

The influence of awareness on uptake of long-acting reversible contraceptives among undergraduate students in Cross River State

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Abstract

The use of long-acting reversible contraceptives (LARCs) among adolescents has generated interest in recent years; however, no published study exists on awareness and uptake of LARCs among undergraduate students in Cross River State. To address this gap, this study examined the relationship between LARC awareness and uptake among undergraduate students in Cross River State, which remains unexplored. Questionnaires were admitted to 341 undergraduate students. Results showed that 59.24% of respondents have heard of LARCs and ever used was 7.62%. and also, the use of LARCs was significantly related to awareness ($X^2= 19.3678, p < 0.001$). Those who are aware of LARCs are more likely to use them as their chosen form of contraceptive. The study recommends that increasing awareness of LARCs among undergraduate will improve access and help prevent unintended pregnancies and enhance reproductive health outcomes among undergraduate students.

Keywords: Awareness, contraceptives, implants, intrauterine contraceptive device, students

Introduction

With its attendant population, Nigeria has one of the highest fertility rates in the world. The average fertility rate in Nigeria is 4.57 children per woman (Statista, 2024). The rate of contraceptive use in Nigeria is estimated at 12% and 28% among married women and sexually active unmarried women, respectively (NDHS, 2019). On the other hand, the unmet need for family planning, which refers to the proportion of women who want to avoid or delay pregnancy but are not using any method of contraception, is 19% among married women and 48% among sexually active unmarried women within the reproductive age of 15-49 (NDHS, 2019). These facts and figures suggest the existence of hindrances to the uptake of contraceptives.

Contraceptive use is one of the most cost-effective health interventions for preventing maternal morbidity and mortality by reducing unintended pregnancies and unsafe abortions. Despite this, the uptake of modern contraceptive methods including long-acting reversible contraceptives (LARCs) remains low, particularly among young people in Sub-Saharan Africa. LARCs are designed for women who are not ready for pregnancy shortly. Regardless of the benefits that LARCs offer, their uptake in many countries and even in Nigeria remains low, especially among young women of reproductive age (UNICEF, 2021).

Long-Acting Reversible Contraceptives (LARCs) are birth control methods that can provide effective contraception for the user for a more extended period without requiring them to take any action. Once administered, they can last for three or more years in the body without further action (Machado et al., 2017). LARCs methods include subdermal contraceptive implants, which are placed beneath the skin, and intrauterine contraceptive devices (IUCDs), which are inserted into the woman through her vagina. These methods are highly reliable, convenient, and, most importantly, reversible. LARCs are designed for women who are not ready for pregnancy shortly. Regardless of the benefits that LARCs offer, their uptake in many countries and even in Nigeria remains low, especially among young women of reproductive age (UNICEF, 2021).

The uptake of long-acting reversible contraceptives (LARCs) among women of reproductive age (15-49 years) in Nigeria and around the world remains significantly low despite the high incidence of unintended pregnancies and the demonstrated efficacy of these contraceptive methods. In Nigeria, unintended pregnancies, abortions, and age at sexual debut are a substantial concern. In Nigerian universities, a greater percentage of students engage in high sexual activities using unsafe contraceptive methods and the rate of unwanted pregnancy and induced abortion is high because of low contraceptive use (Ajayi et al., 2017; Akinsoji et al., 2015; Onebunne et al., 2019).

Knowledge about LARCs, including their efficacy, safety, and side effects, is a critical determinant of uptake. Misconceptions and lack of awareness about LARCs are common barriers, particularly in regions where contraceptive education is limited (Bader et al., 2014). Studies (Ahmad et al., 2018; Coates et al., 2018; Fridy et al., 2018; Hall et al., 2016; Payne et al., 2016; Sanni et al., 2023) have shown that women with a good understanding of long-acting reversible contraceptives (LARCs), including their benefits, risks, and side effects, are more likely to consider using them. Conversely, limited knowledge or misconceptions about LARCs can lead to hesitancy or even fear. For instance, Gomez et al. (2015) reported that women who found IUDs attractive due to ease of use, the ability to have sex without interruption or a barrier method, the option of a nonhormonal method,

potential length of use, the internal nature of the method, or high effectiveness were more likely to use it. On the flip side, women who found IUDs unattractive due to the devices being inside their bodies, the need for provider insertion and removal, or potential pain during insertion were less likely to be interested. Therefore, this study aims to assess the relationship between awareness and the uptake of LARCs among undergraduate students at the University of Calabar, Nigeria which remains relatively unexplored. Our hypothesis is that ever-use would be positively correlated with awareness of LARC.

Method

The cross-sectional study was conducted at the University of Calabar, Cross River State, Nigeria. The population of the study comprised all undergraduate female students of the University. Using a multistage sampling, twelve faculties were randomly selected and one department was also randomly selected from each of the faculties in the second stage. Finally, a sample of 341 students was drawn. The instrument for data collection was a structured questionnaire. The reliability of the instrument was established through Pearson Product Moment Correlation Coefficient analysis to determine the test-retest reliability estimate. The study adopted Computer-Assisted Personal Interviews (CAPI) to collect data from 341 female undergraduate students. These data were subsequently exported to the Stata version 18 application for analysis. Data were analyzed using descriptive statistics such as frequency counts, percentages, and means, while hypotheses were tested using Chi-square at 0.05 level of significance.

Measures

Knowledge of long-acting reversible contraceptives (LARCs) was the independent variable. It was assessed based on whether respondents had heard of implants or intrauterine devices (IUDs). Asking “have you heard of implants or IUDs? (either as a combined question or as two items) is more informative than using the generic term LARC, as implants and IUDs are the actual methods young people use. Knowledge was measured using two items asking whether respondents had ever heard of contraceptive implants and IUDs. Each item was coded as 1=‘yes’ and 0=‘no’. A composite binary variable was then created and scored ‘1’ if the respondent had heard of either implants or IUDs, and ‘0’ if they had heard of neither. This composite variable was also used as an indicator of LARC knowledge. Respondents were also asked if they had ever used implants or IUDs (as a combined question) to determine LARC use. A respondent was assigned ‘1’ if they had ever used implants or IUDs, and ‘0’ if they had never used them.

Results

Of the 341 participants included in the study, 175 (51.3%) are aged 22 -24 years, 138 (40.5%) are in their second year of study, and 307 (90%) are single. Furthermore, 304 (89.2%) reside in the urban area, 317 (93%) are Christians, and 115 (33.7%) currently living with their parents (Table 1). Table 2 reveals that 26 participants (7.6%) have ever used LARCs (Implants and IUDs). The modern contraceptives most commonly known by respondents are condoms (n=338, 99.4%), pills (n=228, 67.1%), IUDs (n=213, 62.5%), emergency contraceptives (=207, 60.9%) and implant (n=184, 54%). Common sources of family planning are family and friends (n=278, 81.5%) and school teachers (n=201, 58.9%).

As shown in Table 3, knowledge of implants ($p < 0.001$), IUDs ($p < 0.001$) and LARCs ($p < 0.001$) is significantly associated with LARC use. Among the 194 respondents who have heard of implants, 13.4% have ever used LARCs. Similarly, 11.9% of the 219 respondents who have heard of IUDs were LARC users, and 12.9% of the 202 respondents who know of LARCs have used them.

Table 1: Demographic characteristics of respondents (n=341)

Variables	No. of Respondents	Percentages (%)
Age (in years)		
18-21	166	48.7
22-24	175	51.3
Year of study		
First	102	29.9
Second	138	40.5
Third	63	18.5
Fourth	29	8.5
Fifth and above	9	2.6
Marital Status		
Single	307	90
Married	33	9.7
Divorce/Separated/Widow	1	0.3

Usual place of residence		
Rural	37	10.9
Urban	304	89.1
Religion		
Christianity	317	93.0
Traditional	7	2.1
Others	17	5.0
Currently living with		
Parents	115	33.7
Boyfriend/husband	43	12.6
Alone	101	29.6
Others	82	24.1

Source:

Table 2: Respondents' awareness of contraceptives

Variables	No. of respondents	Percentage (%)
Methods known		
Condoms	338	99.4
Injectables	25	7.4
Pills	228	67.1
Implant	184	54.0
IUDs	213	62.5
Sterilization	4	10.0
Emergency contraceptives	207	60.9
Sources of family planning		
Radio	93	27.3
Television	125	36.7
Print media	74	21.7
Healthcare professional	136	39.9
Family and friends	278	81.5
NGO	111	32.6
Religious organization	12	3.5
Social media	166	48.7
School teachers	201	58.9
Composite LARC knowledge		
Have LARC knowledge	150	44.0
No LARC knowledge	191	56.0

Source:

Table 3: Association between participants knowledge and LARC utilization among undergraduate students (N=341)

Variables	LARC users 26, 7.6% (n %)	LARC non-user 315, 92.4% (n %)	Total (n)	X ²	P-value
Ever heard of Implants					
Yes	26 (13.4)	168 (86.6)	194	21.3271	0.000*
No	0 (0.0)	147 (100.0)	147		
Total					
Ever heard of IUDs					
Yes	26 (11.9)	193 (88.1)	219	15.6795	0.000*
No	0 (0.0)	122 (100.0)	122		
Ever heard of LARC methods					
Yes	26 (12.9)	176 (87.1)	202	19.3678	0.000*
No	0 (0.0)	139 (100.0)	139		

*Significant at p<0.05

Discussion

The study assessed the knowledge of LARCs, implants and IUDs and its association with LARC utilization among undergraduate students at the University of Calabar. Results show low LARC prevalence, with fewer than 1 in 10 respondents having ever used LARCs. Only respondents with knowledge of implants (13.4%), IUDs (11.9%), or LARCs (12.9%) were more likely to utilize LARCs.

Although the LARC prevalence among the student was 7.6%, this was less than the Cross River State prevalence of 11.1% for implants but higher than the 0.4% for IUDs reported by the NDHS (2024). It also differed from a survey of female college students in Debre Berhan town, Ethiopia, where 23.4% of sexually active students currently use LARCs (Birhane et al., 2016). Among LARC users, most (13.4%) used implants compared to 11.9% who use IUDs- a pattern consistent with Isa et al. (2020), who found 43.1% of LARC users chose implants versus 9.0% for IUCDs, and with Birhane et al. (2016), where implants were the most popular method (23 of 26 users, or 88.5%).

However, knowledge was higher for IUDs (62.5%) than implants (54.0%), contradicting Bolarinwa and Olagunju (2022), who reported greater awareness of implants (70.3%) than IUDs (55.5%) among Nigerian women. Although 6 in 10 respondents knew of IUDs and 5 in 10 knew of implants, fewer than 1 in 10 used LARCs. This gap aligns with findings from Undelikwo and Ikpi (2018) in Cross River State, who noted that high awareness of contraceptives declines sharply with actual use. Bolarinwa and Olagunju (2022) also showed a correlation between LARC knowledge and use among contraceptives users in Nigeria, yet the 7.6% utilization rate here indicates knowledge does not always translate to use. This contrast with Desalegn et al. (2019), who found the likelihood of using long-acting and permanent methods (LAPCMs) was five times higher for those with high knowledge and three times higher for moderate knowledge.

A major limitation of the study is social desirability and recall bias, which may have affected responses, a point also noted in previous studies (Undelikwo et al., 2024; Undelikwo et al., 2025). Despite this limitation, including students from all years of study, both unmarried and married, was a key strength of the study. The study also adds to our understanding of the association between knowledge and LARC utilization.

Conclusion

This study shows that although undergraduate students are aware of long-acting reversible contraceptives (LARCs), this awareness does not consistently translate into uptake. The low prevalence of LARC utilization reported highlights the need for focused, ongoing programs to address barriers and reduce the likelihood of unwanted pregnancies. To increase accessibility and uptake, incorporate reproductive health education should be incorporated into core health curriculum and university orientation programmes with a focus on LARC options. Undergraduate populations must be given priority in order to promote equal access to contraception, which will improve public health in the long run by lowering the rate of unwanted pregnancies.

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