

Sexual Behaviour, Contraceptive Knowledge and Use among Female Undergraduates in Tertiary Institutions in Imo State, Nigeria

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Abstract Background: Undergraduates of tertiary institutions are predominantly adolescents and young adults who are at various stages in a continuum of physical and psychological changes associated with enormous social interactions, relationships and risks. **Objective:** To assess the sexual behaviour, contraceptive knowledge and use among the female undergraduates in two tertiary institutions in Imo State, Nigeria. **Methods:** A cross sectional descriptive study design carried out among 386 female undergraduates from two tertiary institutions in Imo State. They were selected using multi stage random sampling technique and information was collected using a pretested self-administered semi structured questionnaire. **Results:** The mean age of the participants studied was 22.3 ± 3.3 years and 71.2% (262) of them have had sex before, out of which 72.5% (190) were currently sexually active. There was a high awareness about contraception (92.3%), though only 37.5% of them had good knowledge about contraceptives and the condom (51.6%), was the most mentioned. More than half of the participants (54.4%) reported the use of contraceptives with marital status and location of secondary schools attended by participants significantly affecting contraceptive use, $p < 0.05$. The condom (52.1%) was reported as the most commonly used contraceptive. **Conclusion:** Despite the high awareness of contraceptives noticed in this study, the knowledge level and the use of contraceptives among the participants were low. So there is a need to create better awareness about contraceptives and its use among students in the tertiary institutions in Nigeria.

Keywords: sexual behaviour, contraceptive knowledge, contraceptive use, female undergraduates, Imo State

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1. Introduction

Adolescent sexual behaviour has been recognized as an important health, social and demographic concern in the developing world with the knowledge of contraceptives and contraceptive use being an important indicator of sexual health among adolescents and young adults. In Nigeria, the contraceptive behaviour and practice may be associated with the observed total fertility rate of 5.5%, the current use of family planning of any method at 15% and women aged 15-19 who are mothers or currently pregnant at 23%. [1] The adolescent and young adult's relative independence, lifestyle and the changing cultural environment within an undergraduate institution predispose them to poor reproductive health choices and behaviour which has become a serious concern in Nigeria and the global community at large.

Contraceptive use has increased worldwide but in Nigeria, especially among the undergraduates, there seems

to be a persistent gap between high sexual activity and contraceptive use in the presence of high contraceptive awareness. In Nigeria, sexual activity among undergraduates is high which has created a host of social and health problems. Previous studies reported risky sexual behaviours among youths, particularly undergraduate students, indicating that they are at high risk of unwanted pregnancies, early childbearing and unsafe abortion due to unsafe sex. [2,3] Also this has made them most vulnerable to Human Immunodeficiency Virus (HIV) and other sexually transmitted infections (STIs). The United Nations estimated that nearly one of every two new HIV infections worldwide occurs among young adults between 15 and 24 years old [4].

Reviewed studies in Nigeria and Tanzania revealed that female undergraduates were highly sexually active with a vast majority of them having a high awareness about contraception and low use of contraceptives. The male condom was reported in all the studies as the most widely employed form of contraceptive. [2,5,6] Sexual behaviours and contraceptive use among the adolescents and young adults not only vary across countries and regions but also

within a given country. This may be due to the fact that sexual and reproductive health issues are considered sensitive topics to discuss due to cultural and religious reasons and as a consequence there is general lack of information to adolescents and young adults concerning these issues with the risk of being left with misconceptions and ignorance [7].

These barriers of misconceptions and ignorance have led to low level utilization of contraceptives amongst the adolescents and young adults where individual factors such as risk perception, fear of side effects, and opposition from male partners have been reported [8].

Furthermore, low utilization of contraception has been attributed to limited capacity of the health care system and structure within which family planning services are offered. [9] The high rates of unwanted pregnancies and unsafe abortions within the Sub Saharan African region among our adolescents and young adults have also been associated with low level of contraceptive utilization [10].

In Nigeria, women aged 15-44 years obtain approximately 610,000 abortions yearly, at a rate of 25 abortions per 1,000 women with adolescents and young adults being disproportionately affected by the consequences of unsafe abortion. Though this rate is lower in the poor, rural regions of northern Nigeria, it is much higher in the southern regions. [11] In Ethiopia the rate of abortion among students was found to be three fold the national rate. [12] The success of any family planning programme activity is determined by the level of current use of contraceptives as this would reduce the incidence of unintended pregnancy, unsafe abortion and other negative outcomes with a view to achieving the Millennium Development Goals [13].

There is the need to understand the sexual behaviour, knowledge and contraceptive use among this high risk group in order to contribute to the development and implementation of reproductive health strategies to promote appropriate contraceptive practice amongst the undergraduates. Thus the aim of this study was to assess contraceptive behaviour and use among female undergraduates in tertiary institutions in Imo State.

2. Methodology

2.1. Study Area

The survey was conducted in two tertiary institutions in Owerri, Imo State, namely; the Federal University of Technology Owerri and Federal Polytechnic Nekede. Owerri is an urban town with an estimated population of 400,000 and it is approximately 40sq miles and its boundaries to the east and south is the Otamiri and Nworie rivers respectively. The Federal University of Technology (FUTO) is one of the oldest universities in the South Eastern part of Nigeria and was established in 1980 with 5 schools and 32 departments. The Federal Polytechnic Nekede (FPN) was established as a College of Technology later renamed Polytechnic which finally became a Federal Institution in 1993 with 5 schools and 27 departments.

2.2. Study Population and Study design

The study population comprised female undergraduate students of reproductive age from the two selected tertiary

institutions in Imo State, Nigeria. The study design was a cross sectional descriptive study carried out on 368 participants from two tertiary institutions. A multistage sampling technique was used to select the sample.

2.3. Sample Size Estimation and Sampling Technique

A sample size of 368 participants was used for this study and this was calculated using Cochran formula [27] for categorical data in populations' greater than 10,000 people.

$$N = \frac{Z^2 pq}{d^2}$$

When N = appropriate sample size, Z= normal standard deviate at alpha level of 0.05= 1.96, p= proportion of the target population reported to be currently using any form of contraceptive in Nigeria. q= estimate of variance and d= acceptable margin of error set at 0.05.

A multistage sampling technique was used to select the participants. The first stage involved the stratification of the institutions into 2 categories; Universities and other tertiary institutions (Polytechnics, Colleges of Education and Monotechnics) and then simple random sampling was used to select the institution that was studied in each category. Thus Federal University of Technology Owerri (FUTO), and Federal Polytechnic Nekede (FPN), were selected respectively in each of the categories.

Stage two involved the selection of faculties to be studied and using simple random sampling, three faculties were selected from each of the institutions.

Stage three involved the selection of the departments to be studied and using simple random sampling, three departments were selected from each of the faculties. Then in each of the departments, proportionate stratified simple random sampling was used to select the number of female students to be studied based on the estimated populations of the departments and the class levels.

2.4. Data Collection and Analysis

A pretested semi structured, self-administered questionnaire was used to collect information on the socio-demographic characteristics, sexual behaviour, contraceptive knowledge and usage. The knowledge was scored using the number of contraceptive methods mentioned by each participant. It was assessed to be poor if they mentioned up to one method, fair if they mentioned two to three methods and good if they mentioned four or more methods. The returned questionnaires were checked for errors and analysed using SPSS version 18. The data was presented using frequency tables and percentages. The chi-square was used to test for significant associations between variables and p-value was set at 0.05.

2.5. Ethical Approval

Appropriate entry permission was sought to conduct the study from the institutions and verbal consent was given by respondents. Ethical clearance was obtained from Imo State University Teaching Hospital Ethics Committee (IMSUTHEC).

3. Results

Most of the participants were single (83.7%) and between the ages of 20-24 years (52.9%).

Majority of the participants were Ibos (85.6%), Christians (95.9%) and attended urban secondary schools, (63.6%) (Table 1).

Table 1. Distribution of the Socio-demographic characteristics

| Socio- demographic characteristics | Frequency | Percentage |
|--|------------|------------|
| Age | | |
| <20 | 95 | 95 |
| 20-24 | 195 | 195 |
| 25-29 | 58 | 58 |
| >30 | 20 | 20 |
| Total | 368 | 368 |
| Tribe | | |
| Igbo | 315 | 315 |
| Hausa | 8 | 8 |
| Yoruba | 15 | 15 |
| Others | 30 | 30 |
| Total | 368 | 368 |
| Religion | | |
| Christianity | 353 | 353 |
| Islam | 12 | 12 |
| Others | 3 | 3 |
| Total | 368 | 368 |
| Marital status | | |
| Single | 308 | 308 |
| Married | 60 | 60 |
| Total | 368 | 368 |
| Location of Secondary School attended | | |
| Rural | 134 | 134 |
| Urban | 234 | 234 |
| Total | 368 | 368 |
| Institution | | |
| FUTO | 167 | 167 |
| FPN | 201 | 201 |
| Total | 368 | 368 |

Most of the participants (71.2%), have had sex with 72.5% of those who have had sex being currently sexually active. There was a high awareness of contraception (92.3%), with only 38% of the participants having good knowledge about contraception. Among the participants, the condom was the commonest known contraceptives (51.6%), followed by the oral pills (24.3%) and the least known was the Intrauterine devices (6.1%). None of the participants mentioned vasectomy, tubal ligation and diaphragms. The main sources of contraceptive information among participants were; friends and relatives (40.8%), followed by the mass media (28.8%), and the least was from Community Health Workers (2.4%) (Table 2).

More than half (54.4%), of the participants reported the use of contraceptives and 30% of the participants that used contraception experienced contraceptive failure. The condom was reported as the most commonly used contraception (52.1%), followed by the oral contraceptive pills (31.1%), and the least used was intrauterine devices (2.1%).

Table 2. Distribution of Sexual behaviour and contraceptive knowledge

| Variables | Frequency | Percentage |
|--|------------|------------|
| Have you had sex before (n=368) | | |
| Yes | 262 | 71.2 |
| No | 106 | 28.8 |
| Total | 368 | 100 |
| Currently sexually active(n=262) | | |
| Yes | 190 | 72.5 |
| No | 72 | 27.5 |
| Total | 262 | 100 |
| Contraception Awareness (n=368) | | |
| Yes | 340 | 92.3 |
| No | 28 | 7.7 |
| Total | 368 | 100 |
| Contraceptive methods awareness**(n=340) | | |
| Condoms | 281 | 51.6 |
| Oral pill | 132 | 24.3 |
| Injectable | 50 | 9.2 |
| Natural methods | 48 | 8.8 |
| Intrauterine devices | 33 | 6.1 |
| level of knowledge about contraceptives (n=368) | | |
| Good(≥ 4) | 138 | 37.5 |
| Fair(2-3) | 138 | 37.5 |
| Poor(0-1) | 92 | 25.0 |
| Total | 368 | 100 |
| Sources of contraception information**(n=340) | | |
| Friends/relatives | 191 | 40.8 |
| Media | 135 | 28.8 |
| Doctors/nurses | 109 | 23.3 |
| Books/magazines | 22 | 4.7 |
| Com health workers | 11 | 2.4 |

** Multiple selections by participants applicable

Table 3. Distribution of Contraceptive use

| Variables | Frequency | Percentage |
|--|------------|------------|
| Contraceptive use (n=368) | | |
| Yes | 185 | 50.3 |
| No | 183 | 49.7 |
| Total | 368 | 100 |
| Types used ** (n=185) | | |
| Condoms | 149 | 52.1 |
| Oral pill | 89 | 31.1 |
| Injectable | 24 | 8.4 |
| Natural methods | 18 | 6.3 |
| IUCD | 6 | 2.1 |
| Source of Contraceptives (n=185) | | |
| Patent medicine stores | 130 | 70.3 |
| Hospitals | 35 | 18.9 |
| Health centres | 20 | 10.8 |
| Total | 185 | 100 |
| Difficulty in accessing contraceptive (n=185) | | |
| Yes | 82 | 44.3 |
| No | 103 | 55.7 |
| Total | 185 | 100 |
| Nature of difficulty (n=82) | | |
| Unavailability | 46 | 56.0 |
| Cost | 36 | 44.0 |
| Total | 82 | 100 |
| Experienced contraceptive failure (n=185) | | |
| Yes | 55 | 30.0 |
| No | 130 | 70.0 |
| Total | 185 | 100 |

** Multiple selections by participants applicable.

Most of the participants (70.3%), reported patent medicine stores as the commonest source of their contraceptives while a few of the participants (10.8%), reported the health centres as their source. About 55.7% of participants reported that they had no difficulty in accessing contraceptives but of those that had difficulty accessing contraceptives, 56%, reported that the nature of the difficulty was due to the unavailability of the desired contraceptives (Table 3).

Most of the participants using contraceptives were Ibo (92%), Christians (97%) and single (95%) within the ages

of 20-24years (57.3%) while the least contraceptive use was observed among the participants over 30 years of age. Tribe ($\chi^2=0.258$, $p=0.968$), religion, ($\chi^2=0.244$, $p=0.885$), type of institution, ($\chi^2=1.40$, $p=0.236$), and age ($\chi^2=3.615$, $p=0.306$), were not significantly associated with contraceptive use. On the other hand, marital status was significantly associated with contraceptive use. ($\chi^2=24.14$, $p=0.000$). Also contraceptive use was significantly higher in participants that attended urban secondary schools (60.2%) than their counterparts that attended rural secondary schools, ($\chi^2=10.31$, $df=1$, $p=0.001$) (Table 4).

Table 4. Socio Demographic Characteristics, Type of Institution and Contraceptive use

| Variables | Contraceptive use | | | X ² | p-value |
|--|-------------------|------------------|-----------------|----------------|---------|
| | Yes (%) | No (%) | Total (%) | | |
| Age | | | | | |
| <20 | 36(48.0) | 39(52.0) | 75(100) | 3.6146 | 0.306 |
| 20-24 | 106(54.1) | 90(45.9) | 196(100) | df=3 | |
| 25-29 | 35(64.8) | 19(35.2) | 54(100) | | |
| >30 | 8(53.3) | 7(46.7) | 15(100) | | |
| Total | 185(54.4) | 155(45.6) | 340(100) | | |
| Tribe | | | | | |
| Igbo | 170(54.8) | 140(45.2) | 310(100) | 0.2582 | 0.968 |
| Hausa | 3(50.0) | 3(50.0) | 6(100) | df=2 | |
| Yoruba | 4(50.0) | 4(50.0) | 8(100) | | |
| Others | 8(50.0) | 8(50.0) | 16(100) | | |
| Total | 185(54.4) | 155(45.6) | 340(100) | | |
| Religion | | | | | |
| Christianity | 179(54.4) | 150(45.6) | 329(100) | 0.2444 | 0.885 |
| Islam | 4(50.0) | 4(50.0) | 8(100) | df=1 | |
| Others | 2(66.7) | 1(33.3) | 3(100) | | |
| Total | 185(54.4) | 155(45.6) | 340(100) | | |
| Marital Status | | | | | |
| Single | 175(59.7) | 118(40.3) | 293(100) | 24.14 | 0.000* |
| Married | 10(21.3) | 37(78.7) | 47(100) | df=1 | |
| Total | 185(54.4) | 155(45.6) | 340(100) | | |
| Location of Secondary School attended | | | | | |
| Rural | 43(41.3) | 61(58.7) | 104(100) | 10.311 | 0.001* |
| Urban | 142(60.2) | 94(39.8) | 236(100) | df=1 | |
| Total | 185(54.4) | 155(45.6) | 340(100) | | |
| Type of Institution | | | | | |
| University | 80(51.0) | 77(49.0) | 157(100) | 1.4048 | 0.236 |
| Polytechnic | 105(57.4) | 78(42.6) | 183(100) | df=1 | |
| Total | 185(54.4) | 155(45.6) | 340(100) | | |

*=Significant.

4. Discussion

This study assessed the socio demographic characteristics, sexual behaviour, contraceptive knowledge and use among female undergraduates in two tertiary institutions in Imo state, South East, Nigeria. The study found that majority of participants were predominantly youths, Christians and singles as reported in other studies conducted in the South Eastern part of Nigeria. [23,24] There was generally a high awareness of contraceptives observed in our study, this finding was comparable to figures reported in other studies which ranges from 87.5% to 100%. [2,8,9,17] Despite this high awareness, the depth of knowledge about contraceptives varied among the participants with 25% and 38% of the participants having a poor and fair knowledge about contraceptive methods respectively. This may be due to the fact that the

predominant sources of contraceptive information by the participants in this study was from informal sources such as friends and relatives and not from health workers who are likely to be knowledgeable about issues of contraception.

The contraceptive method the participants in this study were mostly aware of was the male condom and not the oral pills as would have been expected in a study comprising of only female participants. This awareness of the male condom may be associated with the multiplicity of adverts and media campaigns that have been associated with the male condom over the years. Obviously, this awareness has not translated into an equivalent level of use as there still remains a gap between sexual activity and use as shown in this study where only about half of the participants use contraception. A study by Hogue et al reported that there was no significant association between awareness and contraceptive use [15].

Almost three-quarters of the participants reported having ever had sexual intercourse and 72.5% of them were currently sexually active. This finding was comparable to that reported in a study from Tanzania and some studies in the North Central region of Nigeria [2,8,25] while it was higher than what was observed in other studies in South-West, South-East, South-South, and North-West regions of Nigeria, Botswana and Democratic republic of Congo. [5,9,14,15,18,20,21,23] This high sexual activity noticed among the students studied may be due to the location of the institutions close to an urban town precisely the state capital which has a relatively high cost of living. Also peer group pressure, mass media, availability of internet services, and financial reasons might play an important role. It is worthy of note that a study in the Niger Delta region of the country reported rates as high as 85.3% [19].

Studies by Abiodun et al [8] and Somba et al [2] also reported that friends and relatives were the main source of contraceptive information unlike a study by Hogue et al [15] which reported that the school health centre was the main source of contraceptive information. In contrast to these institutional based studies, a community based study by Oyedokun et al [22] reported that the hospital/clinic was the main source of contraceptive information. Despite the relative low use of contraceptives in a study of female participants, the male condoms remain the most used when compared to the oral pill as seen in other studies. [2,3,15,16,19,24] This may be associated with the high awareness about condoms, ease of use, low cost, availability of the commodity, nil side effects and dual role of preventing pregnancy and transmission of sexually transmitted infections.

This study found that most of the participants sourced their contraceptives from the patent medicine stores and not the health centres and hospitals. This was similar to that reported by Ejembiet al where the patent medicine vendors was the main source of contraceptives for the participants. [14] Other studies reported pharmacy shops, clinics outside the university as where most respondents sourced their contraceptives. [15,17] This may further highlight the continued existence of social and cultural factors still surrounding the use of contraceptives in our environment as the participants seem to prefer to access their contraceptives from private places where there is a limited chance of meeting familiar persons.

The contraceptive failure rate of 30% observed among the participants that use contraceptives was comparable to findings from the 2007 National HIV/AIDS and Reproductive Health Survey where the highest failure rate was 27%. [26] The failure rate reported in this study may be associated with the finding of a sizable proportion of the students having poor contraceptive knowledge and the contraceptive type commonly used by the participants.

In this study, the socio-demographic characteristics of the respondents such as age, tribe, religion and type of institution did not appear to have any significant effect on the contraceptive use among the students. This finding is not unusual as it is expected that the undergraduate environments irrespective of the type of institution are comparable in its physical, psychological and social interactions, relationships and risks. On the other hand, marital status and place of location of the secondary school attended had a significant effect on contraceptive

use. A study by Somba et al reported that marital status was significantly associated with contraceptive use [2].

It was observed that contraceptive use was higher amongst the single students and those that attended urban secondary schools. This could be explained by the fact that the unmarried students were more cautious of getting pregnant and as a result, they sought the use of contraceptives more than those that were married. In a study by Ejembiet al with predominantly unmarried participants, it was reported that protection from pregnancy was the dominant reason for using contraceptives. [14] Also the participants who attended urban secondary schools were more likely to have been exposed to sexual issues and behavioural practices prevalent in the urban areas.

5. Conclusion

This study has shown that there is a persistent gap among the female undergraduates between their high sexual activity and the uptake/use of contraceptives despite high contraceptive awareness. The bridging of this gap especially among the undergraduates is critical in reducing unwanted pregnancies, unsafe abortions and sexually transmitted diseases. To bridge this gap, one of the strategies being proposed is the strengthening of the health care system for undergraduates by introducing compulsory family planning courses and services during the orientation programme of new undergraduates. This is expected to guarantee effective contact and communication with the undergraduates thus ensuring an increase in their level of contraceptive knowledge that may lead to behavioural modification with an associated increase in contraceptive use.

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Authors' Contributions

Authors DCB, UKA, ICA, and DKC designed the study, wrote the first draft, managed the literature review and data collection while DCB, MIA, CHN, ORU and NEU managed data analysis. All authors read, reviewed, and approved the final draft. No external funding was received for this research and the authors declare that there is no competing interest

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