

Full Length Research Paper

Use of injectable progestogen-only contraceptives at the family planning clinic of the Nnamdi Azikiwe University Teaching Hospital Nnewi, Nigeria

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This retrospective study investigates the use of, complications and discontinuation of injectable progestogen-only contraceptives at the family planning clinic of the Nnamdi Azikiwe University Teaching Hospital Nnewi, Nigeria. 392 (29.1%) of the 1345 new clients chose injectable progestogen-only contraceptives. Among them, 51.5% were spacers while 48.5% were limiters. Also 94.9% of the clients used depot medroxyprogesterone acetate (DMPA) while 5.1% used norethisterone enanthate (NET-EN). Majority of the acceptors belonged to the 30-34 years age bracket (35.7%), were grandmultiparous (63.8%), and had achieved secondary education and above (74.5%). Ninety (23.0%) clients experienced various forms of side effects, of which menstrual irregularity was the commonest (5.6%). The overall discontinuation rate was 6.1%, and the main reason for discontinuation was desire for pregnancy (4.1%). There was no pregnancy reported during the study period. The likelihood of reporting complications was significantly associated with age ($\chi^2=34.06$; $p=0.00$), and level of education ($\chi^2=10.18$; $p=0.00$). The injectable progestogen-only contraceptives are not widely accepted in our centre, and are associated with a low discontinuation rate. There is need to scale up their use in the family planning program in the area.

Key words: Injectables, progestogen-only contraceptives, Nnewi, Nigeria.

INTRODUCTION

Low contraceptive prevalence rate with the resultant high fertility rate has been a major reproductive health problem among the developing countries. High parity is still common among these countries. In Nigeria, the contraceptive prevalence rate (proportion of married women using modern methods of family planning) is very low- 15.0%, and as expected the fertility rate (average number of children per couple) is as high as 5.7. (Nigeria Demographic and Health Survey(NDHS), 2008).

Religious beliefs and cultural practices such as the desire for a male child as well as some misconceptions about contraceptive use are some of the factors responsible for poor use of contraceptives in the developing countries (Okonofua, 1996; Adinma and Nwosu, 1993). Other limitations to contraceptive usage include lack of knowledge, obstacles to access and concern over side effects, and fear of infertility (Williamson et al., 2009).

Poor contraceptive practices are also responsible for the high rate of maternal deaths, injuries that are related to unsafe abortion, and grand multiparity in the developing countries (Obiechina et al., 2008; Ogedengbe and Ogunmokun, 2003). In Nigeria, abortion accounts for 40% of all maternal deaths (Okonofua, 2003), and postabortion complications rank high among the gynaecological ward admissions (Igberase and Ebeigbe, 2008; Oye-Adeniran et al., 2002).

Overpopulation arising from lack of proper family planning results in an increased demand on the very limited resources leading to wide scale poverty and deprivation. With the low ranking of most African countries on the human development index, there is no doubt that the smaller the family size, the better the upbringing and development of children.

Hormonal contraceptives are among the earliest methods of family planning and had remained popular among family planning programs. They are either in the combined form-combining estrogen and progestogen or they contain progestogen alone. The major advantage of

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Table 1. The biosocial characteristics of the respondents

Biosocial characteristics	N=392	Percent
Age (years)		
<20	2	0.5
20-24	54	13.8
25-29	80	20.4
30-34	140	35.7
35-39	82	20.9
40 and above	34	8.7
Number of living children		
1	8	2.0
2-4	134	34.2
5 and above	250	63.8
Educational level		
No formal education	20	5.1
Primary	80	20.4
Secondary and above	292	74.5

progestogen-only contraceptives over the combined hormonal contraceptives is that they can be used in clients in whom estrogens are contraindicated and they can be administered as long acting methods such as implants, injectables, dermal patches, intrauterine systems, thus improving patients compliance, and contraceptive efficacy.

The issues that have limited the use of injectable progestogen only contraceptives (IPOCs) include, menstrual irregularity, weight gain and the concern about its effect on bone health especially among the adolescent. However, current evidence supports the use of IPOCs among the young people despite the little effect on bone demineralization (Tolaymat and Kaunitz, 2009; Guilbert et al., 2009).

Menstrual irregularities remain the major setback in the use of this contraceptive commodity accounting for the highest rate of discontinuation among the users. In order to counter this side effect while retaining the advantages of the IPOC as a long term contraceptive, the combined injectable contraceptives (CICs) were developed. These are given monthly and had been shown to have better menstrual bleeding profile leading to lower rates of discontinuation and increased patients' satisfaction (Gallo et al., 2008).

However, the CICs are not yet popular in this country. Also to improve patients compliance and reduce the number of visits to the clinic, the subcutaneous IPOCs were introduced and have shown comparable efficacy and safety profile to the intramuscular IPOCs (Kaunitz et al., 2009).

In Nigeria, the prevalence of IPOC is 2.0% among current users of modern methods of contraception (NDHS 2008). It is easily administered and found to be more popular and acceptable in rural settings (Chigbu et

al., 2010). Depot medroxyprogesterone acetate (DMPA) is more acceptable than norethisterone enanthate (NET-EN) because of its lesser frequency of administration (Ojule et al., 2010; Chigbu et al., 2010)

We considered it pertinent to evaluate the acceptance rate, discontinuation and side effects of the IPOCs in our environment. The knowledge gained from this study shall be of immense value in counselling and scaling up the family planning practice in Nnewi and Nigeria.

MATERIALS AND METHODS

The case files of the new acceptors of the injectable contraceptives at the family planning clinic of Nnamdi Azikiwe University Teaching Hospital Nnewi, Nigeria from 1st January 2000 to 31st December 2009 were retrieved from the Health Records department and using a pro forma form, data was obtained on the age, number of living children, level of education, duration and complications of usage of the injectable progestogen-only contraceptives. Other variables that were analyzed include previous contraceptive use and the reasons for discontinuation. Data analysis was done with Epi info statistical package, version 3.3.2. Descriptive statistics was used to analyze all the variables while the student's t-test was used to determine the difference of mean between populations. Bivariate contingency tables were used to determine the association of the socio-demographic factors and the likelihood of reporting complications utilizing the Pearson's chi square at 95% confidence interval. A p-value of ≤ 0.05 was taken as significant. Data is presented in tables.

RESULTS

The total number of new clients seen at the family planning clinic during this period was 1345 out of which 392 (29.1%) chose injectable progestogen-only contraceptives. There were 10,850 deliveries within the period. Among the acceptors of the injectables, 51.5% used it for birth spacing while 48.5% used it for limiting births. Three hundred and seventy two (94.9%) used depot medroxyprogesterone acetate (DMPA) while 5.1% used norethisterone enanthate (NET-EN).

The sociodemographic profile of the acceptors is shown in table 1. Majority (35.7%) of the acceptors belonged to the 30 - 34 years age group and most of them (63.8%) had more than 4 living children. The mean age and number of living children were 31.4 ± 5.7 years and 5.3 ± 2.1 respectively. Both the mean age of the limiters (33.9 vs 30.0 years) and their number of living children (6.4 vs 4.3) were significantly higher than those for spacers ($p=0.00$). Majority (74.5%) of the clients were educated up to the secondary level or above.

Table 2. The duration of use by the clients (in months)

Duration of use	N=392	Percentage
<12	212	54.1
12-24	70	17.9
25-36	28	7.1
37-48	38	9.7
>48	44	11.2

Table 3. Complications experienced by the respondents

Complications	N=392	percent
Irregular menstruation	22	5.6
Abdominal pain	20	5.1
headache	20	5.1
Weight gain	8	2.0
Hypertension	10	2.6
Decreased libido	6	1.5
Palpitations	4	1.0
No complications	302	77.0

Table 4. previous contraceptive use by the respondents

Previous contraceptive use	N=392	Percent
IUCD	94	24.0
Oral contraceptive pills	28	7.1
Billings method	12	3.1
Injectables	12	3.1
Condom	10	2.6
None	236	60.2

Table 2 shows the duration of use of the contraceptives. Majority (54.1%) of the acceptors had used the contraceptive for less than 12 months while 28.0% had used them for more than 24 months. The mean duration of use was 18.4±19.4 months.

The reported complications are shown in table 3. Ninety (23.0%) of clients experienced various forms of side effects, of which menstrual irregularity was the commonest (5.6%). The other common side effects were headache (5.1%) and abdominal pain (5.1%). Weight gain was reported in 2.0% of the clients. Twenty four (6.1%) of the clients discontinued usage mainly because of the desire pregnancy (4.1%) while the remaining 2.0% discontinued usage on account of the side effects.

Table 4 shows the prevalence of previous contraceptive use among the clients. One hundred and fifty six (39.8%) of the acceptors had used one form of contraceptive, out of which IUCD was the commonest (24.0%) followed by the combined oral contraceptive pills (7.1%). Twelve (3.1%) had used injectables in the past.

There was no pregnancy reported during the study period.

Table 5 shows that there was a significant association between age ($\chi^2 = 34.06$; $p=0.00$) and educational level ($\chi^2 = 10.18$; $p=0.00$), and the likelihood of reporting complications .

DISCUSSION

The number of clients (1345) who attended the family planning (FP) clinic over the ten year period was quite low compared with the total number of deliveries within the same period(10,850), thus giving a family planning prevalence of 12.4% as relative to delivery. This shows a low level of contraceptive practice in the community as previously observed by Udigwe et al (2002). The overall level of contraceptive usage among sexually active women in Nigeria is still very low at 15% (NDHS, 2008). In spite of the high knowledge and awareness of methods of contraception among women and men in Nigeria, the contraceptive prevalence has barely increased from 6% in 1990 to 13% in 2003, and 15% in 2008 (NDHS,2008). This is far less than 75% obtainable in UK which has an unmet need for family planning of 2% and a total fertility rate of 1.7 (Glasier, 2007).

Among the family planning clients in the hospital, 29.1% chose IPOC as a method of family planning. This figure is similar to 21.9% reported in Ilorin (Balogun & Raji, 2009), but less than 45.17% reported in Port Harcourt (Ojule et al.,2010) and 71.8% recorded in a rural area in Southeastern Nigeria (Chigbu et al.,2010). Also IPOC rate of 19.5% was reported in Osogbo (Adeyemi et al., 2008). These variations in the rate of acceptors in Nigeria could be attributed to the methods and skills of family planning counselors, and are also hospital based. The very high rate observed in the rural communities is because of its ease of administration. The Nigeria demographic and health survey (2008) shows that hormonal method of contraception is the commonest because of the ease of its administration.

It is known that the choice of contraception is influenced by age, marital status, fertility intentions, number of living children and socio-economic status (Glasier, 2007). In this study, majority of the IPOC acceptors were in the fourth decade of life and had more than four living children. Maternal age and number of living children influenced the fertility intentions. It was observed that the age of the clients and the number of living children for limiters was higher than those for spacers. This observation has been reported in previous studies (Ezeugwu et al., 2005; Ojule et al, 2010; Balogun and Raji, 2009). Though IPOC is a long acting reversible method of contraception, majority of the acceptors used it for less than 12 months mostly for spacing births. This is not surprising since the mean age of the clients is 31 years, and majority belonged to the

Table 5. The influence of sociodemographic factors on complications experienced by the respondents

Sociodemographic factors	Complications		X2	df	P- value
	Yes (%)	No (%)			
Age (years)					
<20	0(0.0)	2(100.0)	34.06	5	0.00*
20-24	4(7.4)	50(92.6)			
25-29	34(42.5)	46(57.5)			
30-34	32(22.9)	104(77.1)			
35-39	8(9.8)	74(90.2)			
40 and above	8(23.6)	26(76.5)			
Number of living children					
1	0(0.0)	8(100.0)	2.57	2	0.28
2-4	28(20.9)	106(79.1)			
5 and above	58(23.2)	192(76.8)			
Educational level					
No formal education	12(60.0)	8(40.0)	10.18		0.00*
Primary education	12(15.0)	68(85.0)			
Secondary and above	58(19.9)	234(80.1)			
Reasons for use					
Spacers	34(17.0)	166(83.0)	6.34	OR=0.52	0.012
Limiters	54(28.1)	138(71.9)			

*Significant

30-34 years age group which is an active reproductive period.

This study has also shown that IPOC is a safe and effective method of family planning as reported in several studies (Balogun and Raji 2009; Ojule et al., 2010). Only twenty three percent of the acceptors experienced various forms of side effects of which menstrual irregularity was the commonest. Menstrual irregularity is the commonest reported side effect of IPOC (Ezeugwu et al., 2005; Ojule et al, Balogun and Raji, 2009). However, side effects contributed only 2% to the overall discontinuation rate of 6.1%. Weight gain following IPOC usage is controversial (Burkman, 2007). Weight gain was reported in 2% of IPOC acceptors in this study and in 18% among adolescent IPOC users (Polaneczky and Liblanc, 1998).

The use of IPOC has not been shown to increase the risk of arterial or venous diseases. A systematic review of the literature by Bergendal et al. (2009), showed that the risk of venous thromboembolism was not statistically significant. Only 2.6% of IPOC acceptors were found to have developed hypertension over this ten year period of study. The hypertension could be essential and not necessarily related to IPOC use. Also, no thromboembolic disease was reported in this review.

The potential risk with use of IPOC is reduction in bone mineral density (BMD). Though this was not assessed in this study, literature review showed that IPOC causes reversible reduction in BMD but not sufficient to cause skeletal fractures or its withdrawal (Guilbert et al., 2009).

There was no pregnancy reported among users of IPOC in this study as observed in Ilorin by Balogun and Raji (2009). IPOC is an effective long acting reversible

contraception (LARC) with a failure rate of 0.3-3 pregnancies per 100 women years (Burkman, 2007). The effectiveness of IPOC is related to its compliance. The three monthly injection of depot medroxy progesterone acetate (DMPA) is preferred by most clients to the two monthly injection of norethisterone enanthate (NET-EN). Only 5.1% of IPOC users chose NE-ET in this study. This is consistent with previous reports from Nigeria. In Port Harcourt, 65.0% of all users of IPOC preferred DMPA (Ojule et al., 2010). Frequent appointment to FP clinic impairs compliance because of the perceived economic loss from transportation and man hours. This no doubt, adversely affects the efficacy of the commodity and leads to its discontinuation. Among adolescents in New York, USA using DMPA, 23% discontinued because of difficulty with keeping appointments (Polaneczky and Liblanc, 1998). Compliance poses the greatest challenge to the acceptability and efficacy of the newly introduced combined injectable contraceptives (CICs) which are administered every month. Although the CIC has been shown to significantly reduce menstrual abnormalities associated with IPOC, its acceptability is currently poor and it has a high discontinuation rate due to frequent hospital appointments (Gallo et al., 2008).

The intrauterine contraceptive device is the most popular family planning method utilized in Nnewi (Udigwe et al., 2002). This is reflected as the commonest method used previously by the IPOC acceptors. The complications and side effects of the IUCD could be responsible for the acceptance of IPOC in the environment. We advocate further training and re-training of family planning counselors with regard to IPOC to improve its acceptability, since it has been found safe

and effective in our environment.

REFERENCES

- Adeyemi AS, Adekanle DA, Komolafe JO (2008). Pattern of contraceptive choice among the married women attending the family planning clinic of a tertiary health institution. *Niger. J. Med.* 17(1):67-70.
- Adinma JIB, Nwosu BO(1993). Family planning knowledge and practice among Nigerian women attending an antenatal clinic. *Adv. Contracep.* 11: 335 – 344.
- Anate M, Awoyemi O, Oyawoye O(1995). Induced abortion in Ilorin, Nigeria. *Int. J. Gynaecol Obstet.* 49:197-198.
- Balogun OR, Raji HO (2009) Clinical experience with injectable progestogen- only contraceptives at University of Ilorin Teaching Hospital: a five year review. *Niger. Postgrad. Med .J.* 16(4):260-263.
- Bergendal A, Odlind V, Persson I, Kieler H (2009). Limited knowledge on progestogen-only contraception and risk of venous thromboembolism. *Acta. Obstet. Gynecol. Scand.* 88(3):261-266.
- Burkam RT (2007). Contraception and family planning. In: Decherney AH, Goodwin TM, Nathan L, Laufer N, (eds), *Current diagnosis and treatment Obstetrics & Gynecology* 10th ed, McGraw-Hill, New York. pp 579-597.
- Chigbu B, Onwere S, Aluka C, Kamanu C, Okoro O, Feyi-Waboso P (2010). Contraceptive choices of women in rural Southeastern Nigeria. *Niger. J. Clin. Pract.* 13(2):195-199.
- Gallo MF, Grimes DA, Lopez LM, Schulz KF, d'Arcangues C (2008). Combination injectable contraceptives for contraception. *Cochrane Database Syst Rev*:(4):CD004568.
- Glasier A (2007). Contraception. In: Edmonds DK (ed), *Dewhurst's textbook of Obstetrics and Gynaecology* 7th ed, Blackwell Publishing, Oxford, pp 299-317.
- Guilbert ER, Brown JP, Kaunitz AM, Wagner MS, Bérubé J, Charbonneau L et al(2009). The use of depot-medroxyprogesterone acetate in contraception and its potential impact on skeletal health. *Contraception.*79(3):167-77.
- Igberase GO, Ebeigbe PN(2008). Exploring the pattern of complications of induced abortion in a rural mission tertiary hospital in the Niger Delta, Nigeria. *Trop .Doct*; 38:146-148
- Kaunitz AM, Darney PD, Ross D, Wolter KD, Speroff L (2009). Subcutaneous DMPA vs. intramuscular DMPA: a 2-year randomized study of contraceptive efficacy and bone mineral density. *Contraception.* 80(1):7-17.
- National Population Commission (Nigeria) and ICF Macro (2009). *Nigeria Demographic and Health Survey 2008.* Abuja, Nigeria: National Population Commission and ICF Macro.
- Obiechina NJA, Ugboaja J.O, Ezeama C.O (2008). Grandmultiparity: Reasons for the index pregnancy *Trop. J. Med. Res.* 12(2):33-35.
- Ogedengbe OK, Ogunmokun AA (2003). Grandmultiparity in Lagos, Nigeria. *Niger. Postgrad. Med. J.* 10(4):216-9.
- Ojule JD, Orijl VK, Okongwu C(2010). A five year review of the complications of progestogen only injectable contraceptive at the University of Port-Harcourt Teaching Hospital. *Niger. J. Med.* 19(1):87-95.
- Okonofua FE (1996). The case against new reproductive techniques in developing countries. *Brit. J. Obstet. Gynaecol.* 103: 957 – 962.
- Okonofua FE (2003). Abortion. In: Friday Okonofua, Kunle Odunsi (eds), *Contemporary Obstetrics and Gynaecology for Developing Countries.* Women's Health and Action Research Centre (WHARC), Nigeria. Pp. 179 – 201.
- Oye-Adeniran B, Umoh AV and Nnatu SN (2002). Complications of unsafe abortion: a case study and the need for abortion law reform in Nigeria. *Reproductive Health Matters.* 10(19):18–21
- Tolaymat LL, Kaunitz AM (2009).Use of hormonal contraception in adolescents: skeletal health issues. *Curr. Opin. Obstet. Gynecol.* 21(5):396-401.
- Udigwe GO, Udigwe BI, Ikechebelu GI (2002). Contraceptive practice in a teaching hospital in southeast Nigeria. *J. Obstet. Gynaecol.* 22(3): 308-311.
- Williamson LM, Parkes A, Wight D, Petticrew M, Hart GJ (2009). Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research. *Reprod. Health.* 19: 6:3.