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Sexual Behaviours and Unintended Pregnancy Among the Female Undergraduates of Niger Delta University: Prevalence and Associated Factors

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Abstract

High levels of sexual activity among young adults, coupled with inconsistent contraceptive use, increase the risk of unintended pregnancy and adverse reproductive outcomes. This study examined sexual behaviour, unintended pregnancy prevalence, and associated factors among university students. A cross-sectional study was conducted among undergraduate students of Niger Delta University. Data were collected via structured questionnaires. Descriptive statistics estimated the prevalence of sexual activity and unintended pregnancy, while logistic regression identified predictors of pregnancy intentionality. A high proportion of students (85.2%) reported being sexually active. Among those with pregnancy experience, 46.8% reported a pregnancy, and 60.6% of these pregnancies were unintended. The major reasons for unintended pregnancy included desire to continue education, unmarried status, and economic constraints. Age, marital status, and residence were significant predictors of unintended pregnancy ($p < 0.05$). Contraceptive non-use or inconsistent use was commonly reported before pregnancy. High sexual activity combined with suboptimal contraceptive uptake contributes to increased unintended pregnancy among university students. Strengthened youth-friendly reproductive health services and targeted pregnancy-prevention strategies are urgently needed to mitigate academic and socioeconomic consequences.

Keywords: sexual behaviour; unintended pregnancy; reproductive outcomes; young adults; university students

Introduction

Adolescents and young adults (youths) constitute the majority of the global population, with youths making up one quarter of the world's population [1]. Globally, this group of individuals are usually faced with several reproductive health challenges due to their high sexuality, early sexual debut, sexual assault, contraceptive failure, inadequate sex education, being single, poor or non-use of contraception, long periods of education, health issues, poverty, dysfunctional families, with resultant unintended pregnancies and unsafe abortions [1-9].

Amongst female undergraduates of tertiary institutions in Nigeria, unintended sexual intercourse is said to be the major cause of unintended pregnancy, many of which end up in abortions, and because abortion is still illegal except in terms of saving a woman's life it is carried out by unskilled personnel in unhygienic environment and also by unscientific methods thus resulting in severe consequences such as sepsis, haemorrhage, pelvic inflammatory disease, uterine perforation, etc. thereby increasing the maternal morbidity and mortality indices of the nation as well as other adverse effects on the

educational, sexual and reproductive health of these youths [10].

Materials and Methods

Study Area

This study was carried out amongst the female undergraduates of Niger Delta University, Wilberforce Island, located in Bayelsa State.^{11,12} The institution has two campuses, the Yenagoa campus, which contains the Law Faculty, and the main campus in Amassoma (Wilberforce Island). The institution has nine faculties and forty-three departments. The faculties are: Faculty of Science, Faculty of Arts, Faculty of Social Sciences, Faculty of Agricultural Technology, Faculty of Engineering, Faculty of Medicine, Faculty of Pharmacy, Faculty of Nursing, and Faculty of Law.

Study Population

The study population consisted of female undergraduates of the institution, both married and unmarried. This consisted of sexually active females between the ages of 15 and 35 years.

Study Design

A descriptive cross-sectional study design was used.

Sample Size Determination

The sample size was determined using the Fisher formula¹³ with a contraceptive prevalence of 30% 5,16,26 among female undergraduates. Accordingly, the calculated sample size was 323. Adjusting for 10% attrition (for non-response and missing data): $N = 323 + 48 = 371$ participants. However, a total of 500 respondents were enrolled in the study.

Sampling Technique

A multi-stage, sampling method was used in enrolling participants for the study.

Step 1: The students were first grouped according to their faculties to ensure adequate coverage and generalizability of the results to the entire University.

Step 2: Informed consent was then obtained from the participants, and a systematic random sampling technique was used to choose the number of participants from each of the faculties to participate in the study.

Step 3: From the sampling frame, every fourth person starting from the beginning was chosen to participate in the study, and the self-administered questionnaire was distributed to them.

Study Instrument

The study utilized a structured, self-administered questionnaire adapted from validated reproductive

health survey instruments (NDHS 2013 and NARHS 2012). The tool was pretested among twenty female students of Bayelsa State College of Health Technology to ensure appropriateness and reliability. The questionnaire included: Sexual history (including age at sexual debut), History of pregnancy, Reasons for unintended pregnancy, Contraceptive use prior to pregnancy, Outcome of last pregnancy

Data Analysis

Data were analyzed using IBM SPSS Version 21.0 (SPSS Inc., Chicago, IL, USA). Frequencies and percentages were used to describe sexual behaviour patterns, pregnancy experience and reproductive outcomes. Associations between socio-demographic variables and unintended pregnancy (including pregnancy readiness) were assessed using the Chi-square test. Variables demonstrating statistical significance were entered into a multivariable logistic regression model to determine independent predictors of unintended pregnancy and pregnancy readiness. Adjusted odds ratios with 95% confidence intervals were calculated, and statistical significance was defined as $p < 0.05$.

Results

Section A: Socio-Demographic Characteristics

Table 1: Demographic profile of the respondents.

Variable	Frequency (n = 494)	Percent
Age Group (years)		
15 - 19	137	27.7
20 - 24	149	30.2
≥ 25	208	42.1
Marital Status		
Single	327	66.2
Married	135	27.3
Divorced/separated	18	3.6
Widowed	14	2.8
Place of Residence		
Urban area	243	49.2
Semi urban	140	28.3
Rural area	111	22.5
Religion		
Christian	415	84.0
Islam	57	11.5
None	22	4.5
Ethnic Group		
Ijaw	165	33.4
Igbo	88	17.8
Yoruba	59	11.9

Urhobo	37	7.5
Isoko	33	6.7
Hausa	28	5.7
Itsekiri	25	5.1
Others*	59	11.9

Mean age = 24.1 ± 9.1 years, Others include Benin, Kalabari, Ikwere, Ogoni, Anioma, Igalla, Efik, and Adoni.

A total of 494 respondents participated in the study with a response rate of 98.8%. The mean age of the respondents was 24.1 ± 9.1 years. Two hundred and eight (42.1%) of the respondents were aged 25 years and above while 137 (27.7%) were aged 15- 19 years. Two thirds 327 (66.2%) were single while 135

(27.3%) were married. Almost half, 243 (49.2%) of the respondents resided in urban areas while 111 (22.5%) resided in rural areas. More than three-quarters 415 (84.0%) of the respondents were Christians and one-third 165 (33.4%) of them were Ijaw while 88 (17.8%) were Igbo.

Table 2: Respondents' age at coitarche and use of contraception.

Variable	Frequency (n = 494)	Percent
Ever had sexual intercourse		
Yes	421	85.2
No	73	14.8
Age at first sexual intercourse (n = 421)		
10 - 15years	139	33.0
16 - 20years	198	47.0
21 - 25years	84	20.0
Use of contraception at first sexual intercourse (n = 421)		
Yes	139	33.0
No	281	67.0
Type of contraception used at first sexual intercourse (n = 139)		
Condom	90	64.7
Pill	23	16.5
Diaphragm	10	7.2
Natural	12	8.6
Tubal ligation	4	2.9
Duration since last sexual intercourse (n = 421)		
One week	170	40.4
Two weeks	112	26.6
1 month	85	20.2
6 months	12	2.9
Can't remember	42	9.9
Use of contraception at last sexual intercourse		
Yes	317	75.3
No	104	24.7

Most, 421 (85.2%) of the respondents were sexually active. Of this proportion, 139 (33.0%) had their first sexual intercourse at 10-15 years and 198 (47.0%) had it at 16-20 years. One hundred and thirty-nine (33.0%) used contraception and of this proportion, 90 (64.7%) reported condom as the type of

contraception used. One hundred and seventy (40.4%) reported having sex a week prior to the survey while 112 (26.6%) reported having sex two weeks prior. Three hundred and seventeen (75.3%) respondents used contraception at their last sexual intercourse.

Table 3: Respondents' unintended pregnancy prevalence and reasons for it.

Variable	Frequency (n = 494)	Percent
Ever been pregnant		
Yes	231	46.8
No	263	53.2

Duration since last pregnancy (n = 231)		
≤ 1 year	20	8.7
> 1 – 2 years	95	41.1
> 2 – 3 years	71	30.7
> 3 years	45	19.5
Readiness for the last pregnancy (n = 231)		
Yes	91	39.4
No	140	60.6
Reasons for lack of readiness at last pregnancy* (n = 140)		
Desire to continue education	84	60.0
Not married	64	45.7
Economic reasons	45	32.1
Too young	38	27.1
Wanted to wait little longer	32	22.9
Problems with partner	30	21.4
Health reasons	6	4.3

*Multiple responses

About half of the respondents 231 (46.8%) had been pregnant before. Of this proportion, 20 (8.7%) were pregnant in the last one year prior to the survey and 95 (41.1%) were pregnant two years ago. Ninety-one (39.4%) were ready for their last pregnancy while 140

(60.6%) were not. Eighty-four (60.0%) of the respondents reported that their desire to continue their education was their reason for not being ready for their last pregnancy while 64 (45.7%) stated that they're not being married was the reason.

Table 4: Respondents' contraceptive use at last pregnancy and reasons for failure.

Variable	Frequency (n = 231)	Percent
Use of contraceptive before last pregnancy		
Yes	97	42.0
No	134	58.0
Respondents' alleged reason for failure of contraception at last pregnancy (n = 97)		
Poor method	70	72.2
Inconsistency due to lack of motivation	15	15.5
Discontinuation of use	12	12.3
Respondents' reasons for not using contraception (n = 134)		
Not caring whether pregnancy occurs	55	41.0
Partner's disapproval	39	29.1
side effects	36	26.9
Financial burden	4	3.0

About half of the respondents with a pregnancy experience, 97 (42.0%) stated that they had used contraception before their last pregnancy. Of this proportion, 70 (72.2%) stated poor method as the reason for failure of the contraception.

However, 55 (41.0%) of the respondents stated that not having thought of the possibility of pregnancy was the reason for not using contraception before last pregnancy while 39 (29.1%) stated that their partner disapproved of it.

Table 5: Socio-demographic characteristics of the respondents and their readiness for their last pregnancy (n = 231).

Variable	Readiness for last pregnancy		Chi square	p value
	Yes n (%)	No n (%)		
Age (years)				
15 – 19	25 (30.5)	57 (69.5)	7.037	0.030*
20 – 24	30 (38.0)	49 (62.0)		
≥ 25	36 (51.4)	34 (48.6)		
Religion				
Christianity	76 (39.8)	115 (60.2)	0.509	0.775

Islam	10 (41.7)	14 (58.3)		
None	5 (31.3)	11 (68.8)		
Marital status				
Single	0 (0.0)	83 (100.0)	96.937	< 0.001*
Married	78 (65.0)	42 (35.0)		
Divorced/separated	3 (20.0)	12 (80.0)		
Widowed	10 (76.9)	3 (23.1)		
Place of residence				
Urban area	38 (52.8)	34 (47.2)	9.131	0.010*
Semi urban	31 (30.1)	72 (69.9)		
Rural area	22 (39.3)	34 (60.7)		
Faculty				
Science	18 (51.4)	17 (48.6)	5.864	0.439
Arts	21 (41.2)	30 (58.8)		
Pharmaceutical sciences	9 (28.1)	23 (71.9)		
Medical College	14 (40.0)	21 (60.0)		
Social Science	11 (35.5)	20 (64.5)		
Law	3 (23.1)	10 (76.9)		
Engineering	15 (44.1)	19 (55.9)		
Level				
100	19 (47.5)	21 (52.5)	1.485	0.686
200	29 (36.3)	51 (63.8)		
300	22 (37.9)	36 (62.1)		
400	21 (39.6)	32 (60.4)		
Knowledge of contraception				
Poor	12 (38.7)	19 (61.3)	4.118	0.128
Fair	4 (19.0)	17 (81.0)		
Good	75 (41.9)	104 (58.1)		

*Significant

Thirty-six (51.4%) of the respondents aged 25 years and above were ready for their last pregnancy compared to 25 (30.5%) of those aged 15-19 years. There was an increased tendency to be ready for their last pregnancy among the older respondents. This association was statistically significant ($p = 0.030$). There was no statistically significant relationship between the respondents' religion and their readiness for their last pregnancy ($p = 0.775$). None of the single respondents were ready for their last pregnancy compared to 78 (65.0%) of their married

counterparts. This association was statistically significant ($p < 0.001$). Thirty-eight (52.8%) of the respondents residing in urban areas were ready for their last pregnancy compared to 22 (39.3%) of their rural counterparts. This association was also statistically significant ($p = 0.010$). There were no statistically significant relationships between the respondents' faculty, level, and knowledge of contraception with their readiness for their last pregnancy ($p = 0.439, 0.686, \text{ and } 0.128$, respectively).

Table 6: Logistic regression for predictors of respondents' pregnancy readiness.

Factors	B coefficient	p value	OR	95% confidence interval	
				Lower limit	Higher limit
Age (years)					
< 20*					
≥ 20	0.265	0.483	1.303	0.622	2.729
Marital status					
Single	-18.952	0.993	0.000	0.000	
Married	2.922	<0.001**	18.572	5.352	64.445
Residence					
Urban	0.329	0.397	1.389	0.649	2.973
Rural*					

Constant	-2.716	<0.001**	0.066		
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*Reference value, **Significant

Reference category, R2 (coefficient of determination) = 43.1% to 70.1%. Married respondents were 18.572 times more likely to be ready for their last pregnancy

compared to their unmarried counterparts. This was statistically significant ($p < 0.001$).

Table 7: Outcome of respondents' last pregnancy

Variable	Frequency (n = 231)	Percent
Outcome of last pregnancy		
currently pregnant	4	6.6
Live birth	93	29.1
Miscarriage	35	9.6
Abortion	99	54.7
Place where termination of pregnancy was done (n = 99)		
Patent medicine store/Pharmacy	26	26.3
Private clinic	22	22.2
Self-medication	20	20.2
Hospital	15	15.2
Traditional attendant	6	6.1
Complications at last termination of pregnancy (n = 99)		
Yes	12	12.1
No	87	87.9
Type of complication* (n = 12)		
Bleeding	12	100.0
High fever (sepsis)	10	83.3
Pain	9	75.0
Smelling discharge	4	33.3

*Multiple responses

Of the 99 that terminated their last pregnancy, 26 (26.3%) did it at patent medicine stores while 22 (22.2%) did it at private clinics. However, 12 (12.1%) had complications from the procedure of which all of them complained of bleeding, 10 (83.3%) complained of high fever, while 9 (75.0%) complained of pain.

Discussion

A high proportion of respondents (85.2%) reported being sexually active, similar to NARHS-PLUS-2012 (83%) and other Niger Delta studies.¹³ This rate exceeds findings from some Nigerian and international studies [1,3,17], likely reflecting regional sociocultural influences and early independence from parental supervision [18,19,13].

Three-quarters had sexual debut before age 20, with over a quarter before age 15, consistent with national and previous reports [1,3,13,17]. Early initiation underscores the need for reproductive health interventions beginning in primary and secondary schools, including parental involvement.

Despite high sexual activity, two-thirds did not use contraception at first intercourse, increasing risks of unintended pregnancy and STIs [1,18,13,17]. Even among users, reliance was mainly on condoms, pills, and natural methods, consistent with other studies [2,19,13,20-22]. These user-dependent methods have higher failure rates, highlighting the need to promote long-acting reversible and dual methods.

Nearly half (47%) had experienced pregnancy, with 60.6% unintended—comparable to reports from Nigeria and other regions [23,13,24,10,25]. Fear of side effects, partner disapproval, and low perceived pregnancy risk were common reasons for non-use among those with unintended pregnancies [26].

More than half (54.7%) of unintended pregnancies ended in induced abortion, and 63% were unsafe, similar to findings in Tanzania [17]. Unsafe abortion exposes youths to severe complications and long-term reproductive harm.

Conclusion

A high level of sexual activity (85.2%) was observed among students of Niger Delta University; however,

this did not correspond with optimal contraceptive uptake. The high pregnancy rate (46.8%) and substantial prevalence of unintended pregnancy (60.6%) among those with pregnancy experience reflect significant gaps in effective pregnancy prevention.

The primary reasons cited for unintended pregnancies included the desire to continue education, unmarried status, and economic constraints. Age, marital status, and residence were significant determinants of unintended pregnancy.

Recommendations

1. The university should implement targeted programs aimed at reducing unintended pregnancy through improved access to effective contraception and reproductive counseling services.
2. Policy interventions should prioritize students who are unmarried and economically vulnerable, given their increased risk of unintended pregnancy.
3. Comprehensive reproductive health strategies should integrate pregnancy prevention education with academic counseling services to support students who wish to continue their education.
4. Broader governmental reproductive health reforms should focus on preventing unintended pregnancies among adolescents and young adults through youth-centered and culturally sensitive approaches.

References

1. Akinsoji, A. A., Olufunmilola, A. O., Idowu, A. A., Pius, A. I. (2015). Sexual and Contraceptive Practices Among Female Undergraduates in A Nigerian Tertiary Institution. *Ethiop J Health Sci.* 25(3):209-216.
2. Donadiki, E. M., Jimenez-García, R., Velonakis, E. G., Hernandez-Barrera, V., Sourtzi, P. et al. (2013). Factors Related to Contraceptive Methods Among Female Higher Education Students in Greece. *J Pediatradolesc Gynecol.* 26:334-339.
3. Tsitsika A, Andrieu E, Deligeoroglou E, Tzavara C, Sakou I. et al. (2014). Experiencing Sexuality in Youth Living in Greece: Contraceptive Practices, Risk Taking, and Psychosocial Status. *J Pediatradolesc Gynecol.* 27:232-239.
4. Monjok E, Smesny A, Ekabua J. E., Essien E. J. (2010). Contraceptive Practices in Nigeria: Literature Review and Recommendations for

Future Policy Decisions. *Open Access Journal of Contraception*, 1:9-22.

5. Huang, Y., Merkatz, R., Zhu, H., Roberts, K., Sitruk-Ware, R. et al. (2014). The Free Perinatal/Postpartum Contraceptive Services Project for Migrant Women in Shanghai: Effects on The Incidence of Unintended Pregnancy. *Contraception*, 89:521-527.
6. Ikamari, L., Izugbara, C., Ochako, R. (2013). Prevalence and Determinants of Unintended Pregnancy Among Women in Nairobi, Kenya. *BMC Pregnancy and Childbirth*, 69(19):1-9.
7. Pazol, K., Whiteman, M. K., Folger, S. G., Kourtis, A. P., Marchbanks, P. A. et al. (2015). Sporadic Contraceptive Use and Non-Use: Age-Specific Prevalence and Associated Factors. *American Journal of Obstetrics and Gynecology*, 10:1-23.
8. Trussella J, Henry N, Hassan F, Prezioso A, Law A. et al. (2013). Burden of Unintended Pregnancy in The United States: Potential Savings with Increased Use of Long-Acting Reversible Contraception. *Contraception*, 87:154-161.
9. Frost, J. J. (2011). The State of Hormonal Contraception Today: Overview of Unintended Pregnancy. *American Journal of Obstetrics and Gynecology*. 1-3.
10. Macphail C., Pettifor A. E., Pascoe S., Rees H.V. (2007). Contraceptive Use and Pregnancy Among 15-24 Old South African Women. *Journal of BMC Medicine*, 5(3):10-24.
11. Eniojukan, J. F., Owonaro, P., James, T. (2015). Use of Contraceptives Among Staff and Students of Niger Delta University, Wilberforce Island, Nigeria. *World J Pharm Sci*, 3(1):125-132.
12. Bayelsa State Government. (2016). The Glory of All Lands. Facts About Bayelsa.
13. Imaledo, J. A., Opirite, B., Peter-Kio, O. B., Asuquo, E. O. (2012). Patten of Risky Sexual Behaviour and Associated Factors Among Undergraduate Students of The University of Port Harcourt, Rivers State, Nigeria. *The Pan African Medical Journal.* 97(12):1-10.
14. Federal Ministry of Health. (2007). National Policy on The Health and Development of Adolescents and Young People in Nigeria, 11-25.
15. Aziken, M. E., Okonta, P. I., Ande, A. B. A. (2006). Knowledge And Perception of Emergency Contraception Among Female Nigerian Undergraduates. *International Family Planning Perspectives*, 29(2):84-87.

16. Alkema, L., Kantorova, V., Menozzi, C., Biddlecom, A. (2013). National, Regional, and Global Rates and Trends in Contraceptive Prevalence and Unmet Need for Family Planning Between 1990 And 2015: A Systematic and Comprehensive Analysis. *Lancet*, 381:1642-1652.
17. Somba, M. J., Mbonile, M., Obure, J., Mahande, M. J. (2014). Sexual Behaviour, Contraceptive Knowledge and Use Among Female Undergraduates' Students of Muhimbili and Dar Es Salaam Universities Tanzania: A Cross-Sectional Study. *BMC Women's Health*, 94(14):1-8.
18. Akani, C. I., Enyindah, C. E., Babatunde, S. (2008). Emergency Contraception: Knowledge and Perception of Female Undergraduates in The Niger Delta of Nigeria. *Ghana Med J.* 42(2):68-70.
19. Cadmus, E., Owoaje, E. (2009). Patterns of Contraceptive Use Among Female Undergraduates in The University of Ibadan, Nigeria. *The Internet Journal of Health.* 10(2):1-9.
20. Nwachukwu, I., Obasi, O. O. (2008). Use of Modern Birth Control Methods Among Rural Communities in Imo State, Nigeria. *African Journal of Reproductive Health.* 12(1):101-108.
21. Deneke, A. (2008). Women's Knowledge, Preferences, and Practices of Modern Contraceptive Methods in Woreta, Ethiopia. *Administrative Pharmacy*, 4:302-307.
22. Aigbiremolen, A. O., Duru, C. B., Abah, S.O., Abejegah, C., Asalu O. B. et al. (2014). Contraception Among Tertiary Students: Knowledge, Use and Behaviour of Female Undergraduates in Edo State, Nigeria. *Global Journal of Medical Research: K Interdisciplinary*, 14 (2): 1-8.
23. Hubachera D, Mavraneczoulis I, Mcginna E. (2008). Unintended Pregnancy in Sub-Saharan Africa: Magnitude of The Problem and Potential Role of Contraceptive Implants to Alleviate It. *Contraception*, 78:73-78.
24. Sriprasert, I., Chaovitsaree, S., Sribanditmongkhon, N., Sunthornlimsiri, N., Kietpeerakool, C. (2015). Unintended Pregnancy and Associated Risk Factors Among Young Pregnant Women. *International Journal of Gynecology and Obstetrics*, 1-14.
25. Johnson, S., Christine Pion, C., Jennings, V. (2013). Current Methods and Attitudes of Women Towards Contraception in Europe and America. *J. Reproductive Health*, 10(7)1742-4755.
26. Coles, M. S., Makino, K. K., Stanwood, N. L. (2011). Contraceptive Experiences Among Adolescents Who Experience Unintended Birth. *Contraception*, 84:578-584.

Cite this article: Peter A. Owonaro, Daughter A. Owonaro. (2026). Sexual Behaviours and Unintended Pregnancy Among the Female Undergraduates of Niger Delta University: Prevalence and Associated Factors, *Journal of Women Health Care and Gynaecology*, BioRes Scientia Publishers. 6(3):1-8. DOI: 10.59657/2993-0871.brs.26.120

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Article History: Received: July 25, 2026 | Accepted: August 10, 2026 | Published: August 17, 2026