

## **USE OF MODERN CONTRACEPTIVE IMPLANTS -THE LAGOS ISLAND MATERNITY HOSPITAL EXPERIENCE.**

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### **ABSTRACT**

**Background:** *Implants are an effective and reversible long-term method of fertility regulation, particularly advantageous to women who wish an extended period of contraceptive protection.* The development of contraceptive implants was made possible by the discovery of silicone and its bio-compatibility in the human body. Silastic tubes with sealed ends and filled with steroids provided a sustained release of the steroids in vitro over months; these models were the precursors of today's contraceptive implants. This technology resulted in the development and patent of Norplant® and Norplant-2 by the Population Council. Over the years, the popularity and use of Norplant has waned due to difficulties in insertion and removal. Lagos Island Maternity Hospital (LIMH) introduced Jadelle and Implanon- the newer forms of implants in the year 2007, with the improvement made on these newer forms, we review the use of modern contraceptive Implant in LIMH.

**Objectives:** The objectives of this study are to demonstrate the socio-demographic and clinical variables influencing acceptors of modern contraceptive implants; to describe observed side effects associated with the use of contraceptive implants; and to ascertain acceptance of contraceptive implants through determination of continuation rate.

**Methodology:** This involved a review of clients who were counseled and accepted subdermal contraceptive implants. The contraceptive implants were inserted by sub-dermal insertion of either Jadelle consisting of 2 rods, into the medial boarder of the upper arm or insertion of Implanon single rod in a similar anatomic location .Data was extracted using an established family planning proforma. Data obtained included socio-demographic features, past obstetric/gynecological history of the respondents and side effects of the implants. Extraction of data was done over a period of one year.(July 31<sup>st</sup> 2011 to June 30<sup>th</sup> 2012)

**Results:** A total of 622 clients made use of various methods of contraception during the study period. The proportion of clients who made use of modern Implants is 11.41% (n= 71). The average age of the respondents is 32years, with a range of 17-49years.The commonest side effect seen is amenorrhea, occurring in 12.7% of respondents (n= 9).Intermenstrual bleeding occurred in 4.2% of respondents (n= 3).

More of the respondents had insertion of Jadelle (69.0%; n= 49). The other respondents had insertion of Implanon (31%; n= 22). The proportion of clients who had no plan for further child bearing is 29.6% (n= 21). The majority of clients are desirous of further child bearing (70.4%; n= 50).First time users

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constituted 52.1% of clients (n=37). Continuation rate was 90.1% (0.9% discontinuation due to side effects). Some of the clients had used the copper TIUD (19.7%; n= 14).

**Conclusion:** Contraceptive Implants have been shown by this study to be an acceptable form of contraception. Majority of the women maintained the use of the contraceptive implants. In women who experienced side effects, amenorrhea is the commonest side effect experienced. The relatively high continuation rate of these implants is a testament of its acceptability. Scaling up its uptake and availability will be useful in reducing the unmet needs for contraception.

## **INTRODUCTION:**

Contraceptive implants are highly effective long term, and reversible method of contraception. Women who use implants find them to be very convenient—they are effective immediately and offer up to 3 to 5 years of extremely reliable contraceptive protection upon one client action. Only a brief, very minor surgical procedure under local anesthesia is needed to place 1 or 2 matchstick-sized plastic rods beneath the skin of the inner upper arm. The development of contraceptive implants was made possible by the discovery of silicone and its bio-compatibility in the human body. Silastic tubes with sealed ends and filled with steroids provided a sustained release of the steroids in vitro over months; these models were the precursors of today's contraceptive implants. This technology resulted in the development and patenting of Norplant and Norplant-2 by the Population Council. Over the years, the popularity and use of Norplant has waned due to difficulties in insertion and removal. It is currently estimated that as much as 220 million women in the world have an unmet need for contraception, many of these women live in sub-Saharan Africa and south east Asia.<sup>1</sup> The Women who use implants find them to be quite convenient. This is due to the fact that they are effective immediately and render as much as 3 to 5 years of extremely reliable contraceptive protection upon one client action. The only requirement is a minor surgical procedure under local anesthesia to place 1 or 2 matchstick-sized

plastic rods under the skin of the inner upper arm.<sup>2,3</sup> The effectiveness of contraceptive implants is such that just one unintended pregnancy occurs among every 2,000 implant users in the first year of use.<sup>4</sup> Implants also offer great promise for helping to meet the needs of younger women, who often face many barriers in accessing effective modern contraception. In a study conducted in Kenyan women ages 18–24years seeking family planning, it was discovered that 24% chose to use contraceptive implants as the method of contraception.<sup>5</sup> implants are considered safe and suitable for nearly all women, including women who are of any age (including adolescents); who have never been pregnant; never had children, are living with HIV, have just had an abortion, or are breastfeeding.<sup>6,7</sup> Women also appreciate the fact that pelvic examinations and laboratory investigations are not needed and that implants can be used discreetly. More so, implants do not interfere with sexual intercourse, and return to fertility upon removal is not delayed or negatively affected.

## **OBJECTIVES:**

1. To demonstrate the socio-demographic and clinical variables influencing acceptors of modern contraceptive implants.
2. To describe observed side effects associated with the use of contraceptive implants
3. To ascertain acceptance of contraceptive

implants through determination of continuation rate

#### **METHODOLOGY:**

The study was conducted at Lagos Island Maternity Hospital Lagos Study. The hospital is a busy and dedicated maternal health unit with a well integrated Family planning and contraception unit with daily clinic patronage.

The study was conducted between the period 31<sup>st</sup> July 2011 to 30<sup>th</sup> June 2012 at the Family planning unit of the clinic. An established family planning proforma was used to extract data from acceptors of modern contraceptive implants. The data obtained were fed into an electronic data base available at the Family planning clinic. The data obtained from the family planning proforma were matched with the data obtained from the electronic data base to ensure accuracy of data used for the study. The clients had received prior counseling on the various methods of contraceptives available at the Family planning unit. The data obtained from the clients include socio-demographic parameters, number, outcome and history of previous pregnancies, previous methods of contraceptives used in the past, reasons for changing method of contraception, relevant menstrual and gynaecological history, personal and family history of medical conditions and desire for future pregnancies. Relevant physical examinations with particular reference to weight, Body mass Index and specific cardiovascular and other systemic examinations. The contraceptive implants were inserted by sub-dermal insertion of either Jadelle consisting of 2 rods, inserted into the medial boarder of the upper arm or insertion of Implanon, single rod in a similar anatomic location. Data was extracted using an established family planning proforma. Data obtained included socio-demographic features, past obstetric/gynecological history of the respondents and side effects of the implants. Extraction of data

was done over a period of one year, 31<sup>st</sup> July 2011 to 30<sup>th</sup> June 2012.

Statistical analysis was done using SPSS version 19.0 and frequency distributions were generated.

#### **RESULTS**

A total of 622 clients made use of various methods of contraception during the study period, and 11.41% of these clients made use of modern Implants(n= 71). The average age of the respondents is 32.08years, with a range of 17-49years. The commonest side effect seen in 12.7% of the respondents is amenorrhea(n= 9). Intermenstrual bleeding occurred in 4.2% of respondents(n= 3). The proportion 69.0% of the respondents who had insertion of Jadelle is 69.0% (n= 49). The remaining 31.0% of the respondents had insertion of Implanon (n= 22). Some of the clients had no plan for further child bearing(29.6%; n= 21). The majority of clients are desirous of further child bearing(70.4%; n= 50). First time users constituted 52.1% of clients(n=37). Some of the clients had used the copper TIUD (19.7%; n= 14).

#### **DISCUSSION:**

The contribution of Implants to contraceptive options utilized by clients during the study period was 11.41%(N=71 out of 622 users of contraceptives). This contribution tend to suggest that contraceptive Implants are not the preferred mode of contraception by clients visiting the Family planning Clinic. This relatively low uptake of implants may be due to the fact that clients may hold some pre-conceived notion about negative side effects of contraceptive implants. Side effects particularly related to irregular vaginal bleeding has been documented as a reason for low uptake and discontinuation; this is as reported in the study done by Fang et al.<sup>8</sup>

The average age of the respondents is 32.08years



with a range of 17-49 years. The age range spans across the extremes of the reproductive age. This reflects the broad range in the age range of acceptors of modern contraceptive implants. The average age of 32.08 years is quite close to the average age of 29 years reported by Croxatto and co workers<sup>9</sup>. The educational level of the acceptors revealed that there is a broad range in this regard as acceptors had primary education and some acceptors had tertiary education. Acceptors with secondary level of education constituted the majority, contributing about 80% of the respondents. Acceptors without any education were the least with 2% of the respondents. This tends to suggest that although education improves the likelihood of accepting contraceptive implants, women who are not educated will accept contraceptive implants if access is made available. This view has been supported by— Haider et al<sup>10</sup> and Secura et al<sup>11</sup>. Amenorrhoea is the commonest side effect seen in this study. This was seen in 12.7% of the respondents.

Amenorrhoea as a side effect have been documented by some other workers, particularly as stated in the work done by Croxatto et al<sup>9</sup> who documented amenorrhoea in as much as 20% of the respondents. Our study however revealed a lower value compared to Croxatto's work<sup>9</sup>. Other side effects related to the menstrual cycle include intermenstrual bleeding and spotting per vagina. This was seen in 2.8% of the respondents. When all menstruation related side effects are added together, the study revealed that only 15.5% of the respondents developed menstruation related side effects. Side effects related to menstrual irregularities are exaggerated when side effects of Implants are being discussed. It is of great significance to note that despite this side effects related to menstrual abnormalities, continuation rate of the contraceptive implant was 90.1% , (n=64). Majority of the women had insertion of Jadelle. Jadelle insertion constituted 69% of

insertions while Implanon insertion constituted 31% of insertions. This pattern was largely informed by availability, because Implanon only became more readily available towards the end of the study period (the last quarter of the year 2011). Majority of the respondents were using the implants as a temporary form of contraception. This is explained by the fact that about 70% of the respondents have plans for further child bearing. This study did not suggest that weight gain is a significant side effect as 1.4% of the respondents had weight loss, while another 1.4% had weight gain. This is a major deviation from the long accepted wide spread opinion that weight gain is a disturbing side effect of the use of contraceptive implants. This opinion has been supported by some studies and refuted by others.

About 48% had used other methods of contraception in the past, as first time users constituted about 52%. This tends to suggest that close to half of respondents are moving from other methods of contraception towards contraceptive implant. While this may suggest a positive trend favouring improve acceptance of contraceptive implant, this may however be influenced by the counseling methods employed by the family planning clinic personnel. Some workers have documented the influence of counseling technique on choice of contraceptive technique by respondents<sup>5,10,12</sup>. Most of the respondents who are changing methods of contraception are changing from the use of the intrauterine contraceptive device. This constituted 41.1% of those changing contraceptive methods. (n=14). Respondents changing from the cu-T intrauterine device may probably be doing this because of side effects related to heavy menstrual flow and risk of infection. Heavy menstrual flow and risk of infection has been linked to the cu-T IUCD<sup>12</sup>. Majority of the respondents continued usage of the

implant, as reflected by 90.1 %.( n=64).The discontinuation rate of the contraceptive implant was generally low at 9.9%. When there is a reason for discontinuation, a desire for a new pregnancy constitute the highest at 5.6%(n=4).Elevated blood pressure was the second commonest reason for removal at 2.8%(n=2).The relatively high continuation rate of the contraceptive implants is a reflection of its acceptability, this is coupled with the fact that respondents are moving from other methods of contraception to the use of the contraceptive implants as depicted by the bar chart.

**CONCLUSION:**

Contraceptive Implants has been shown by this study to be an acceptable form of contraception. Majority of the women maintained the use of the contraceptive implants. Amenorrhea is the commonest side effect in women in the study who experienced side effects. The relatively high continuation rate of these implants is a testament of its acceptability. Scaling up its uptake and availability will be useful in reducing the unmet needs for contraception

Table 1

Demographic Distribution of Respondents					
<b>Education</b>	None	Pry	Sec	Try	Total
	2(2.8%)	6(8.5%)	57(80.3%)	6(8.5)	71(100%)
<b>Religion</b>	Islam	Christianity	Traditional	Others	
	45(63.4%)	26(36.6)	-	-	71(100%)

Table 2

Side effect			
	Frequency	%	Total
<b>Amenorrhea</b>	9	12.7	
<b>Headache</b>	1	1.4	
<b>HPT</b>	4	5.6	
<b>Intermenstrual bleeding</b>	3	4.2	
<b>Weight loss</b>	1	1.4	
<b>Post coital Bleeding</b>	1	1.4	
<b>Spotting PV</b>	2	1.4	
<b>Weight Gain</b>	1	1.4	
<b>None</b>	49	69	71(100%)

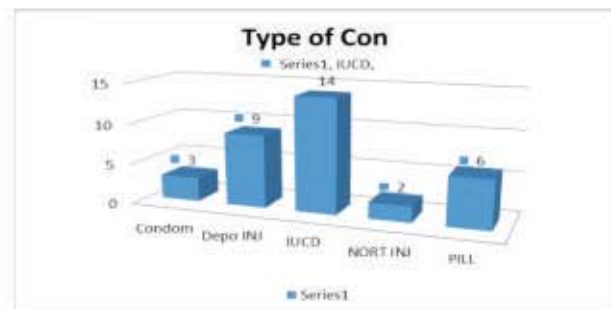
Table 3

Reasons for Discontinuation			
	Frequency	%	Total
<b>Amenorrhea</b>	1	1.4	
<b>Elevated BP</b>	2	2.8	
<b>Pregnancy</b>	4	5.6	
<b>Not discontinued</b>	64	90.1	71(100%)

Table 4

Type of Implants			
	Frequency	%	Total
<b>IMP</b>	22	31.0	
<b>JAD</b>	49	69.0	71(100%)

**Figure 1. PREVIOUS CONTRACEPTIVES USED BY THE RESPONDENTS**



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