African Journal of Health, Nursing and Midwifery
ISSN: 2689-9418
Volume 3, Issue 3, 2020 (pp. 50-65)
www.abjournals.org

LEVEL OF UPTAKE AND FACTORS INFLUENCING LONG ACTING REVERSIBLE CONTRACEPTIVE USE AMONG WOMEN ACCESSING FAMILY PLANNING CLINICS IN YENAGOA, BAYELSA STATE, NIGERIA

Juliet Imawaigha Oniso[1] and Soupriye Bidokumo Zibima[2]

[1]Department of Maternal and Child Health Nursing, Faculty of Nursing Sciences, Niger Delta University Wilberforce Island Bayelsa State.
[2]Department of Medical-Surgical Nursing, Faculty of Nursing Sciences, Niger Delta University Wilberforce Island Bayelsa State Nigeria.

ABSTRACT: *Unintended pregnancy is a major global challenge among sexually active women of reproductive age. The non-use of modern contraceptives such as the Long Acting Reversible Contraceptive (LARC) is a key factor linked with unintended pregnancies. This study investigated the level of LARC uptake and factors that influence its use among women accessing family planning clinics in selected healthcare facilities in Yenagoa Metropolis, Bayelsa State. The study adopted a cross-sectional descriptive survey design. A representative sample of 309 out of a study population of 1,363 was purposefully selected. Data were collected with a validated and reliable self-structured questionnaire and analysed with the Statistical Package for Social sciences (SPSS), Version 23. Mode and standard deviations were used to answer the research questions while Chi square was used to test the null hypothesis at 0.05 level of significance. The data analysed showed a LARC uptake rate of 38.5% and a non-use rate of 61.5%. Jadelle implant was the most (15.2%) used type of LARC while the absence of revisit schedules after LARC insertion and provision of continuous contraception positively influenced respondents' LARC use. However, family and spouse disapproval, inadequate knowledge about the use of LARC, healthcare providers' attitude, cultural/religious beliefs among others, were not perceived as factors that negatively influenced the use of LARC. Intensifying education on LARC use among women of reproductive age may improve its uptake and minimize factors that negatively influence use.*

KEYWORDS: Long Acting Reversible Contraceptive Uptake, Yenagoa, Bayelsa State.

INTRODUCTION

Long Acting Reversible Contraceptives (LARC) are birth control methods that offer protection against pregnancy for at least three years (Hailay, Fisaha, Awajaw, Alua, Massie & Henock, 2014). LARC methods such as Sub-dermal Implants and Intrauterine Device (IUD), have proven to reduce the incidence of Unintended Pregnancy (UP) and by extension unsafe abortions and maternal deaths. The benefits of LARC not only encompass all the advantages of other types of contraceptives such as the Short Acting Reversible Contraceptives [SARC], but also eliminate the disadvantages of other forms of contraceptives (Secura, 2013). LARC are now classified as top contraceptives because of their high-level effectiveness, length of effectiveness, easy reversibility of the birth control process and the rapid and predictable return of fertility when use is discontinued (Hailay et al, 2014).

Nevertheless, a huge gap exists between demand for and uptake of modern contraceptive methods such as LARC to prevent pregnancy. While nearly 75% of married women of reproductive age in Nigeria acknowledged the desire to delay child birth for at least two years or stop bearing children, only 27.3% of them use modern contraceptive method to prevent pregnancy (Kasiye & Abdulbasit, 2017). The relatively low regional LARC uptake levels of 38.7%, 38.6% and 30% in Northern, South-Western and South-Eastern regions of Nigeria indicate a high non-use rate when compared with the proportion of individuals who desired birth control (Mohammed, Joel, Bature, Abubakar, Mohammed, Taingson, 2017).

In Bayelsa State, Nigeria, the situation is not different as uptake levels remained as low as 24% despite the widely acknowledged safety associated with LARC use and the many advantages it has over SARC, (Eugene, Israel, & Atombosoba, 2016). Therefore, the situation needs to be urgently addressed as low levels of LARC uptake among reproductive women are not without health effects. For instance, low levels of LARC uptake have been associated with high rates of UP, unsafe abortions/related complications and maternal deaths (Bahmondes, Villaroel, Natalia, Guzman, Oizerovich, Ramirez & Monteiro, 2018). By implication, with a mean inter-pregnancy interval of 32 months (Addah, Omietimi, & Kotingo, 2015) and an unacceptably high fertility rate of 54.6% - which is the highest in the Nigeria's Niger Delta region (Nengia, 2009); if the low level of LARC uptake is left unaddressed, Bayelsa State may experience a rise in the already high rates of UP, unsafe abortions and maternal and infant mortality. More so, economic and social marginalization of women as well as cost of health services on the part of families and the country, may worsen.

Since barriers and fears underlie underutilization of LARC (Ochako, Mbondo, Aloo, Kaimenyi, Thompson, Temmerman & Kays, 2015), it is imperative to assert that the identification and subsequent elimination or reduction of existing barriers and the reinforcement of predictors of LARC use, can generally improve uptake. Although, substantial research have identified common barriers which are subjective (misinformation, myths & beliefs) and objective (institutional, service-related, training-related, cost-related) in nature, there is need to identify prevailing barriers and predictors of LARC use in areas such as Bayelsa State where uptake seems to be low. Adopting results of other studies prima facie or a blanket policy of the federal government, to develop programs to improve uptake in different populations might yield insignificant results. This is because, as a multi-ethnic nation, cultural characteristics and socioeconomic determinants of contraceptive use which are influenced by globalization varies across population. Thus, a blanket policy on improving contraceptive use may not take into account the subtle differences in sociocultural practices that may influence contraceptive use among different population.

More so, information on LARC uptake and factors influencing its use in Bayelsa state is scant. This study was, therefore, designed to determine the level of LARC uptake and factors influencing its use among women accessing family planning clinics in selected healthcare institutions in Yenagoa Bayelsa State, Nigeria. The study will not only provide information that will assist in the establishment of workable programmes geared towards the improvement of LARC uptake but also predict the vigour with which stakeholders will address contraceptive use in Bayelsa State, Nigeria.

The Objectives of the Study are to:

1. Determine the level of LARC uptake among women accessing family planning clinic in selected health institutions in Yenagoa, Bayelsa State, Nigeria.
2. Identify factors influencing LARc use among women accessing family planning clinics in selected healthcare institutions in Yenagoa Bayelsa State, Nigeria.

Research Questions

1. What is the level of LARC uptake among women accessing family planning clinic in selected health institutions in Yenagoa, Bayelsa State, Nigeria?
2. What are the factors influencing LARC use among women accessing family planning clinics in selected healthcare institutions in Yenagoa Bayelsa State, Nigeria?

Hypotheses

Ho1: - There is no significant difference in LARC uptake based on demographic variables of age, parity and educational attainment among women accessing family planning clinic in selected health institutions in Yenagoa, Bayelsa State, Nigeria.

Ho2: - There is no significant difference in LARC uptake based on place of residence.

CONCEPTUAL REVIEW

Concept of LARC

Long-acting reversible contraceptives (LARC) are methods of birth control that provide effective contraception for an extended period without requiring user action. They include intrauterine devices (IUDs) and sub-dermal contraceptive implants. They are the most effective reversible methods of contraception because they do not depend on patient compliance. So, their failure rates are less than 1% per year (Stoddard, McNicholas & Peipert, 2011). In addition to being long-lasting and convenient to use, LARCs are also cost effective (Stoddard, et al 2011). Typically, LARC users can save thousands of naira over a five-year period compared to the use of condoms and birth control pills (Blumenthal, Voedisch & Gemzell-Danielsson, 2010). LARCs are also readily available, readily reversible; easy to use and does not interfere with sexual pleasure (Weisberg, 2014). Nevertheless, LARCs are underutilized. For instance, only 15.5% of women worldwide use IUDs, and only 3.4% use sub-dermal implants (Blumenthal, et al, 2010).

Empirical Review

Anyanwu and Alida (2017). Uptake of long-acting reversible contraceptive devices in Western region of The Gambia. Methods: A community based cross-sectional study of women attending family planning clinic were studied using interviewer administered questionnaire which included information on socio-demographic factors, reproductive health and contraceptive use of the participants. Results shows about 89 % of study participants used long acting reversible contraceptive methods. Of the three commonly available long acting reversible contraceptive methods, Depo Provera was the most commonly used method; 78 of 141 (55.32%); followed

by implants (43.3%) and intrauterine contraceptive (1.42%). Being housewives, with 3–4 living children and having secondary level education were associated with high uptake of LARC. Conclusion: The uptake of long acting reversible contraceptive was high; with Depo Provera as the most commonly used contraceptive method in The Gambia. There seemed to be an increase in the uptake of implants; with intrauterine contraceptive device being the least commonly used method.

Blackstone, Nwaozuru and Iwelunmor (2017). Factors Influencing Contraceptive Use in Sub-Saharan Africa: A Systematic Review. The purpose of this study was to systematically review the literature regarding factors influencing contraceptive use in sub-Saharan Africa between 2005 and 2015. A total of 58 studies from twelve Sub-Saharan African countries were reviewed. Keywords were grouped using the PEN-3 cultural model. Negative factors prohibiting or reducing contraceptive use were women's misconceptions of contraceptive side–effects, male partner disapproval, and social/cultural norms surrounding fertility. Positive factors included education, employment, and communication with male partner. Blackstone et al concluded that increasing modern contraceptive use in Sub-Saharan Africa is a multi-faceted problem and that it will require community and systems wide interventions aim at counteracting negative perceptions and misinformation.

Mohammed, et al (2017) conducted a study on Uptake and Predictors of Long-Acting Reversible Contraceptives among Women in a Tertiary Health Facility in Northern Nigeria. The study adopted a retrospective study design to evaluate uptake of LARC (intrauterine contraceptive devises and implant). All available client records from the family planning clinic from January 1st, 2000 to March 31st, 2014 were retrieved. Results showed a total of 5992 family planning record cards were retrieved. Some 2319 clients selected to use LARC (38.7%), while 3096 used SARC (51.7%) and 577 did not select a method at the first visit (9.6%)). Intrauterine devices were the chosen LARC for 2047clients (90.2%) and all were copper T brands, while 223 clients (9.8%) used contraceptive implants (Implanon and Jadelle brands). The SARC used were oral contraceptive pills and injectables. There were no records for barrier methods or permanent forms of contraception. Clients using LARC were mostly aged 25 to 39 years, educated up to secondary level or more, Muslims, source of information was mainly from clinic personnel and friends/relatives, had at least one living child and less miscarriages, still wanted more children ("spacers") and previous contraception used was also LARC (all intrauterine devices and no implants). When LARC was compared to SARC, all demographic and other characteristics of clients had significantly different (p value <0.05). Those that are not very educated are more likely to use SARC, while the more educated were more likely to use LARC. Those aged 45 years and above were more likely to use LARC, while those <20 years were more likely to use SARC. Those using LARC were less likely to get information from television. Those with fewer numbers of living children were more likely to use LARC while those with more children were more likely to use SARC. Those with fewer numbers of miscarriages/stillbirths were more likely to use LARC while those with more miscarriages/stillbirths were more likely to use SARC. Those who wanted more children were less likely to use LARC. Clients were more likely to continue the same contraceptive group as their previous contraceptive method, with those choosing LARC most likely to have used intrauterine devices in the past. Mohammed-Durosinlorun and colleques concluded that uptake of LARC is encouraging but still underutilized in the study setting, especially by young nulliparous women. Contraceptive counselling of women should be improved to emphasise the high efficacy, safety and relatively few contraindications of LARC and dispel myths. Uniform

country wide training of service providers and consistent supply of LARC should be ensured by government.

Kabalo (2016) conducted a research on Utilization of reversible long acting family planning methods among married 15-49 years women in Areka town, Southern Ethiopia. A community based cross-sectional study was conducted in a total of 357 women within the study area. Population proportion to size was used to assign sample to kebele and participates were selected by systematic random sampling technique from randomly selected kebeles. Data collection was conducted by trained data collectors, using structured and pretested questionnaire. Finally, data entered, cleaned, and analysed in SPSS 16. Results showed that the utilization of LARC was 106(29.7%) of study participants. Particularly, LARCs utilization were 81(22.7%) for implants and 25(7.0%), Intrauterine contraceptive device (IUCD). Statistically, LARC utilization was (AOR=2.47 at 95%CI (1.24-4.90)) times likely among 26-36 aged mothers compared to 15-24 age groups. Government employed mothers were (AOR=2.59 at 95%CI (1.39-4.79)) times probable to use LARC compared to merchants. Hence, maternal education and occupation were the independent predictors of LARC utilization as the principal findings of this study. The authors concluded that enormous unmet need exist in utilization of LARC within the study area. Mothers' age and occupation were significantly associated with its utilization. They therefore, recommended that health promotion activities on the benefits of LARC be undertaken to increase awareness and usage of contraceptives.

Okafor (2016) had conducted a research on Uptake of Long-Acting Reversible Contraceptive Methods in Enugu State University Teaching Hospital Enugu, South-East, Nigeria. The new client registers in ESUTH, Enugu was reviewed retrospectively from December 31, 2015 back to January 1, 2011. Data on clients' characteristics, and uptakes of LARC and Non-LARC were extracted from the register, entered in Excel 2007 software, analysed, and presented using percentages and graphs. Results showed that a total of 1737 clients accepted the available family planning methods during the five-year study period. One thousand five hundred and sixty-seven (90.21%) accepted LARC while 170(9.79%) only accepted non-LARC. The LARC uptake rate was 90.21%. Majority of the clients were 30-39 years of age 1121(64.54%), 690 (39.72%) had secondary education, 821(47.27%) had tertiary education, and Christians were 1510 (86.93%). The acceptors increased as parity increased with a peak at Para 4 of 490(28.21%). Clients less than 20 years (0.06%), not educated (1.27%), and Para 0 (0.4%) rarely access the family planning clinic. The LARC acceptors opted for jadelle 526(30.28%) and implanon 465(26.77%) sub-dermal implants, depo-provera 276(15.89%), interval intrauterine contraceptive device 232(13.36%), noristerat 48(2.76%), and postpartum intrauterine contraceptive device 20(1.15%). Okafor concluded that there is a very high uptake of LARC in Enugu, Jadelle and implanon constitute over 50% of the LARC uptakes and adolescents (< 20 years), less educated and low parity clients rarely access the family planning clinic.

Dambo, Jeremiah and Wallymahmed (2017), assessed determinants of contraceptive use by women in the central senatorial zone of Bayelsa State, Nigeria. A cross-sectional survey of 210 women between 18 and 49 years was done. Respondents completed a close-ended questionnaire. Descriptive analysis was used for sociodemographic data, and tests of significance were done using SPSS version 20. Results showed that the prevalence of modern contraceptives in the Central Senatorial Zone of Bayelsa State was 36.8%. Condoms were the most common type of contraceptives used. Education, religious beliefs, and knowledge of

fertile days were factors that significantly predicted contraceptive use. Age and number of children influenced the type of contraception a woman used. The authors concluded that contraceptive prevalence is high. They recommended that education and religion should to increase contraceptive use.

METHOD AND MATERIALS

Research Design, Setting, and Population

A cross-sectional descriptive survey design was employed to determine the level of uptake and factors affecting LARC use among women accessing care in selected family planning clinics in Yenagoa Metropolis, Bayelsa state, Nigeria. Yenagoa is the capital city of Bayelsa state. It has an area of 706km and a census population of 353,344. The city which is predominantly inhabited by the Ijaw people, has a functional tertiary and secondary level healthcare facilities and eight (8) primary healthcare centres which offer family planning services. Federal Medical Centre (FMC), Yenagoa, Diete Koki Memorial Hospital (DKMH), Opolo, Comprehensive primary healthcare centre, Agudama, Comprehensive primary healthcare centre, Azikoro, primary healthcare centre, Amarata and the Family support clinic (FSP), Yenagoa were purposively selected for the study due to their relatively large sizes and high patronage for family planning services. An annual record of women who accessed family planning clinic in the selected facilities was obtained. FMC had 223 attendees, DKMH had 207 attendees, Comprehensive primary healthcare centre, Agudama, had 252 attendees, Comprehensive primary healthcare centre, Azikoro had 120 attendees, primary healthcare centre, Amarata had 186 attendees and FSP had 375 attendees, making a total of 1363 attendees. A representative sample size of 309 was thereafter calculated with Taro Yamane's formula for sample size determination. While proportionate sampling method was used to appropriate samples to the selected institutions based on their record of annual attendees, convenience sampling method was employed to reach respondents.

Data Collection/Analysis

Data were obtained with a validated 4-component 44-item questionnaire developed following literature review. The questionnaire enabled the collection of respondents' demographic data, the level of LARC uptake and the factors influencing LARC use. Specifically, components 1 and 2 of the questionnaire which respectively elicited respondents' demographic information and level of LARC uptake, were made up of close ended questions. Whereas, components 3 and 4 which respectively provided information on perceived negative and positive factors influencing LARC uptake, were made up of four-point response scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Component 3 response scale was weighted 4, 3, 2, and 1 for SA, A, D and SD respectively; while component 4 response scale was weighted 1, 2, 3, and 4 for SA, A, D and SD respectively. Women who accessed family planning clinics of the selected facilities and met the inclusion criteria for the study were recruited and mobilized through mobile text messages prior to data collection. Two nurse-research assistants who understood English language and the indigenous languages of Epie and/or Ijaw were also recruited from each of the selected facilities to assist in data collection. Respondents attended to the questionnaire after they had signed or thumb-printed the consent form. Data obtained were analysed with the aid of Statistical Package for Social Sciences

(SPSS) Version 23.0. Descriptive statistics ranging from frequency, percentage and mode were computed where appropriate. Mode guided decision making. Item response mode above 2 in component 3 were rejected as negative factors influencing LARC uptake while item response mode less than 2 in component 4 were accepted as positive factors influencing LARC uptake. Hypothesis was tested for significance at $P \leq 0.05$.

Ethical Approval

Research & Ethics Committees of Bayelsa State Ministry of Health and FMC Yenagoa gave ethical clearance while the Head Nurses of family planning units of the selected facilities gave administrative permits. Informed consent was obtained from respondents.

RESULTS

Demographic Data of Respondents

Christians (291/94.2%) and traders (134/43.4%) took the highest slot in our study. Those aged 30-39 were more in number (142/46.0%) than the other age groups the study considered. Although, more than half (267/86.4%) of the respondents were urban residents, less than half (118/38.2%), had tertiary education. Over half of the respondents (203/65.7%) were married while those cohabiting and those with four or more children were 21.0% and 34.6% respectively. Most of the respondents' spouses (117/57.6%) had college/university education. A higher proportion of respondents' spouses were also self-employed businessmen (93/45.8%).

Table 1: Distribution of Demographic Data of Respondents *(n = 309)*

Variable	Frequency (*f*)	Percentage (%)
1. Age of Respondents		
15 – 29	117	37.9
30 – 39	142	46.0
40 – 49	50	16.0
2. Occupation of Respondents		
House Wife	59	19.1
Farming	26	8.4
Trading	134	43.4
Civil servant	56	18.1
Student	8	2.6
Artisan	26	8.4
3. Religion		
Christianity	291	94.2
Muslim	18	5.8
4. Marital Status		
Married	203	65.7
Single	32	10.4
Widowed	2	0.6
Divorce/separated	7	2.3
Cohabiting	65	21.0

5. Number of Children		
One	29	9.4
Two	72	23.3
Three	101	32.7
Four and above	107	34.6
6. Highest Education Attained		
No Formal Education	19	6.1
Primary Education	58	18.8
Secondary Education	114	36.9
Tertiary Education	118	38.2
7. Residence		
Rural	42	13.6
Urban	267	86.4
8**. Age of Spouse**		
30 – 39	69	23.8
40 - 49	146	50.3
50 – 60	75	25.9
9. Highest Education Attained by Spouse		
No Formal Education	6	2.96
Primary Education	4	1.97
Secondary Education	76	37.4
College/University Education	117	57.6
10. Occupation of Spouse		
Unemployed	25	12.3
Self-employed/Business man	93	45.8
Civil Servant	70	34.5
Artisan	15	7.4

Level of LARC Uptake

Regarding LARC uptake, we found that majority of the respondents (61.5%) did not use LARC. Out of the 38.5% that used LARC, 8.7% used IUD, 15.2% used Jadelle and 14.6% used Implanon.

(n = 309)

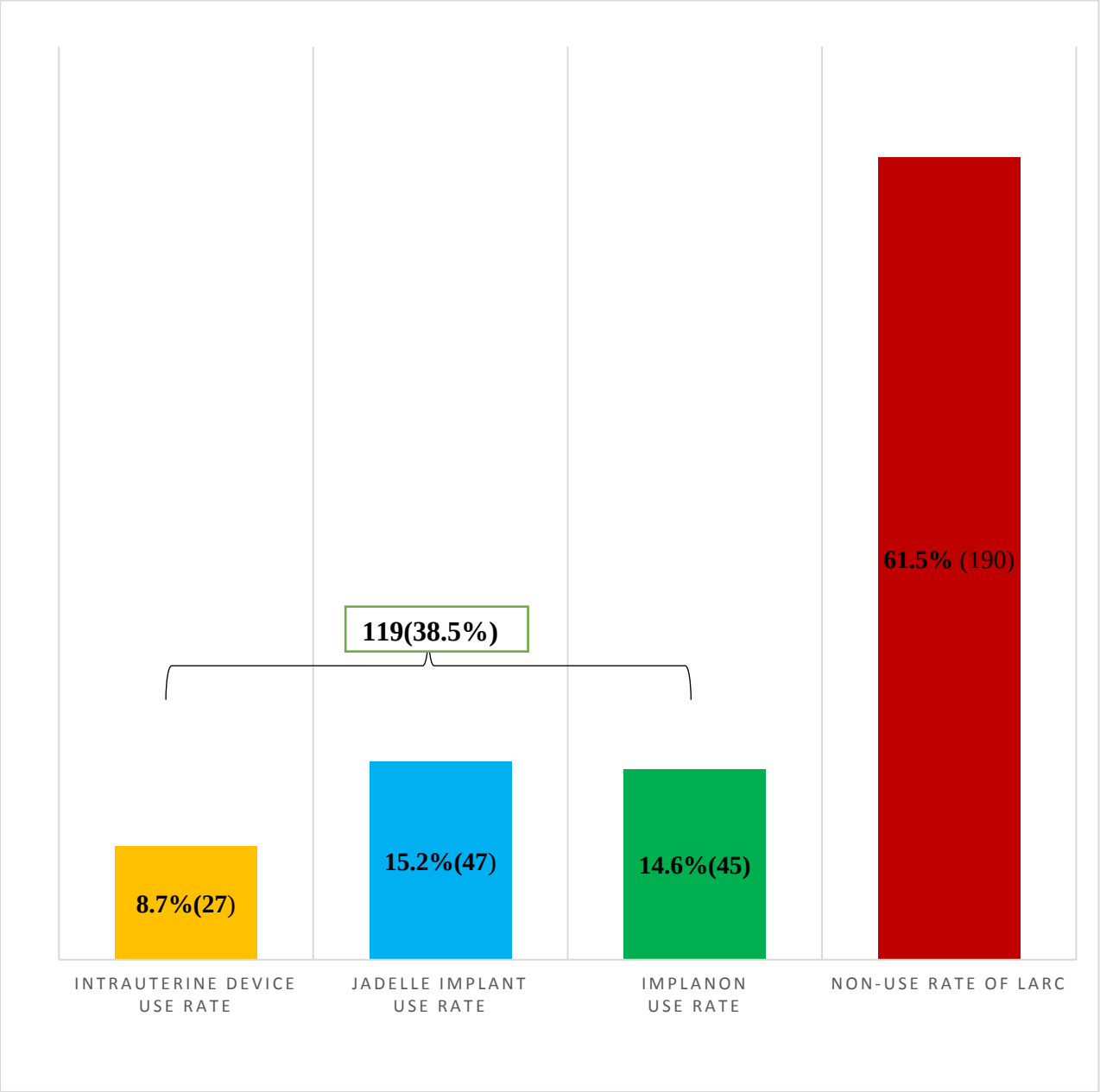

Figure 1: Rate of LARC Uptake

Negative Factors Influencing LARC Use

None of the factors perceived to have negative influence on LARC uptake was acknowledged by respondents. Specifically, respondents did not acknowledge family (***M***2.97/***SD***0.78), culture (***M***3.16/***SD***0.61), religion (***M***2.65/***SD***0.79) and provider attitudes (***M***3.00/***SD***0.58) as factors that negatively influence LARC uptake. Others include misconceptions about the effects of LARC use which include cancers (***M***2.62/***SD***0.74), infertility (***M***2.71/***SD***0.80), osteoporosis (***M***2.83/***SD***0.86), bleeding (***M***2.66/***SD***0.85), headache (***M***2.34/***SD***0.69), tongue protrusion (***M***2.56/***SD***0.76) and madness (***M***2.84/***SD***1.01).

Table 2: Factors to negatively influence LARC Uptake ***(N = 309)***

Items	*M*	*SD*	*Dec*
My family members will not allow me to use LARC	2.97	0.78	Reject
I want more children	3.30	4.38	Reject
My husband disapproves of me using LARC methods	2.93	0.91	Reject
I do not want to use LARC because am having same sex of children	2.91	0.92	Reject
Am afraid of LARC insertions	2.96	0.84	Reject
I heard LARC methods protrudes the abdomen	2.88	0.94	Reject
I am not aware of LARC	2.90	0.65	Reject
I avoid people seeing me in the clinic for LARC insertion	3.05	0.90	Reject
The providers attitude has prevented me from using LARC	3.00	0.58	Reject
My friends said LARC is not good	3.29	0.62	Reject
I just do not like to use LARC	3.12	0.67	Reject
People said LARC moves in the body	3.16	0.61	Reject
They said LARC courses weight lose	2.90	0.65	Reject
They said LARC courses weight gain	3.29	0.62	Reject
They said Someone can get pregnant even with LARC	3.12	0.67	Reject
My culture is against LARC	3.16	0.61	Reject
My church does not allow LARC use	2.65	0.79	Reject
It will be inserted through an operation	2.48	0.81	Reject
They said LARC causes cancer	2.62	0.74	Reject
LARC causes continuous bleeding	2.66	0.85	Reject
RC causes osteoporosis	2.83	0.86	Reject
LARC causes severe headache	2.34	0.69	Reject
It can cause madness	2.84	1.01	Reject
LARC migrates to the brain and cause infertility	2.71	0.80	Reject
After insertion, LARC methods causes constant protrusion of the tongue.	2.56	0.76	Reject

Key: M – Mean; SD – Standard deviation; Dec - Decision

Positive Factors Influencing LARC Use

Only two out of eight factors perceived to have positive influence on LARC uptake were actually acknowledged by respondents. The absence of frequent schedules for revisit after insertion (***M***1.05/***SD***0.62) and nil dependence on user memory (***M***1.26/***SD***0.46) were acknowledged to positively influence LARC uptake while reliability, easy reversibility, safety of use and the elimination of fear of being pregnant, were not acknowledged as factors that positively influence LARC uptake.

Table 3: Respondents' Replies on Perceived Factors that may positively influence LARC Uptake ***(N = 309)***

Items	*M*	*SD*	*Dec*
It is Safe for use during lactation	2.97	0.78	Reject
It makes me to have relaxed mind	3.30	4.38	Reject
No schedules for frequent revisit after insertion	1.26	0.46	Accept
LARC is reliable	2.91	0.92	Reject
I have heard so much about LARC	2.96	0.84	Reject
It prevents pregnancy and is reversible within 21 days of removal	2.88	0.94	Reject
Independent of user memory or schedule, and of sexual intercourse, as it provides continuous contraception	1.05	0.62	Accept
Safe in the majority of women	2.97	0.78	Reject

Key: M – Mean; SD – Standard deviation; Dec - Decision

Hypotheses

Ho1: - There is no significant difference in LARC uptake based on demographic variables of age, parity and educational attainment among women accessing family planning clinic in selected health institutions in Yenagoa, Bayelsa State, Nigeria.

Chi square test of difference showed that significant difference exist in LARC uptake based on demographic variables of age [X^2 *(2, N = 309) = 20.01, P < .005*], parity [X^2 *(3, N = 309) = 28.66, P < .005*] and educational status [X^2 *(3, N = 309) = 15.21, P < .005*].

Table 4: Chi-square Test of Difference in LARC Uptake based on Demographic Variables of Age, Educational attainment and Parity

Demographic Variables	LARC Uptake (N = 309) *Users (f/%)*	*Non-users (f/%)*	Total	df	Pearson Chi-square	Significance (2-sided)
Age						
15 – 29	35(29.4)	82(43.2)	117(37.8)			
30 – 39	51(42.9)	91(47.9)	142(46.0)			
40 – 49	33(27.2)	17(8.9)	50(16.2)	2	20.011	0.000
Total	119(100)	190(100)	309(100)			
Parity						
One	7(5.9)	22(11.6)	29(9.4)			
Two	16(13.4)	56(29.5)	72(23.3)	3	28.663	0.000
Three	34(28.6)	67(35.2)	101(32.7)			
Four and above	62(52.1)	45(23.7)	107(34.6)			
Total	119(100)	190(100)	309(100)			

Highest Educational Status						
No Formal education	11(9.2)	8(4.2)	19(6.1)			
Primary Education	29(24.4)	29(15.3)	58(18.8)	3	15.218	0.002
Secondary Education	29(24.4)	85(44.7)	114(36.9)			
Tertiary Education	50(42.0)	68(35.8)	118(38.2)			
Total	119(100)	190(100)	309(100)			

Ho2: - There is no significant difference in LARC uptake based on place of residence.

LARC uptake was also significantly different among rural and urban residents [X^2 *(1, N = 309) = 19.14, P < .005*].

Table 5: Chi-square Test of difference in LARC Uptake based on Place of Residence

Place of Residence	**LARC Uptake (N = 309)**		**Total**	**df**	**Pearson Chi-square**	**Significance (2-sided)**
	Users (f/%)	***Non-users (f/%)***				
Rural	29(24.4)	13(6.8)	42(13.6)			
Urban	90(75.6)	177(93.2)	267(86.4)	1	19.140	0.000
Total	119(100)	190(100)	309(100)			

DISCUSSION

Level of LARC Uptake

Statistical output on LARC uptake indicates a low level of uptake among respondents (38.5%). Out of 309 respondents, only 119 used LARC, bring about a total non-use rate of 61.5%. Although the test of hypotheses in this study (Table 5) indicates that urban residents are more likely to use LARC than rural residents, the use rate in this study seem not to reflect the huge number of urban residents involved. This may be due to influence of respondents' parity statuses over place of residence; as those with less than four children recorded lower levels of LARC uptake than those with four or more children (Table 4). Specifically, the non-use rate for respondents with less than four children was 76.3% while that of respondents with four or more children was just 23.7%. Thus, the low level of LARC uptake observed in this study could be due to the larger number of respondents with one, two or three children who despite being urban residents, may have showed little or no need or desire to use LARC because of their parity statuses. In order words, it could be inferred that parity status of less than 4 children limits LARC uptake, while parity status of 4 and above and urban residence encourages LRAC uptake.

The low level of LARC uptake observed in this study, however, confirms the findings of a study in Bayelsa State which reported uptake rate of 24% in 2016 (Eugene et al, 2016). Comparing this report with ours indicates that, uptake level has appreciated approximately by just 14% in a three-year period, which is relatively on a slow path. With this sustained low level of LARC uptake, the rate of UP, unsafe abortions/related complications and maternal death may remain high or even increase in our study population. This is because, populations with low LARC uptake history have been associated with records of high rates of UP, unsafe abortions and maternal deaths (Luis, Claudio, Natalia, Silvia, Norma, Ilza, 2017). Thus, urgent steps targeting both urban and rural residents, irrespective of parity status need be instituted to promote LARC uptake.

Our finding on LARC uptake is also consistent with Mohamed et al (2017); Kasiye et al (2017) and Hailey et al (2014) which also reported low LARC uptake among their respondents. However, Okafor (2016) gave a contrasting report in Enugu State, Nigeria, where level of LARC uptake was said to be high.

Factors influencing LARC Uptake

Following respondents' judgement, factors ranging from family, cultural, religious and provider attitudes did not negatively influence LARC uptake. Other factors such as misconception that LARC can cause cancer, osteoporosis, bleeding, headache, tongue protrusion and madness, were also not acknowledged by majority of the respondents as factors that negatively influence LARC uptake. Considering respondents' judgement, it is likely that they possess ample knowledge of LARC and also have viable support systems. For instance, those who had tertiary education were 38.2% while those who had secondary education were 36.9%, making a total of 75.1%. It is, therefore likely that the education they had influenced their sense of judgement regarding the use of LARC as a method of contraception. More so, more than half of respondents' spouses (57.6%) had college/university education. It is also likely, that by virtue of their educational attainment, respondents' spouses might have offered support to their wives and thus, positively influenced their sense of judgement regarding LARC uptake.

This finding, although, contrast with that of Crosignani (2008) and Dambo et al (2017), suggest that misconceptions, erroneous beliefs and barriers to LARC uptake are minimal while knowledge on benefits is ample among our respondents. If this assertion holds true, a likely question is: why then was LARC uptake low in the study population? The probable reason is that, LARC uptake was driven by parity as earlier suggested and because majority of respondents had less than 4 children, it influenced their desire for LARC which resulted to the generally low level of uptake recorded in this study. The implication is that, if encouragement is consolidated, existing support systems are strengthened and education on LARC use is wide spread, more women would accept to use LARC easily irrespective of their parity status and uptake may seemingly appreciate.

Two characteristics of LARC were also found to positively influence its uptake among respondents. The factors include absence of schedules for frequent revisits after insertion and nil dependence on user memory. This finding suggest that respondents may have been burdened by frequent revisits after contraceptive uptake and the responsibility of trying to remember the time of renewal, probably within short periods as it is with most short acting reversible contraceptives. Thus, LARC use might have been encouraged in our study

population because it eliminated the burden of frequent revisits and remembering of renewal time within short periods. However, it is worthy of not that characteristics such as reliability, easy reversibility, safety of use and the elimination of fear of being pregnant, were not acknowledged by majority of respondents as factors that positively influenced LARC uptake. Based on this result, it could be inferred that respondents do not hold much confidence in the reliability, easy reversibility and safety of LARC. Otherwise, reliability, reversibility and safety would have been among the motivating factors for LARC uptake attested to by respondents. There is, therefore, need for more enlightenment on the reliability, reversibility, safety and other benefits of LARC, as this would help correct any existing misconceptions or erroneous beliefs and promote LARC uptake among women of reproductive age.

Difference in LARC Uptake based on Age, Parity and Educational Attainment

Our study found that significant difference exists in LARC uptake based on age ($P < 0.05$), parity ($P < 0.05$) and educational status ($P < 0.05$). Specifically, respondents within the ages of 30-39 and 40-49 were more likely to use LARC than respondents within the ages of 15-29. Also, respondents with four or more children had a higher tendency to use LARC than respondents with one, two or three children; while those who had acquired tertiary education were more likely to use LARC than respondents with lower educational attainment.

Based on this finding, it could be inferred that the need and desire for LARC is driven by age and parity while education may be a key instrument for engineering LARC acceptance. For instance, the highest proportion of respondents in our study had tertiary (118/38.2%) and secondary (114/36.9%) education. The education they had may have, therefore, engineered the high-level acceptance of LARC which is evidenced in their judgement regarding factors that negatively influence LARC uptake. In the same vein, parity may have driven the low level of LARC uptake observed among our respondents as earlier suggested; as majority of the respondents who had between one to three children recorded lower levels of uptake compared to those with four or more children. It is, however, worthy of note that Shiferaw and Musa (2017) and Dambo et al (2017) also reported significant difference in LARC uptake based on age, parity and education.

Difference in LARC Uptake based on Place of Residence.

The test of difference in LARC uptake-based place of residence indicates that LARC uptake is significantly different among rural and urban residents. Specifically, urban residents were more likely to use LARC than rural residents. This may, however, be due to proximity to facilities where LARC services are available and accessible; as Crosignani (2008), implicated availability and accessibility of LARC services as factors determining the level of uptake. It may also be due to the fact that urban residents in most cases have more access to information than their rural counterparts. Nevertheless, the finding suggests the need for rural mass enlightenment on the benefits of LARC among women of reproductive age. It also suggests the need to make LARC services available, accessible and affordable to the rural populace. By so doing, the proportion of rural dwellers who utilize LARC services may increase substantially.

CONCLUSION

The level of LARC uptake in our study population is low and seems to be driven by age and parity. Educational status and residential place also influenced LARC uptake as respondents who had tertiary education tend to use LARC than those with secondary or lower levels of education while, urban residents more likely used LARC than rural residents. Enlightenment campaigns on the safety, reversibility, reliability and other benefits of LARC and providing serviced access to rural dwellers may improve uptake.

Conflict of Interest

There is no conflict of interest among authors.

Acknowledgments

We acknowledge the respondents for their cooperation and swift response upon mobilization. The Heads of family planning units of the selected healthcare facilities are also acknowledged for their support.

REFERENCES

Addah, A.O., Omietimi, J.E., Kotingo, E. L., (2015). Birth Spacing Practices in Bayelsa State of Nigeria: A Cross Sectional Study of Antenatal Women in a Tertiary Centre. Integrated Journal of BRITISH 2 (2): 171-181.

Anyanwu, M & Alida, B.W.N., (2017). Uptake of long-acting reversible contraceptive devices in Western region of The Gambia.African Health Science journal; 17(2)409-417.

Bahamondes, L., Villarroel, C., Guzmán, N.F., Oizerovich, S., Velázquez-Ramírez, N. & Monteiro, I., (2018). The use of long-acting reversible contraceptives in Latin America and the Caribbean: current landscape and recommendations; Reproductive Open Journal: 2018; 2018(1): doi: 10.1093/hropen/hox030

Blackstone, S.R., Nwaozuru, U., & Iwelunmor, I., (2017). Factors Influencing Contraceptive Use in Sub-Saharan Africa: A Systematic Review. International Quarterly of community Health Education journal; 37 (2):79-91. doi: 10.1177/0272684X16685254

Blumenthal, P. D., Voedisch, A. & Gemzell-Danielsson, K., (2010). Strategies to prevent unintended pregnancy: Increasing use of long-acting reversible contraception. Human Reproduction Update. 17 (1): 121–137.

Crosignani, P.G. 2008. Intra uterine devices and intra uterine system. Human Reproduction Update, 14(3):197–208.

Dambo, N.D., Jeremiah, I. & Wallymahmed, A., (2017). Determinants of contraceptive use by women in the central senatorial zone of Bayelsa State, Nigeria: A cross-sectional survey; Nigeria Medical journal; 58 (1):26-31. doi: 10.4103/0300-1652.218409

Eugene, I., Isreal, J and Atombosoba, E., (2016). An Appraisal of Awareness and Practice of Modern Contraception among Prenatal Clinic Attendees in Southern, Nigeria. British Journal of Medicine and Medical Research, ISSN: 2231-0614, Vol.: 15, Issue.: 5

Hailay, G., Fisaha, H., Awrajaw, Alula, Mussie, Henock Y., (2014). Acceptance of Long Acting Contraceptive Methods and Associated Factors among Women in Mekelle City, Northern Ethiopia. Science Journal of Public Health. Vol. 2, No. 4, 2014, pp. 349-355. doi: 10.11648/j.sjph.20140204.27

Kabalo, M.Y., (2016). Utilization of reversible long acting family planning methods among married 15-49 years women in Areka town, Southern Ethiopia; International Journal of scientific Reports; 2(1):1-6.

Kasiye, S and Abdulbasit, M., (2017). Assessment of utilization of long acting reversible contraceptive and associated factors among women of reproductive age in Harar City, Ethiopia Pan Afr Med J. 2017; 28: 222.

Luis, B., Claudio, V., Natalia, G., Silvia, O., Norma, R., Ilza, M., (2017). The use of long-acting reversible contraceptives in Latin America and the Caribbean: current landscape and recommendations. Human Reproduction Open, Volume 2018, Issue 1, 1 January 2018, doi.org/10.1093/hropen/hox030

Mohammed, D.A., Joel, A., Bature, S., Abubakar, A., Mohammed, C., Taingson, M, (2017). Uptake and Predictors of Long-Acting Reversible Contraceptives among Women in a Tertiary Health Facility in Northern Nigeria. Journal of Basic and Clinical Reproductive Sciences doi: 10.4103/2278-960X.194504

Nengia K. (2009). Fertility rate: Bayelsa State tops in Niger Delta region; the Tide Report. Retrieved from www.thetidenewsoline on Septemebr, 2019.

Ochako, R., Mbondo, M., Aloo, S., Kaimenyi, S., Thompson, R., Temmerman, M and Kays, M., (2015). Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study. BMC Public Health 2015, 15:118. DOI 10.1186/s12889-015-1483-1

Okafor, I., (2016). Uptake of long acting contraceptive methods in Enugu State Nigeria, an insight medical publishing group; 13(3):216-220.

Secura, G.M., Madden, T., McNicholas, C., Mullersman, J., Buckel, C.M., & Zhao, Q., (2014). "Provision of no-cost, long-acting contraception and teenage pregnancy". N Engl J Med. 371 (14): 1316–23. doi:10.1056/NEJMoa1400506. PMC 4230891 . PMID 25271604

Shiferaw, K. and Musa, A., (2017) Assessment of utilization of LARC and associated factors among women of reproductive age in Harar city. Pan African medical journal 2017; 28: 222. Doi: 10.11604/pamj.10/11/2017.28.222.13475

Stoddard, A., McNicholas, C. & Peipert, J. F., (2011). Efficacy and Safety of Long-Acting Reversible Contraception. Drugs. 71 (8): 969–980. doi:10.2165/11591290-000000000-00000. PMID 21668037.

Weisberg E., (2014). Developments in Contraception. Expert Opin Pharmacother. Feb;15 (2): 203-10. doi: 10.1517/14656566.2014.862234