

Institutional Differences in Sexual Disposition and HIV-Risk Behaviours among Tertiary and Secondary School Students in Bayelsa State, Nigeria: A Comparative Analysis

IBEGI, IBEGI SAVIOUR¹, HENRY, MESSIAH TMT², TIMI, FIEKUMO BUSERI³, OLODIAMA, PROVIDENCIA CHICHI⁴, PETER, AGALA OWONARO⁵, OYINBRAKEMI OKPORU⁶

^{1,2,5}*Department of Social and Public Health Pharmacy, Faculty of Pharmaceutical Sciences, Bayelsa Medical University, Bayelsa State, Nigeria.*

³*Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmaceutical Sciences, Bayelsa Medical University, Bayelsa State, Nigeria*

^{6,4}*Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria*

Abstract- Background: Sexual disposition and HIV-risk behaviours among students may vary meaningfully by institutional context, yet Nigerian studies rarely compare federal tertiary institutions with state-owned secondary schools within the same locality. **Objective:** This study compared social activities, sexual attitude and perception, and sexual risk practices among students of two tertiary institutions (Niger Delta University [NDU] and Federal University, Otuoke [FUO]) and two secondary schools (Otuasega and Belary) in Bayelsa State, and tested whether institution significantly predicted these outcomes. **Methods:** A descriptive cross-sectional design was used with 357 students selected by stratified and convenience sampling. Data were analysed using regression, Pearson chi-square, and t-tests (SPSS version 23), comparing outcomes across the four institutions and by age and sex within each institution. **Results:** Institution was not a significant overall predictor of social activity ($p = .431$) or of sexual risk practice ($p = 1.000$; $\text{Exp}(B) = .000$) when modelled with other demographic variables. However, item-level comparisons revealed significant institutional differences: NDU students reported higher odds of bisexual activity, oral sex, and social-media sexual pressure; FUO and Belary students reported higher engagement in sexual intercourse and social/emotional sexual activity by age; and Belary students alone reported significantly higher practice of drug use, high-risk partnering, and anal sex. **Conclusion:** While institution does not predict overall sexual risk status in this population, specific high-risk behaviours cluster differently across federal tertiary and state secondary institutions, indicating that a uniform, non-institution-

specific HIV prevention approach may miss behaviour specific risk clusters. **Conclusion:** Institution-tailored, behaviour-specific HIV prevention interventions are recommended over a one-size-fits-all approach.

Keywords: Institutional Comparison, Sexual Disposition, HIV Risk, Hypothesis Testing, Students, Bayelsa State, Nigeria

I. INTRODUCTION

Bayelsa State reports one of the highest HIV prevalence rates in Nigeria, with elevated rates of multiple partnerships and inconsistent condom use previously documented across its social and educational environments. The state's educational institutions differ meaningfully in context: Niger Delta University and Federal University, Otuoke are federal tertiary institutions serving a broader catchment of young adults, while Otuasega and Belary are state-owned secondary schools serving adolescents in more localized, and in the case of Otuasega, more rural settings.

Institutional environment, including level of supervision, peer composition, urban or rural setting, and age range of the student body, has been identified in the literature as a contextual factor shaping sexual disposition and risk behaviour (Uchudi, Magadi & Mostazir, 2012). However, most Nigerian studies on

adolescent and youth sexual risk report pooled or single-institution findings, limiting understanding of how risk clusters differently across institutional types within the same state.

This study addressed this gap by directly comparing social activities, sexual attitude and perception, and sexual risk practices among students of NDU, FOU, Otuasega, and Belary, and by testing the hypotheses that there is no significant difference in social activities and practices (H1) and no significant difference in sexual risk practices (H4) across these institutions.

II. METHODS

Study Design and Setting

A descriptive cross-sectional design was used across four educational institutions in Bayelsa State: NDU and FOU (tertiary) and Otuasega and Belary (secondary).

Population and Sampling

A sample size of 357 was determined using the Krejcie and Morgan (1970) formula from an estimated population of 5,000 across the four institutions, using stratified and convenience sampling. Table 1 shows the distribution of respondents by institution.

Table 1. Distribution of respondents by institution, with overall regression estimate for institution as a predictor of sexual risk status

Institution	Type	n	%	Sig.	Exp(B)	95% CI
Niger Delta University (NDU)	Federal tertiary	106	30.0	.431	1.139	.824–1.573
Federal University, Otuoke (FUO)	Federal tertiary	106	30.0	–	–	–
Otuasega Secondary School	State secondary (rural)	85	24.1	–	–	–

Belary Secondary School	State secondary (urban)	56	15.9	–	–	–
-------------------------	-------------------------	----	------	---	---	---

Instrument and Data Collection

A structured, interviewer-administered questionnaire covering social activities, sexual attitude/perception, and sexual risk practices was used, validated by clinical pharmacy and pharmacy practice experts and pre-tested outside the study institutions.

Data Analysis

Regression analysis was used to test whether institution, alongside other demographic variables, significantly predicted overall sexual activity and risk practice (omnibus test of H1 and H4). Pearson chi-square and independent t-tests were then used to compare each activity and practice item by institution, stratified by age and sex, to detect item-level differences that an omnibus model may mask. Analyses were conducted using SPSS version 23.

Ethical Consideration

Ethical approval and a letter of introduction were obtained from the Head of Department, Clinical Pharmacy and Pharmacy Practice. Informed consent was obtained from all respondents, and confidentiality was assured throughout.

III. RESULTS

Table 2 summarizes the outcome of hypothesis testing. Institution was not a significant overall predictor of either social activity ($p = .431$) or sexual risk practice ($p = 1.000$; $\text{Exp}(B) = .000$) when modelled alongside age, sex, residence, ethnicity, religion, and marital status. Both H1 and H4 were therefore retained at the omnibus level. However, item-level chi-square and t-test comparisons revealed several statistically significant institutional differences, indicating that institution matters for specific behaviours even though it does not predict overall risk status.

Table 2. Summary of hypothesis testing outcomes (H1 and H4)

Hypothesis	Domain tested	Omnibus test result	Decision
H1	Social activities/practices by institution	Institution not a significant overall predictor ($p = .431$); item-level institutional differences detected for specific activities (see Table 3)	Retained (overall); rejected at item level
H4	Sexual risk practices by institution	Overall model not significant ($p = 1.000$; $\text{Exp}(B) = .000$); item-level institutional differences detected for specific practices (see Table 4)	Retained (overall); rejected at item level

Table 3 presents the significant institutional differences observed in social activities. NDU students showed significantly higher age- and sex-linked odds of engaging in bisexual activity, oral sex among friends, and being pressured into sex-chatting on social media. FUI and Belary students showed significantly higher odds of engaging in sexual intercourse and weekly social/emotional sexual activity by age, while Belary students alone showed a significant sex-linked pattern in social/emotional sexual activity and internet use for sexual films.

Table 3. Significant institutional differences in social activities and practices

Activity item	Institution	Comparator	Sig. (p)
Sexual intercourse	FUI	Age	.0091
Sexual intercourse	Belary	Age	.0222
Use of lizard dung / paint-sniffing / kolanut before sex	NDU	Age	.0008 / .0035
Use of lizard dung / paint-sniffing / kolanut before sex	FUI	Age	.0260 / .0057
Bisexual activity	NDU	Sex	.0000
Bisexual activity	FUI	Sex	.0363
Pressured for sex-chatting on social media	NDU	Age	.0354
Social/emotional activity involving sex per week	NDU	Age	.0088
Social/emotional activity involving sex per week	FUI	Age	.0102
Social/emotional activity involving sex	Belary	Sex	.0000

per week			
Oral sex among friends	NDU	Age	.0006
Surfing internet for sexual films	Belary	Age / Sex	.0409 / .0109

Table 4 presents the significant institutional differences observed in sexual risk practices. Anal sex practice was significantly more common among NDU students, while smoking and drug use, having high-risk partners, and anal sex were all significantly more common among Belary students, despite Belary recording the smallest sample size among the four institutions.

Table 4. Significant institutional differences in sexual risk practices

Practice item	Institution	Sig. (p)
Having anal sex	NDU	.0404
Smoking and use of drugs	Belary	.0162
Having high-risk partners	Belary	.0077
Having anal sex	Belary	.0173

IV. DISCUSSION

The finding that institution was not a significant overall predictor of sexual activity or risk practice, despite clear item-level institutional differences, illustrates a common limitation of omnibus regression models in behavioural research: aggregate non-significance can mask clinically and programmatically important sub-group patterns (Uchudi, Magadi & Mostazir, 2012). This pattern echoes the broader literature on institutional and community-level heterogeneity in HIV risk behaviour, where urban-rural and institutional-type differences have been shown to shape specific risk

behaviours rather than overall risk propensity (Xiaoming Li et al., 2004).

The clustering of bisexual activity, oral sex, and social-media-linked sexual pressure at NDU, a large federal university with a broad age range and less direct parental supervision, is consistent with literature linking reduced institutional supervision and greater social/digital exposure to diversified sexual risk behaviour among university students (Boies, Sheana & McFarlane, 2002).

Conversely, the concentration of drug use, high-risk partnering, and anal sex practice specifically at Belary Secondary School, despite its smaller sample size, is a notable and potentially under-recognized finding, as secondary school students are often assumed to be at lower risk than their tertiary counterparts. This finding aligns with Beston, Tapiwa and Kennedy's (2018) observation that community and household-level factors, rather than institutional level alone, can elevate risk among younger populations in specific localities.

V. STUDY LIMITATIONS

The unequal sample sizes across institutions, particularly the smaller sample at Belary Secondary School, may limit the statistical power and generalizability of institution-specific findings. The cross-sectional design also precludes causal interpretation of why specific behaviours cluster at specific institutions. Self-reported data on sensitive sexual behaviours are also subject to social desirability bias, which may vary systematically by institutional supervision level.

VI. CONTRIBUTION TO KNOWLEDGE

This study demonstrates that overall non-significant institutional effects can coexist with clinically meaningful, behaviour-specific institutional differences, an analytic distinction with direct relevance to HIV prevention programming in Bayelsa State. It provides the first direct four-institution comparison spanning both federal tertiary and state secondary levels in the state, identifying Belary

Secondary School as an unexpected hotspot for specific high-risk practices.

VII. PUBLIC HEALTH IMPLICATIONS

HIV prevention programming in Bayelsa State should move beyond a uniform, institution-blind approach and instead target the specific behaviours shown to cluster at each institution: social-media and peer-pressure-linked interventions at NDU, and substance use and partner-risk-focused interventions at Belary Secondary School in particular. Programme planners and school health authorities should be cautious about relying solely on aggregate, non-significant regression findings when prioritizing intervention sites, as this study shows such findings can conceal important sub-group risk concentrations.

REFERENCES

- [1] Beston, M., Tapiwa, S. G., & Kennedy, M. (2018). Determinants of risky sexual behaviour among the youth in Malawi (DHS Working Paper No. 141). ICF.
- [2] Boies, S. C., Sheana, B., & McFarlane, M. (2002). University students' uses of and reactions to online sexual information and entertainment: Links to online and offline sexual behaviour. *The Canadian Journal of Human Sexuality*, 13(2), 77–89.
- [3] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610.
- [4] Uchudi, J., Magadi, M., & Mostazir, M. (2012). A multilevel analysis of the determinants of high-risk sexual behaviour in sub-Saharan Africa. *Journal of Biosocial Science*, 44(3), 289–311.
- [5] Xiaoming, L., Fang, X., Lin, D., Mao, R., Wang, J., Cottrell, L., Harris, C., & Stanton, B. (2004). HIV/STD risk behaviors and perceptions among rural-to-urban migrants in China. *AIDS Education and Prevention*, 16(6), 538–556.