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Contraceptive Use and Safe Sex Practices Among Sexually Active Female Undergraduate Students of Niger Delta University South South Nigeria

Maureen A. Okumoko[1]; Chinelo Vivian Okeke[2*]; Ihekerenma J. Binafeigha[1]; Obi B. Ikenna[2]; Efetoboere P. Ogigbah[1]; Gesitari B. Diriyai[1]; Daniel Aiwansoba[1]

[1]Niger Delta University Teaching Hospital, Okolobiri. Yenagoa Bayelsa state Nigeria.
[2]Imo State University Teaching Hospital Orlu Imo State Nigeria.

Corresponding Author: Chinelo Vivian Okeke[2*]

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Abstract:

- ***Background***

The reproductive health of adolescents and young adults, especially females, is essential to the wellbeing of a society. In Nigeria, studies have suggested an increase in sexual activity among adolescents and young adults of both sexes, and a progressive decrease in contraceptive use with its attendant negative effects.

This study therefore, assessed the knowledge and use of contraceptives and safe sex practices among female undergraduates of Niger Delta University, Wilberforce Island, Bayelsa State and also create awareness on the need for contraceptive use and safe sex practices among the said population especially among the inexperienced.

- ***Methods***

Using stratified sampling, data was collected from 252 participants, via self-administered questionnaires. A list of all departments in each faculty was made, simple random sampling/ balloting was used to select one department in each faculty, after which the number of classes in each department was listed out and a class was selected by simple random sampling/ balloting. Results were analyzed using SPSS version 25 software.

- ***Results***

Sixty seven percent of participants had good knowledge of the use of contraceptives and safe sex practices while 95% showed a positive attitude towards their use. It was also discovered that 62.7% of the participants were sexually active, out of which 85.4% of them use contraceptives while 60.74% practice safe sex.

On the factors associated with the use of contraceptives and safe sex practices, 30.38% showed no cultural or religious influence on their decision; 34.18% (54) were shown to never have financial constraints limiting their use of contraceptives.

- ***Conclusion***

This study showed a high level of knowledge of use of contraceptives and safe sex practices among the female undergraduates in Niger Delta University, with condoms being the most commonly known method. However, more reproductive health education and promotion is necessary in order to improve their sexual health thereby preventing attendant negative effects.

Keywords: *Contraceptives, Safe Sex, Undergraduates.*

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I. INTRODUCTION

➢ *Background*

Contraceptives are tools, medications, or techniques for averting pregnancy, either by preventing the male sperm from fertilization of the female egg or by preventing implantation of the fertilized egg. [1]

When compared to other forms of fertility control which depends on destruction of embroyo, Contraception stands as the morally most acceptable form of fertility control that possibly attracts less criticism.[2]

Contraceptive use has been recognised as a major tool for decreasing maternal deaths, which calls for application of strategies to improve the use of contraceptives.

Safe sex practice is sexual activity using procedures or contraceptive tools such as condoms, dental dams and gloves to decrease the risk of acquiring or transmitting sexually transmitted infections and unintended pregnancies.[3] The staggering rate of unwanted pregnancies, teenage pregnancies, and other health issues which arose from lack of contraceptives highlights an immediate need for reproductive health information especially as it relates to birth control measures (Demographic & Health Survey NPC 2014). It is important to remember that Nigeria has the most fertility/morbidity level in Africa.[4] Absence of adequate knowledge of contraceptive methods negatively influences the use of contraceptives and this has subsequently led to high rate of unsafe abortions, miscarriages, unwanted children, stillbirths and a decrease in employment prospect for women.[4,5,6] Other untoward effects such as maternal or infant mortality might also occur.

There are several methods of promoting and regulating contraception. This involves both Short-term methods e.g. condoms, pills and Long term methods e.g. implants and IUCDs- (Intrauterine Contraceptive Devices). [7]

Adolescents and young adults constitute a significant proportion of the world's population. Reproductive health problems among youths and adolescents in Africa have been the discussed widely. This is due to their often multiple, high level of premarital, short-term sexual relationships. They use condoms inconsistently or don t use at all, and are exposed to exploitation and sexual violence by older men. Adequate information on sexuality, teenage pregnancy, unsafe abortion, transmission of HIV/AIDS and other sexually transmitted diseases is lacking among the adolescents and young adults, absence of knowledge on these problems leave them deficient in the skills and will necessary to avoid risky behaviors and/or manage their attendant effect.

Data from previous works in Nigeria suggests rising sexual activity among non married adolescents especially of female sex. There is also growing decrease in age at commencement of sex and poor contraceptive use. The unfavourable health implications of risky sexual behaviors were more in girls than in boys; for example, Nigerian National Agency for Control of HIV/AIDS (NACA) reported a prevalence of 4.1% in people between 15 and 24 years, with adolescent girls three times more at risk than boys of the same age. In research works done globally among university students, some factors were identified as been responsible for the non-utilization of contraceptives. These include, but are not limited to, age, culture, lack of knowledge and awareness, religion, lack of partner support, lack of access to contraceptive services, sources of information, peer pressure, alcohol and substance abuse.[8]

Many developing countries, including Nigeria, have adopted contraceptive use as an important strategy to address public health, social and economic problems. Researchers have found that many women would want to prevent unwanted pregnancies, teenage pregnancies or sexually transmitted diseases and infections, but do not use any form of contraception because of the numerous problems they face. Lack of awareness and knowledge about contraceptive use is majorly associated with failure of their utilization.[9]

According to Nigeria Demographic and Health Survey 2018, knowledge of modern contraceptives is higher among sexually active unmarried women (98%) than currently married women (94%). The most common modern method used by sexually active unmarried women is condom (19%). 86.6% of undergraduates in tertiary institution in Nigeria are sexually active, prevalence of risky sexual behavior in college and university students in Nigeria is 63%. The most common high risk sexual behaviour among students was multiple sexual partners (1% 0f women and 13% of men reported to having two or more sexual partners in the past 12 month) and anal sex. There is an overall low modern contraceptive use prevalence of 12%. Prevalence of married women in Nigeria using any method of contraceptives is 17%, while 37% of sexually active unmarried women use a contraceptive method.(NDHS, 2018). Prevalence of contraceptive use among women in Bayelsa State is 2-7%.

This study therefore aims to assess the contraceptive use and safe sex practices of sexually active female undergraduate students of Niger Delta University thereby creating awareness on the need for contraceptive use and safe sex practices in the said population.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1854

II. METHODOLOGY

➢ *Study Area*

The study was carried out in Niger Delta University Wilberforce Island, Bayelsa State. It is a renowned educational institution located in the Niger Delta region of Nigeria (Bayelsa). It is a public university that offers a wide range of academic programs in various fields of study. The university serves as a setting for this research on contraceptive use and safe sex practices in sexually active female undergraduate students of Niger Delta University (NDU). NDU has about three main campuses: Main campus in Amassoma (Southern ijaw local government area), College of Health Sciences (CHS) in Amassoma, and the Law Faculty in Yenagoa. NDU has 13 faculties, with about 20,000 students and the ratio of female to male is 44:56. Inhabitants are mainly Izons, other major ethnic groups' resident in the area includes Igbos, Hausas, Yorubas, Urobos. It is a diverse university, attracting students from various socio-demographic backgrounds, students from different regions of Nigeria and beyond, representing different ethnicity, cultures, and languages. Students at NDU come from different economic backgrounds ranging from lower income to middle income families. The university has a health center on campus that offers a range of healthcare services to students. The health center is staffed with qualified medical professionals who are eligible to provide medical consultations, diagnose and treat minor illnesses and other preventive services. They also provide referrals to specialized hospitals if needed.

➢ *Study Design*

A descriptive cross-sectional design.

➢ *Study Period*

The study lasted for a period of 3 months from March to May 2024.

➢ *Study Population*

The population in this study consists of women in the reproductive age group (18-49) who are female students of NDU. These categories of women were selected because the study was centered around sexually active female undergraduate students, who were matured enough to share their knowledge and experiences on modern contraceptives.

➢ *Inclusion Criteria*

Sexually active female, undergraduates of reproductive age, able to provide legal consent and necessary information to address the research questions.

➢ *Exclusion Criteria*

This study excluded non-female students, non-undergraduates, non-NDU students, participants who were unable to provide informed consent such as participant under the legal age of consent or those with cognitive impairments.

➢ *Sample Size Determination*

Using the Cochrane formula,

$$n = \frac{z^2pq}{d^2}$$

Where p is prevalence from a previous study, using contraceptive prevalence of 25.4% among female undergraduates in Nigeria. A study done by Abiodun & Balogun in 2009 on Sexual activity and Contraceptive use among young female students of tertiary educational institutions in Ilorin, Nigeria.

q is 1-p

n is sample size

z is standard normal deviation corresponding to level of significance at 95% confidence level = 1.96

d is level of precision set at 5%

$$n = \frac{1.96^2 \times 0.25 \times 0.75}{0.05^2}$$

= 289

For sample population < 10,000

$n_f = n/(1+n/N)$

Where N is sample population = About 8800 female students in NDU

= 280

Using the approved non response rate in this institution which is 10%

n_f = 280 + 10% = 308

➢ *Sampling Technique*

All female students of NDU were eligible for this study. Stratified random sampling was used in order to have an unbiased representative sample of the university. The female undergraduates were first stratified according to faculties to ensure coverage of every part of the university, and to achieve generalization of the results to the entire university. A list of all departments in each faculty was made, simple random sampling/ balloting was used to select just one department in each faculty, after which the number of classes in each department was listed out and a class was selected by simple random sampling/ balloting. Having a total number of 13 classes in different departments and faculties of NDU

Since the sample size is 308, it was divided by the number of classes (13) which means about 24 questionnaires was shared in each class. A simple random sampling/ balloting was done to select the participants in the class by

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1854

folding papers of yes/no, the individuals that picked yes was allowed to participate in this study to avoid selection bias.

➢ *Data Collection*

The tool used for the study was a self-administered Google form questionnaire. Questions were developed based on the objectives and the questionnaire was divided into seven sections as shown below:

- Section 1: Demographic Information.
- Section 2: To assess the knowledge of contraception and safe sex practices of sexually active female undergraduate students of Niger Delta University.
- Section 3: To assess the attitude of the sexually active female undergraduate students towards contraceptive use and safe sex practices.
- Section 4: To assess the contraceptive use of sexually active female undergraduate students of Niger Delta University.
- Section 5: To assess the safe sex practices of sexually active female undergraduate students of Niger Delta University.
- Section 6: To determine the factors associated with contraceptive use and safe sex practices of sexually active female undergraduate students of Niger Delta University.
- Section 7: To determine the factors associated with the safe sex practices of sexually active female undergraduate students of Niger Delta University.

➢ *Incomplete Sample Size:*

The sample size was 308, but response rate was 252[81%], we were unable to complete our sample size due to non response from the participants.

➢ *Data Analysis*

Data was analyzed using descriptive analysis and inferential statistics (chi-square), using Statistical Package for Social Services (SPSS) version 25 software.

The knowledge of the respondents of contraception and safe sex was assessed with a set of ten questions. Respondents were rated to have good knowledge when they were able to correctly answer seven or more of the questions; they were considered to have average knowledge when they scored between 50% and 69%, and were considered to have poor knowledge, if they were able to answer correctly less than five questions.

The attitude of the respondents towards contraception and safe sex were assessed with a set of five questions, on a five-point likert scale. Respondents were scored +2 when they strongly agreed to a positive statement, scored +1, if they agreed, 0, if they were indifferent; scored -1, if they disagree; and -2, if they strongly disagree to the positive statement. The scoring was reversed for negative statement.

The respondents were subsequently rated to have positive attitude towards contraception and safe sex when they had a cumulative positive score; they were considered to be indifferent to contraception and safe sex when they had a cumulative score of zero; and were considered to have poor attitude, if they had a negative cumulative score.

The contraceptive practices of the respondents were assessed with a set of five questions. Respondents were rated to have good contraceptive practice if they engaged in at least four of the five contraceptive practices; their contraceptive practice was rated to be average, when they practiced three of the five contraceptive practices, and was considered to be poor, if they engaged in two or less of the contraceptive practices.

The safe sex practices of the respondents was assessed with a set of five questions. Respondents were rated to have good safe sex practice when they engaged in at least four of the five safe sex practices; their safe sex practice was rated as average, when they practiced three of the five safe sex practices, and was considered to be poor, if they engaged in two or less of the safe sex practices.

➢ *Ethical Considerations*

Ethical approval with number NDUTH/REC/0001/2024 was obtained from the Research and Ethics Committee, Niger Delta University Teaching Hospital, Okolobiri, and informed consent was obtained from participants before the interview was administered.

➢ *Study Limitation*

- Incomplete Sample Size: The sample size was 308, but response rate was 252[81%], we were unable to complete our sample size due to non response from participants.
- Limited Scope: The study focused solely on female students, and might have overlooked the role of male students in contraceptive practices and safe sex, limiting the comprehensiveness of our findings.
- Access to Participants: There was difficulty in accessing certain groups of students, such as those living off-campus and those in specific faculties.
- Time Constraints: There was limited time for data collection which restricted the depth of the study that led to rush and incomplete responses from our participants.
- Ethical Considerations: Sensitivity around the topic on contraceptive use led some participants to provide socially acceptable answers rather than truthful ones, and it might be because the study was done in a culturally conservative environment.
- Data Collection Method: For the study, questionnaires were administered, the design and wording of questions might have influenced responses.
- Generalizability: The study might not be applicable to other universities or regions, as the study is specific to Niger Delta University.
- Cultural, social, and economic factors unique to the area could influence the results.
- Cross sectional nature of the study does not allow for casual inference

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➢ *Pretest*

10% of the sample size was used as a pretest. 31 questionnaires on contraceptive use and safe sex practices of sexually active female undergraduate students were administered as pretest in Bayelsa Medical University (BMU), Bayelsa state.

III. RESULTS AND ANALYSIS

The total number of questionnaires administered was 308. 252 questionnaires were retrieved, entered and analyzed due to non response from study participants. The response rate was 81%. Tables, texts and figures were used to represent the results from data collection as follows:

Table 1 Socio-Demographic Characteristics of Respondents

Faculty	**Frequency N = 252**	**Percent %**
Agricultural Sciences	15	6.0
Arts	15	6.0
Basic Clinical Sciences	9	3.6
Basic Medical Sciences	52	20.6
Clinical Sciences	17	6.7
Education	15	6.0
Engineering	7	2.8
Law	16	6.3
Management Sciences	12	4.8
Nursing	16	6.3
Pharmacy	25	9.9
Sciences	25	9.9
Social Science	25	9.9
Total	**252**	**100.0**

Table 1 shows that the faculty of Basic Medical Sciences had the highest respondent rate of 20.6% (52), followed by the faculties of Pharmacy, Sciences and Social sciences which had a respondent rate of 9.9% (25) each. While faculties of Basic clinical sciences and Engineering had the lowest respondent rate of 3.6% (9) and 2.8% (7) respectively.

Table 2 Socio-Demographic Characteristics of Respondents

Age in years	0 – 18	18-20	21-23	24-26	>26	
Frequency (percent %)	18 (7.1)	68 (27.0)	107 (42.5)	46 (18.3)	13 (5.2)	
Academic year	100L	200L	300L	400L	500L	600L
Frequency (percent %)	63 (25.0)	30 (11.9)	50 (19.8)	51 (20.2)	49 (19.4)	9 (3.5)
Religion	Christian	Islam	Atheist			
Frequency (percent %)	245 (97.2)	6 (2.4)	1 (0.4)			
Marital status	Single	In a relationship	Married			
Frequency (percent %)	245 (97.2)	5 (2.0)	2 (0.8)			

Table 2 showed the socio-demographic profile of the respondents. Majority of the respondents were aged between 21 to 23 years of age with a respondent rate of 42.5%(107), followed by those aged 18-20 (27%) and then 24-26years (18.3%). The table also revealed that majority of the respondents are in the first academic year (100L), 25%(63). From the table, 245(97.2%) were Christians, followed by those who practice Islamic religion 6(2.4%) and a vast majority, 245(97.2%) are single.

Table 3 Knowledge of Contraception and Safe Sex Practices of Female Undergraduate Students of Niger Delta University

	Frequency N =232 (percent %)		
	NO	YES	MISSING
Q1	171 (67.9)	79 (31.3)	2 (0.8)
Q2	174 (69.0)	74 8(29.4)	4 (1.6)
Q3	210 (83.3)	39 (15.5)	3 (1.2)
Q4	125(49.6)	123 (48.8)	4 (.6)
Q5	29 (11.5)	218 (86.5)	5 (2.0)
Q6	73 (29.0)	169 (67.1)	10 (4.0)
Q7	175 (69.4)	56 (22.2)	21 (8.3)

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1854

Q8	33 (13.1)	209 (82.9)	10 (4.0)
Q9	184(73.0)	57 (33.6)	11 (4.4)
Q10	34 (13.5)	212 (84.1)	6 (2.4)

- Key: Q1 = Contraceptives is for the females only, Q2 = Contraceptives are drugs and injections only, Q3 = Contraceptives is used to prevent STDs only.

Q4 = Contraceptives can cause diseases and illnesses , Q5 = Contraceptives includes female condoms, Q6 = Contraceptives includes spermicides, Q7 = Intrauterine Devices are not contraceptives, Q8 = Implants can also serve as contraceptives , Q9 = Safe Sex doesn't involve the use of contraceptives, Q10 = Safe sex involves regular testing for STIs and being faithful to one sexual partner.

Table 4 Knowledge of Contraception and Safe Sex Practices of Female Undergraduate Students of Niger Delta University

Knowledge level	Frequency N = 232	Percent %
Poor	41	17
Average	33	14.2
Good	158	68.1

Table 4 Respondents were asked a set of questions to assess their knowledge of safe sex practices and contraceptives. The set of ten questions were centered on assessing the knowledge base of respondents including questions on which contraceptives options they were aware of. The results showed that 68.1% showed good knowledge of contraceptives and safe sex practices, 17% of respondents showed a poor knowledge and 14.2% showed average knowledge.

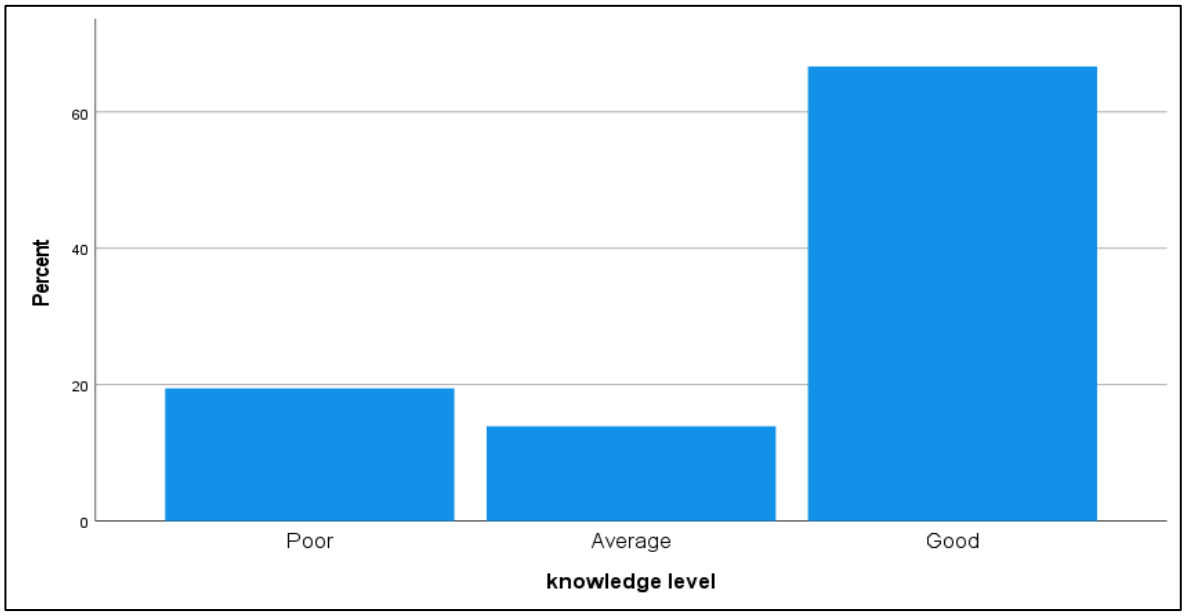

Fig 1 Knowledge of Contraception and Safe Sex Practices of Female Undergraduate Students of Niger Delta University

Table 5 Attitude of Female Undergraduate Students Towards Contraceptive Use and Safe Sex Practices

Attitude	Frequency N = 252	Percent %
Negative	8	3.2
Neutral	4	1.6
Positive	240	95.2

Table 5 shows Students were asked questions as relating to the use of contraceptives; if contraceptives affected sexual behavior and the perception on safe sex practices. Students had the option of replying strongly agree, agree, neutral, disagree or strongly disagree. Results showed that 95.2%(240) of respondents showed a positive attitude towards the use of contraceptives and the importance of safe sex practices, 1.6%(4) were neutral and 3.2%(8) showed negative attitude towards the use of contraceptives and safe sex practices.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1854

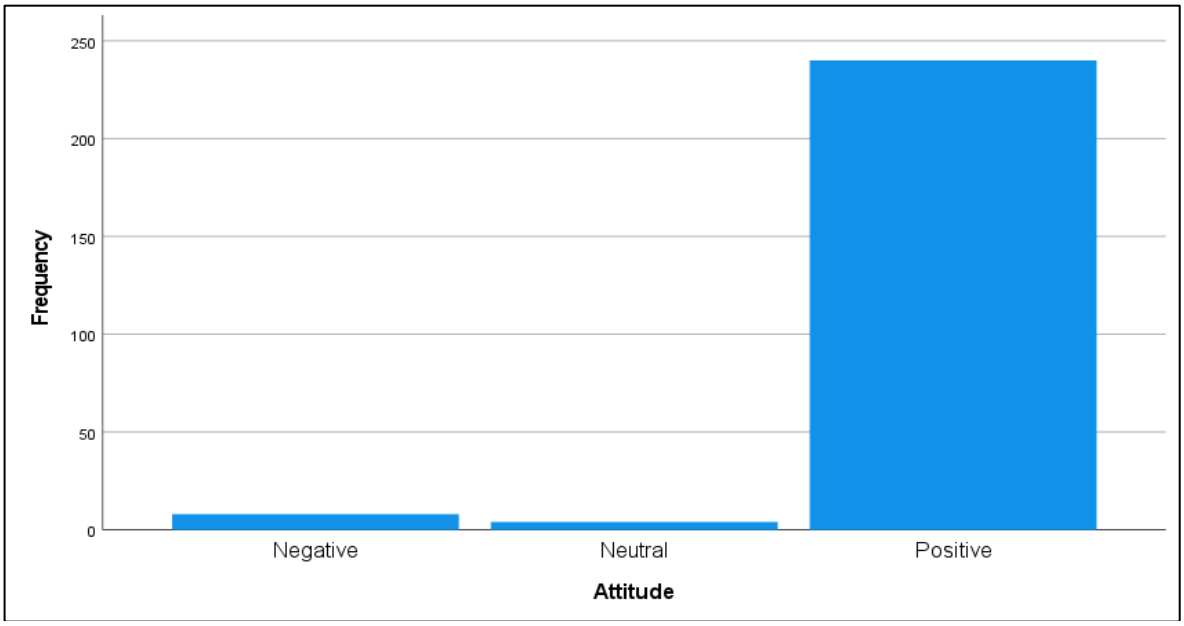

Fig 2 Attitude of Female Undergraduate Students Towards Contraceptive Use and Safe Sex Practices

FIGURE 2 shows a bar chart representing the attitude of female undergraduate students towards contraceptive use and safe sex practices.

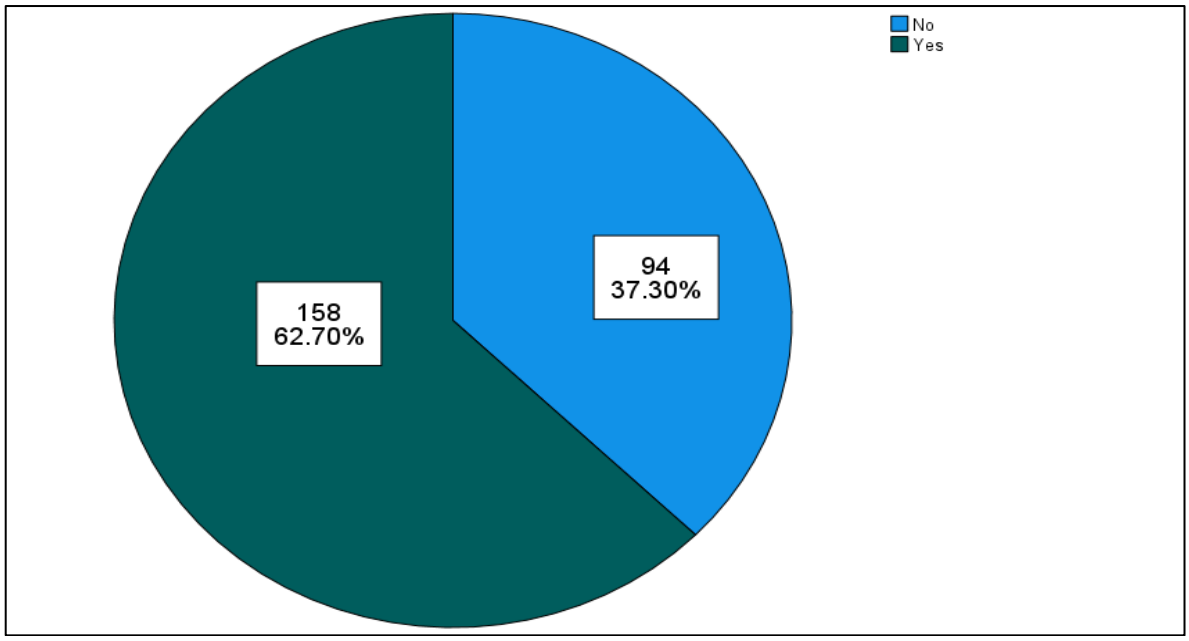

Fig 3 Frequency and Percentage of Sexually Active Respondents vs Non Sexually Active Respondents

FIGURE 3 is a pie-chart showing that 62.70%(158) of the respondents are sexually active while 37.30%(94) are not sexually active.

Table 6 Frequency and Percentage of Contraceptive Use of Sexually Active Female Undergraduate Students of Niger Delta University.

Responses	Yes	No	Total
Sexually active	158 (62.79%)	94 (37.30%)	252
Sexually active And use contraceptives	135 (85.44%)	23 (14.56%)	158

Table 6 shows 135 (85.44%) out of the 158 sexually active students use contraceptives, while 23 (14.56%) do not use any form of contracepives

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1854

Table 7 Safe Sex Practices of Sexually Active Female Undergraduate Students of Niger Delta University.

How often do you practice safe sex	Always	Often	Sometimes	Rarely
Frequency N = 135	47	35	39	14
Percent %	34.81	25.93	28.89	10.37
Score	**Good = 60.74%**		**Poor = 39.26%**	

Table 7 shows that out of 135 respondents, 34.81% always practice safe sex; 25.93% often practicing safe sex; 28.89% sometimes practice safe sex, while 10.37% rarely practice safe sex. This shows 60.74% with good safe sex practices, while 39.26% with poor safe sex practices.

Table 8 Factors Associated with Contraceptive Use and Safe Sex Practices of Sexually Active Females in Niger Delta University

Level of influence of cultural or religious beliefs on decision to use contraceptives					
	Major Influence	**Moderate Influence**	**Minor Influence**	**Neutral**	**No influence**
Frequency N = 158	25	17	28	40	48
Percent %	15.82	10.76	17.72	25.32	30.38
How often does financial considerations hinder ability to use contraceptives					
	Always	Often	Sometimes	Rarely	Never
Frequency N = 158	12	13	49	30	54
Percent %	7.59	8.23	31.01	18.99	34.18
How do media portrayals of safe sex practices impact your perceptions					
	Strongly Positive	Positive	Neutral	Negative	Strongly Negative
Frequency N = 158	20	69	56	12	1
Percent %	12.66	43.67	35.44	7.59	0.63
How do you perceive the level of awareness about contraceptives among your peers					
Frequency N = 158	Very High	High	Moderate	Low	Very Low
Percent %	31	36	69	17	5

Table 8 shows a majority of respondents (30.38) perceived no cultural or religious influence on the decision of the use contraceptives, while the smallest percentage (10.76) showed moderate cultural or religious influence on the decision of the use of contraceptives.

34.18% were shown to not have financial considerations hinder their ability to use contraceptives, while 7.59% had financial considerations hinder their ability to use contraceptives.

43.67% showed that media portrayals of safe sex practices had a positive impact on their perception of safe sex practices, while 0.63% showed that media portrayals of safe sex practices had a strongly negative impact on their perception of safe sex practices.

69% were shown to perceive a moderate level of awareness of contraceptives among their peers; 36% were shown to perceive a high level of awareness of contraceptives among their peers, 31% were shown to perceive a very high level of awareness of contraceptives among their peers; 17% were shown to perceive a low level of awareness of contraceptives among their peers, while 5% perceived a very low level of awareness of contraceptives among their peers.

There is no significant difference in the level of influence of cultural or religious beliefs on decision to the contraceptive safe sex practices. No significant difference in the level of influence of finance on contraceptive use and safe sex practices. There is significant difference in how the media portrayal of safe sex practices impact their perception on contraceptive use and safe sex practices

Table 9 Association Between Knowledge of Contraceptive Use, Safe Sex Practices and Attitude of Respondents Towards Contraceptive Use and Safe Sex Practices

	Attitude towards contraceptive use and safe sex practices			
Knowledge of contraceptives and safe sex practices	Negative	Neutral	Positive	Total
Poor	6 (75%)	3 (75%)	40 (16.7%)	49
Average	0	1 (25%)	34 (14.2 %)	35
Good	2 (25%)	0	166 (69.1%)	168
Total	**8**	**4**	**240**	**252**
Test	**Value**	**Df**	**P-value**	
Chi square	30.358	3	<0.001	

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/26jun1854

- *Interpretation:*

There is significant association between the knowledge of contraceptive use, safe sex practices and attitude towards contraceptive use and safe sex practices.

IV. DISCUSSION

From this study, 66.7% of female University undergraduates in Niger Delta University have good knowledge of contraceptives, 13.9% have an average knowledge while 19.4% have poor knowledge of contraceptives. This shows that the knowledge of contraceptives among female students of Niger Delta University is high. This finding is similar to previous studies done in NDU College of Health Sciences[10], where 79% had good knowledge and 21% had poor knowledge, there was a higher contraceptive knowledge from this report because the sample population was medical students who are generally expected to have a higher knowledge of contraceptives, having been exposed to in-depth knowledge compared to the other undergraduate students in NDU. From the study, a majority of the female undergraduate students had knowledge about contraceptive methods and many were found to have been able to explain what contraceptives are meant for, and had cited contraceptives as barrier methods which are used to prevent not only pregnancies but also sexually transmitted diseases; some had also cited that contraceptives are for both males and females and that safe sex involves the use of contraceptives, and regular testing for STIs. Critical in promoting reproductive health of adolescents is a planned process of sex education that will foster acquisition of factual information, formation of positive attitude, beliefs and values as well as the development of skills to cope with sexual pressure. The increase in contraceptives knowledge was equally found to be high as was reported in Kenya.[11] Similar findings were reported in Gbagbo[12] research in Ghana.

The knowledge of contraceptive methods is the first step toward accepting a method to be used. Subsequently, knowledge is an important prerequisite in gaining access to contraceptives, it implies that improving the level of knowledge of contraceptives could in turn increase the use of contraceptives.

From this study, it was found that 62.7% of female University undergraduates in Niger Delta University were currently sexually actively. Amongst this number 82.4% use contraceptives and this was majorly male condoms and oral pills. The observed percentage is similar to the findings by Akintayo and Akin-Akintayo which showed that out of 60.8% of female undergraduates who were sexually active, the major contraceptive used was male condoms and oral pills. Among the respondents using contraceptives, the commonest method was male condom. This is similar to some previous studies done by Akintayo et al.[13], Orji et al.[14] but varied with the findings among Southeastern Nigerian female undergraduates who practiced natural methods such as rhythm and calendar methods more.[15] It also differs from the practice among tertiary students in the United States where the use of oral contraceptive pills dominates.[16] The high prevalence of male condom in our environment is probably due to ease of over-the counter purchase and its cheap prices. More so, paucity of adolescent-friendly centers coupled with judgmental attitude of health workers may preclude the students from accessing health clinics for other contraceptive methods. Though the use of the male condom was popular, its consistent and proper use is important to achieve effective protection against sexually transmitted infections including HIV/AIDS and unwanted pregnancy.

Contraceptive knowledge was high, but was not matched with consistent use. Approximately 35% always use contraceptive method during intercourse, 14.56% do not use contraceptives. This non-use of contraception has earlier been noted and attributed to ignorance, fear of side effects, poor access to contraception and spontaneity of adolescent sexual activities. In order to maintain and sustain healthy sexuality, attitudinal change in this area is inevitable.

Respondents were asked how often they practiced safe sex, some cited the use of barrier method of contraceptives (use of condoms), some made mention of abstinence while some said being faithful to a faithful partner. This study shows that 60.74% practice and understand safe sex while 39.26% do not practice safe sex; a reason for this might be due to lack of knowledge and access to contraceptives and safe sex practices.

V. CONCLUSION

The level of knowledge of contraceptive methods and safe sex practices among female undergraduate students in Niger Delta University was considerably high in this study. However, there still exists significant gaps in the understanding of other specific contraceptive methods (excluding condom) and their effectiveness.

Additionally, this study found that despite having good knowledge, many female undergraduate students in Niger Delta University do not practice safe sex.

The findings highlight the need for comprehensive sex education programs and campaigns that would target adolescents and youths, including undergraduate students, especially females; addressing not only knowledge, but also attitude towards contraceptives and safe sex practices.

Furthermore, improving access to contraceptive resources would help these students in making informed decisions about their reproductive health.

By addressing these gaps, it would greatly improve the sexual health of the female undergraduate students.

RECOMMENDATIONS

- Public enlightenment on contraception needs to start from antenatal and gynaecological clinics. This can be extended to other outpatient clinics which men are part of, so that the information on contraception will spread to as many people as possible. This will reduce the

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magnitude of misconception/misinformation on contraception to a minimum level and increase contraceptive use.

- Incorporation of post-abortion contraceptive counseling as part of comprehensive abortion care. This can be done by training health care providers in abortion care.
- Improvement of contraceptive use among youths can be done by providing adolescent-friendly sexual education as well as reproductive and contraceptive services by the university and the hospital
- Government needs to provide more Family Planning clinics to make access to health facilities easier specifically in the rural areas.
- Men can be encouraged to follow their wives to Family Planning clinic for ease of contraceptive method selection and change of attitude towards contraception. The improvement and consistent use of contraceptives was also recommended by another study.[39]

➢ *Authors Contribution*

- MAO: Writing of manuscript, data collection, review,
- CVO: writing of manuscript, data collection, review
- EAA: Writing of manuscript, data collection
- DOA: Writing of manuscript, data collection
- BEA: Writing of manuscript, data collection
- DDA: Writing of manuscript, data collection
- BO: Writing of manuscript, data collection, supervision

All authors reviewed the manuscript

➢ *Conflict of Interest*

Authors declare no conflict of interest

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➢ *Availability of Data and Materials*

All data generated or analyzed during this study are included in this published article.

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➢ *Declarations*

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- Consent to participate: verbal and written consent was gotten from all participants.
- Consent to publish: was gotten from the participants and Niger Delta University Teaching Hospital, Okolobiri.

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