnant in 426 (26.6%) of the clients. The pattern of discontinuation by side effects showed that only 6.7% discontinued for menstrual related problems which is similar to other reports.<sup>4, 13</sup> The cumulative proportion of clients discontinuing IUCD increased with increasing months of usage which is in agreement with other studies.<sup>4, 13</sup> The average duration of usage of the IUCD in this study of 25.4  $\pm$  18.8 months is in consonance with the optimum birth interval for good reproductive health.

The high total lost to follow up rate of 41.6% experienced in this study is similar to the rate of 15% to 42% published earlier in an article assessing the various clinical trials of IUCD.<sup>14</sup> Those lost to follow up from the time of insertion may have had the IUCD removed in other hospitals or family planning clinics for personal reasons. The device failure of 0.3% found in this study is well within the accepted rate for copper devices.<sup>8</sup>

## LIMITATION

A total of 666 (41.6%) of the clients were lost to follow up and as such the outcome of usage of this device was not available. This may have ultimately affected the results.

## CONCLUSION

Copper Intrauterine Contraceptive devices are widely accepted amongst the studied women. We need to enlighten our people more about the benefits of family planning especially through the mass media, which accounted for the least source of referral. Also the fact that 10.2% of the clients had menorrhagia points to the fact that a progesterone containing device like Levonorgestral intrauterine system (LNG-IUS) will make the acceptance of this popular method of contraception better as it reduces menstrual loss, decreases dysmenorrhoea and reduces the risk of pelvic infection by thickening the cervical mucus and at the same time, having a long duration of action of about five years with its contraceptive effects that is quickly reversible. This will be of immense benefit in this environment where the lack of popularity of bilateral tubal ligation and its expense precludes the acceptance of sterilization in women that would have benefited from this procedure.

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