African Science Frontiers Initiatives Research Journal | ASFIRJ

Received: 29 June 2024 | Revised: 16 August 2024 | Accepted: 4 September 2024 | Published: 18 September 2024

ORIGINAL ARTICLE

Investigating predictors of vulnerability to risky sexual behaviour among adolescents and young people in Nigerian higher education institutions

OLUKEMI GRACE ADEBOLA[1], FEMI BARNABAS ADEBOLA[2], OLUSEGUN SUNDAY EWEMOOJE[3,*]

AFFILIATIONS:
[1]Institute of Technology-Enhanced Learning and Digital Humanities (INTEDH), Federal University of Technology, Akure, Nigeria

[2]Department of Statistics, Federal University of Technology, Akure, Nigeria

[3]Department of Statistics, University of Botswana, Gaborone, Botswana

CORRESPONDENCE:
Olusegun Sunday Ewemooje
Department of Statistics, University of Botswana, Gaborone, Botswana
Email: olusegunewemooje@gmail.com

ABSTRACT

BACKGROUND:
Adolescents and young people are vulnerable to sexual risk behaviour (SRB), leading to several negative outcomes, including unwanted pregnancies, susceptibility to Sexually Transmitted Infections as well as HIV/AIDS. The situation of these vices in school did not seem to improve despite the teaching of age-appropriate Comprehensive Sexuality Education (CSE) in both primary and secondary schools.

OBJECTIVE:
This study aimed to examine the prevalence of risky sexual behaviour among adolescents and young adults in a Nigerian higher institution.

METHODS:
The study used cross-sectional data collected through a survey conducted at the Federal University of Technology, Akure, Nigeria, among undergraduate students (712). Pearson Chi-square test and binary logistic regression were used for the analyses.

RESULTS:
Two out of every seven undergraduates were involved in SRB, with older adolescents being 6 times more active than the younger ones. Parents' socioeconomic status - household wealth index, educational level and age were all determinants of adolescents' and young people's activeness in SRB. Additionally, while one-third reported being influenced by their friends, a quarter of the respondents did not use contraceptives and about 8% had multiple sex partners.

CONCLUSION:
Among university students, older students, those with higher study level, peer influence, and increased household wealth index were associated with increased odds of risky sexual behaviours than their respective counterparts. There is a need for a CSE in higher education institutions and the creation of youth-friendly centres on campuses, among other initiatives.

KEYWORDS:
Adolescents, young people, sexual behaviour, sexually transmitted infections, higher institutions

INTRODUCTION

The World Health Organization (WHO)[1] reported in 2019, that adolescents and young people are an integral part of Nigeria's population given that they comprise 55% of the nation's population. This demographic dividend elates the nation's human resources competence and stands as an advantage in the improvement of the overall productivity of her economy. In Nigeria and other African countries, the adolescent population is steadily growing, indicating a progressive increase in the overall population beyond 2050[1-2]. However, the transitioning period for adolescents comes with huge changes in the body, including sexual development, leading to different behavioural outcomes. The National Coalition for Sexual Health[3] stated that a significant aspect of behavioural change among adolescents is their involvement in sexual activities when they are least prepared for it. Consequent upon these experiences with their specific sociocultural and economic factors, adolescents are susceptible to risky sexual behaviours, particularly pre-marital sex, which may include casual sex, oral sex, as well as transactional sex[4].

Sexual risk behaviour as defined by Keto et al.,[5] refers to sexual activities that make an individual liable to the risk of sexually transmitted infections (STIs), including HIV and unplanned pregnancies. Dalenberg et al.,[6] reported that despite individual differences, young people aged 12-18 years are increasingly engaging in romantic and sexual activities. This sexual risk behaviour pattern is a major setback in their reproductive and overall health conditions which invariably affect the nation's economy. For example, the Nigerian government reported in 2019, that Lancet Commission on Adolescents Health and Wellbeing classified Nigeria as a multi-burden country in terms of adolescents' health due to their high susceptibility to STIs among other factors[2]. Additionally, reporting in 2019, the National Population Commission (NPC) [Nigeria] and Inner-City Fund (ICF) International, through the Nigerian Demographic and Health Survey [NDHS] averred that the level of unprotected sex is high among adolescents, indicating 35% females and 10% males with low use of contraceptives[7]. Menon et al.,[8] affirmed that early sexual debut, multiple sexual partners, and non-use of condoms are some of the risky sexual behaviours among young people. The National Agency for the Control of AIDs in Nigeria (NACA) reported in 2019, as well that adolescent girls and young women in Nigeria continue to record the highest prevalence of HIV since its outbreak [9]. Literature has also revealed high incidences of teenage pregnancies and unsafe abortions among adolescents[10].

Adolescents and young people in institutions of higher learning are vulnerable to sexual risk behaviour while in school. For instance, Odimegwu and Adedini[11], Udigwe et al.[12], Adebola and Adebola[13], and Adebola[14], all reported that adolescents and young people in school are engaged to a very high extent in sexual behaviours. Previous research has also confirmed that adolescents in Nigerian higher institutions are vulnerable to risky sexual behaviour[15]. The vulnerabilities of adolescents and young people in higher institutions to such negative sexual practices have grave consequences. For example, Brian et al.[16] established that adolescents in higher institutions engage in pre-marital sex with multiple sex partners which leads to STIs among them while Lanari et al.[17] reported a positive relationship between involvement in sexual activities and the grade obtained in the high school.

The determinants of adolescents' sexual risk behaviour as accentuated in past literature include poverty, low educational level, gender inequality as expressed in norms and values, parents, and peer pressure as well as the indiscriminate use of social media[14,18-21]. Furthermore, Famutimi and Oyetunde[22] outlined some specific adolescents' sexual risk behaviours, which correlate to a high extent with other researchers' outcomes, including but not limited to early initiation of sexual activity, sexual intercourse without contraception, unplanned pregnancies and abortions, multiple sexual partners, casual sex with STI and HIV infected partners, oral drug use, and unsafe abortions. Odimegwu and Adedini[11] affirmed that adolescents in universities are immensely involved in all sorts of sexual practices that could fetch them some financial benefits, especially those from poor home backgrounds. Myriads of studies have shown that specifically in institutions of higher learning, peer influence and parental socioeconomic factors are germane to the extent of adolescents and young people's involvement in SRB[23-25]. Unfortunately, there is limited data on the prevalence, patterns, and trends of risky sexual behaviours among students in Nigerian higher education institutions. Additionally, there

is insufficient evidence on the effectiveness of current sexual education programs within Nigerian higher education institutions. The influence of social factors, such as peer pressure and the ability to express one's feelings are also understudied. Therefore, this study aimed to address the lack of information about the prevalence of risky sexual behaviour among adolescents and young people in Nigerian higher institutions. Additionally, it sought to identify sociodemographic determinants of risky sexual behaviours among this group in order to advocate for interventions and solutions to this menace.

METHODS

Study Design

This study utilised data collected through a survey conducted at the Federal University of Technology, Akure (FUTA), Nigeria, among undergraduate students. It used a cross-sectional design through the administration of structured questionnaires to collect information on the students' sexual behaviours and their socio-demographic characteristics between November 1st, 2022, and December 15th 2022. The respondents were sampled using a multi-stage sampling technique. In the first stage, five (5) schools were selected out of the eight (8) schools at FUTA. From the five selected schools, a sample of 27 departments was selected using probability proportional to size at the second stage.

Sample Size Calculation

The sample size calculation for this survey involved key factors such as student population size, the margin of error, confidence level and the expected proportion of risky sexual behaviour in the population. The student population in FUTA is large as it is known to be more than 17,000 (N>10,000), hence, the minimum sample size was calculated using the formula:

$$n = \frac{Z^2 * P * (1 - P)}{E^2}$$

Where n is the sample size, Z (99%) is the confidence level, E (5%) is the margin of Error and P (0.5) is the estimated proportion of risky sexual behaviour in the population. P=0.5 was chosen as a conservative estimate for lack of prior information on the proportion of risky sexual behaviour among the students.

$$n = \frac{1.96^2 * 0.5 * (1 - 0.5)}{0.05^2} = 384.16 \cong 385 \text{ students}$$

Thus, a minimum of 385 students was needed to be surveyed to obtain a reliable estimate for this study. Students were selected from each selected department using a simple random sampling method according to their academic level. Hence, a university-wide representative sample of 712 undergraduate students aged 17 years and above from these 27 departments was selected for this study.

Measures

The outcome variable for this study was risky sexual behaviour and it was measured using three risk indicators: early sexual debut, non-use of contraceptives during sexual intercourse and multiple sexual partnerships. A student was said to be engaged in sexual risk behaviour if he/she was involved in at least one of these practices. A student was said to be involved in early sexual debut if he/she had sexual intercourse on or before age 14 years with a response categorised: "0 = No" (non-early sexual debut) or "1 = Yes" (early sexual debut). Respondents were asked to specify whether they used any form of contraception during the last sexual intercourse with response categorised as "0 = No" (contraception use) or "1 = Yes" (non-use of contraception). Multiple sexual partnership variable was measured by the question on the number of sexual partners in the last 12 months, which was dichotomised as "0 = one (1) or no partner" or "1 = two (2) or more partners."

The relation of sociodemographic factors; age, gender, school/faculty, level of study, place of residence, parent literacy (measured as parent's ability to read and write with understanding in English language or any Nigerian language), household wealth index (measures household per capita income, assets owned and housing quality), household size, previous level of sexuality education, negative/bad influence from classes or hostels and ability to express feelings to the risky sexual behaviours were also measured. All the explanatory variables were measured as categorical variables. Age was measured as "1 = 17-19 years", "2 = 20 – 22 years" and "3 = 23 years above"; gender was measured as "1 = Male," and "2 = Female"; school/faculty is measured as "1 = School of Physical Sciences", "2 = School of Life Sciences", "3 =

School of Engineering and Engineering Technology", "4 = School of Agriculture and Agricultural Technology" and "5 = School of Computing"; level of study was measured as "1 = 100L", "2 = 200L", "3 = 300L", "4 = 400L" and "5 = 500L; place of residence is measured as "1 = urban" and "2 = rural"; parent literacy was measured as "0 = Non-literate" and "1 = Literate"; household wealth index was measured as "1 = poorer," "2 = middle" and "3 = richer"; household size is measured as "1 = 1-4 persons", "2 = 5-6 persons" and "3 = more than 6 years"; previous level of sexuality education was measured as "0 = None", "1 = Not comprehensive", "2 = Comprehensive" or "3 = Highly comprehensive"; negative/Bad influence from classes or hostels was measured as "0 = No" and "1 = Yes"; and ability to express feelings is measure as "0 = No" and "1 = Yes".

Statistical analysis

The distribution of the socio-demographic characteristics of the selected undergraduate students was analysed using descriptive statistics such as frequencies, percentages, and charts. The Pearson Chi-square test was used to measure the association between the socio-demographic characteristics and risky sexual behaviour, using a p-value <0.05 as the criterion for statistical significance. Lastly, multivariable logistic regression was used to analyse the associations by simultaneous adjustment for variables that were significant from the Chi-square test. The result was then presented using the Adjusted Odds Ratio (OR), with <0.05 threshold used to indicate statistical significance. All analyses were carried out using SPSS version 27.

Ethical clearance

The ethical clearance for this research was obtained from the Centre for Research and Development (CERAD) at FUTA. Formal approval was secured from CERAD with informed consent duly signed/obtained from the participants before data were collected. All personal identifiers were removed from the questionnaires by using code numbers. Thus, all data obtained were then stored on a passworded system to avoid misuse of information obtained from the respondents. Participation in the survey was voluntary and participants were allowed to leave at any time if they were uncomfortable with the survey.

RESULTS

Descriptive Results

Sociodemographic characteristics of respondents

In table 1, more than two in every five (41.0%) of the undergraduates were 23 years and above, two-fifths (39.9%) of them were between age 20-22 years while approximately one-fifth (19.1%) of them were teenagers. One in every three (33.3%) of the students were females while two-thirds (66.7%) of the students were males. More than a quarter (26.3%) of the students were currently studying Physical sciences courses, one in every five (21.9%) of them were studying engineering and engineering technology while one in every six (16.9%) were currently studying courses in computing. Almost four in every five (79.1%) of the students lived in the urban settlements before gaining admission into the university while only one in every five (20.9%) of them lived in the rural areas. Approximately four in every five (78.8%) of the students' parents were literates, while only one in every five (21.2%) of them were non-literate. More than four in every five (82.9%) of them lived in a household with middle wealth index, while 8.8% and 8.6% lived in poorer households and richer households. More than half (56.6%) of them lived in households with 5-6 persons while 23.7% and 19.7% lived in a smaller household size of 1-4 persons and households with more than 6 persons, respectively. Two in every five (41.4%) had comprehensive sexuality education up to their secondary education, one-third (33.4%) had noncomprehensive sexuality education, and 12.1% did not have comprehensive sexuality education. Slightly more than one-third (34.6%) of the undergraduate students had negative/bad influence from their mates with half (51.1%) of them being able to express their feelings.

Table 1. The Sociodemographic Distribution of the Undergraduate Students

	Frequency	Percent
Age		
17 - 19 years	136	19.1
20 - 22 years	284	39.9
23 years & above	292	41.0
Gender		
Male	475	66.7
Female	237	33.3
School/Faculty of Study		
School of Physical Sciences	187	26.3
School of Life Sciences	126	17.7
School of Engineering and Engineering Technology	156	21.9
School of Agriculture and Agricultural Technology	123	17.3
School of Computing	120	16.9
Study Level		
100L	257	36.1
200L	134	18.8
300L	99	13.9
400L	82	11.5
500L	140	19.7
Place of permanent residence		
Urban	563	79.1
Rural	149	20.9
Parents' Literacy		
Non-literate	151	21.2
Literate	561	78.8
Wealth Index		
Poorer	63	8.8
Middle	588	82.6
Richer	61	8.6
Household Size		
1-4 persons	169	23.7
5-6 persons	403	56.6
> 6 persons	140	19.7
Previous Level of Sexuality Education		
None	86	12.1
Noncomprehensive	238	33.4
Comprehensive	295	41.4
Highly comprehensive	93	13.1
Negative/Bad influence from school mates		
No	466	65.4
Yes	246	34.6
Ability to express feeling		
No	348	48.9
Yes	364	51.1
Total	712	100.0

Prevalence of risky sexual behaviours

The distribution of the risky sexual behaviours among the students who had a history of sexual intercourse showed that a quarter (25.0%) of them were not using any form of contraception, 8.0% of them had multiple sexual partners, while 3.2% had early sexual initiation before age

14 years (See Figure 1). The overall prevalence showed that two in every seven (28.7%) of the students were at risk as shown in Figure 2.

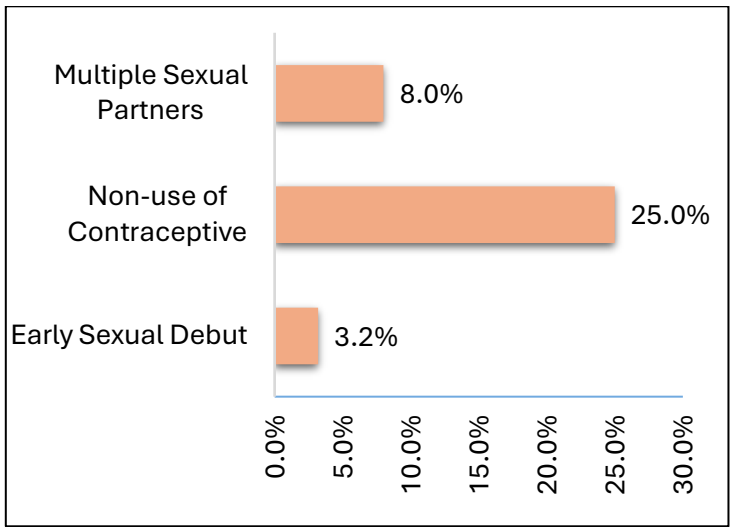

Figure 1. The Breakdown of Risky Sexual Behaviours among the Undergraduate Students

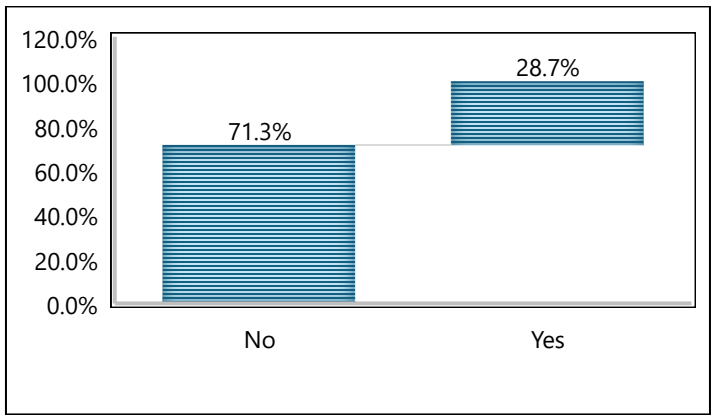

Figure 2. The Overall Distribution of Risky Sexual Behaviours among the Students

Bivariate Analysis

Table 2 shows the results of the bivariate analysis using Chi-square tests in examining the association between the risky sexual behaviour and sociodemographic factors among the undergraduate students. Age, school/faculty, level of study, parents' literacy, household wealth index, household size and previous level of sexuality education were all significantly associated with risky sexual behaviours among the students. More than two in every five (43.5%) of the students aged 23 years and above were involved in risky sexual behaviour, while only 9.6% of students aged 17 – 19 years are at risk. Three-fifths (60.3%) of the students in life sciences were involved in risky sexual behaviour while the risk increases with increase in level of study among the students. The proportion of students whose parents are literate who were involved in risky sexual behaviour (30.5%) was higher than those whose parents are non-literate (21.9%). Those from middle wealth index households and those who live in households with 5-6 persons had higher risk of 31.6% and 32.0% compared to others, respectively. Furthermore, students who had higher comprehensive level of sexuality education before gaining admission for university education had higher (34.9%) risk of being involved in risky sexual behaviours than others.

Multivariable Analysis

Table 3 shows the results of the multivariable logistic regression model in predicting factors associated with risky sexual behaviours among undergraduate students. The results show that students aged 23 years and above were six times ($OR = 6.047;\ 95\%\ CI = 2.649 - 13.803$) significantly more likely to be involved in risky sexual behaviour than those aged 17 – 19 years. Those studying engineering courses were significantly more likely ($OR = 3.146;\ 95\%\ CI = 1.631 - 6.069$), while those studying life sciences, agricultural and computing courses were significantly less likely ($OR = 0.331, 0.389$ and 0.226, respectively) to be involved in risky sexual behaviour than those studying physical sciences courses. Those who were in their second, third and fifth (final) years were significantly more likely to be involved in risky sexual behaviour than their counterparts in the first year. There was also an indication that the risk increases with an increase in the level of study. Also, those who lived in middle-wealth index households were significantly more likely ($OR = 2.711;\ 95\%\ CI = 1.205 - 6.098$) to engage in risky sexual behaviour than those who lived in richer households.

Table 2. The Association between the Sociodemographic factors and Risky Sexual Behaviours

	Risky Sexual Behaviour		p-value
	No	Yes	
Age			<.0001
17- 19 years	123 (90.4%)	13 (9.6%)	
20 - 22 years	220 (77.5%)	64 (22.5%)	
23 years & above	165 (56.5%)	127 (43.5%)	
Gender			0.299
Male	333 (70.1%)	142 (29.9%)	
Female	175 (73.8%)	62 (26.2%)	
School/Faculty of Study			<.0001
School of Physical Sciences	147 (78.6%)	40 (21.4%)	
School of Life Sciences	50 (39.7%)	76 (60.3%)	
School of Engineering and Engineering Technology	129 (82.7%)	27 (17.3%)	
School of Agriculture and Agricultural Technology	104 (84.6%)	19 (15.4%)	
School of Computing	78 (65.0%)	42 (35.0%)	
Study Level			<.0001
100L	207 (80.5%)	50 (19.5%)	
200L	97 (72.4%)	37 (27.6%)	
300L	65 (65.7%)	34 (34.3%)	
400L	56 (68.3%)	26 (31.7%)	
500L	83 (59.3%)	57 (40.7%)	
Place of permanent residence			0.173
Urban	395 (70.2%)	168 (29.8%)	
Rural	113 (75.8%)	36 (24.2%)	
Parents' Literacy			0.037
Non-literate	118 (78.1%)	33 (21.9%)	
Literate	390 (69.5%)	171 (30.5%)	
Wealth Index			0.001
Poorer	54 (85.7%)	9 (14.3%)	
Middle	402 (68.4%)	186 (31.6%)	
Richer	52 (85.2%)	9 (14.8%)	
Household Size			0.035
1-4 persons	123 (72.8%)	46 (27.2%)	
5-6 persons	274 (68.0%)	129 (32.0%)	
> 6 persons	111 (79.3%)	29 (20.7%)	
Previous Level of Sexuality Education			0.021
None	65 (75.6%)	21 (24.4%)	
Noncomprehensive	181 (76.1%)	57 (23.9%)	
Comprehensive	192 (65.1%)	103 (34.9%)	
Highly comprehensive	70 (75.3%)	23 (24.7%)	
Negative/Bad influence from school mates			0.796
No	331 (71.0%)	135 (29.0%)	
Yes	177 (72.0%)	69 (28.0%)	
Ability to express feeling			0.107
No	258 (74.1%)	90 (25.9%)	
Yes	250 (68.7%)	114 (31.3%)	

Table 3. Multivariate logistic regression model showing odds ratios predicting risky sexual behaviour among the undergraduate students

	Adjusted Odd Ratio	95% Confidence Interval	
		Lower Bound	Upper Bound
Age			
17- 19 years	Reference		
20 - 22 years	1.75	0.82	3.71
23 years & above	6.05	2.65	13.80
School/Faculty of Study			
School of Physical Sciences	Reference		
School of Life Sciences	0.33	0.19	0.59
School of Engineering and Engineering Technology	3.15	1.63	6.07
School of Agriculture and Agricultural Technology	0.39	0.21	0.72
School of Computing	0.23	0.11	0.45
Study Level			
100L	Reference		
200L	1.93	1.01	3.67
300L	3.55*	1.71	7.39
400L	1.57	0.70	3.50
500L	2.03	0.96	4.27
Parents' Literacy			
Non-literate	Reference		
Literate	1.23	0.72	2.10
Wealth Index			
Poorer	1.30	0.41	4.07
Middle	2.71	1.21	6.10
Richer	Reference		
Household Size			
1-4 persons	Reference		
5-6 persons	1.13	0.70	1.83
> 6 persons	0.74	0.40	1.36
Previous Level of Sexuality Education			
None	Reference		
Noncomprehensive	0.77	0.40	1.51
Comprehensive	0.62	0.33	1.16
Highly comprehensive	0.74	0.47	1.18

Significant at 0.05 level, ** Significant at 0.01 level, *** Significant at 0.001 level

DISCUSSION

The study found that there is a high prevalence of risky sexual behaviour among students age group 23 years and above. This age group was six times more active than the younger age groups. It also revealed that risky sexual behaviours among undergraduates increased as their stay in the university increased. Furthermore, it was revealed that those with a higher household wealth index were less likely to engage in risky sexual behaviours than those in a lower household wealth index.

Nevertheless, this study acknowledges limitations that may arise due to the sensitive nature of some questions, as respondents might not have felt comfortable disclosing certain information about their sexual lives. Also, the term "parent literacy" is operationalised as the ability of a parent to read and write in English or any Nigerian language with understanding. Meanwhile, the

"household wealth index" refers to the household's per capita income, assets owned, and housing quality. Respondents were asked to provide information about their parent's literacy and household wealth index. It is important to note that reporting on this information could lead to social desirability bias, which might indirectly affect the outcome of the research. Likewise, this study was cross-sectional, making it impossible to measure causal relationships that are useful for policy development. However, the study is important in that it provides a snapshot of the current prevalence, patterns and correlations between risky sexual behaviours and various demographic, social, and environmental factors. This informs immediate public health responses, making it a valuable method for researchers and policymakers to design targeted interventions.

Furthermore, age continues to be a veritable factor in adolescents and young people's sexual involvement as earlier noted by Inanc et al.[26] and Adebola et al.[27]. Likewise, Setteekul et al.[24] and Tekletsadik et al.[28] averred that age remained significant a significant factor, especially considering the biological changes in the body. This contradicts earlier qualitative research conducted among university students in the United Kingdom, which suggested that the longer students are at university, the more their priorities shift from social activities to academic performance. As a result, the likelihood of engaging in risky sexual behavior decreases.[29]. This study revealed that risky sexual behaviours among undergraduates increased as their stay in the university increased. This could be explained by peer pressure as peer influence is positively correlated with RSB in this study as one-third of the respondents attested to being influenced by their friends and mates. This aligned with the findings of early researchers which proved that young people mostly agree with peer's perceptions of sexual activities. For instance, Potard et al.[23] found that the perception of peers was significantly associated with a higher frequency of sexual initiation and commitment. Similarly, Widman et al.[30] reported that adolescents' engagement in sexual risk behaviour is closely linked to their belief that their peers are engaging in similar behaviour to varying degrees.

Additionally, this study disclosed that a higher household wealth index has a protective effect on sexual decision-making among undergraduates as poverty limits an individual's decision-making power in sexual relationships[21,31]. Parents' socioeconomic status – household wealth indexes were as well significantly associated with the RSB of adolescents and young people in this study as also authenticated by earlier researchers[32-33]. Also, Ali et al.[25] reported that condomless sex among adolescents was associated with place of residence as well as wealth index of household. In a related study, it was averred that young people's sexual behaviour is motivated by the significance of their parents' socioeconomic conditions[27].

CONCLUSION

Findings from this study contribute immensely to empirical evidence in the identification of factors responsible for undergraduates' risky sexual behaviours. Among university students, risky sexual behaviours were generally predicted by older age, higher study level, peer influence, and increased household wealth index. This is one practical solution for addressing the negative effects of RSB in line with the Sustainable Development Goals for 2030. Nigeria has consistently resonated with the persistence of STIs including HIV/AIDS among young people with policies that could help alleviate the challenge. An area of strength that may have been neglected as a solution to adolescents and young people's sexual behaviour is that of positive peer influence particularly for those in higher institutions who are mature for sexual activities. Educative interventions to adequately prepare adolescents and teach them skills in sexual decision-making are germane. Interventions that will change peers' influence into positive vibes that could help students concentrate on their studies to realise their academic goals and maintain sexual sanity should be encouraged on all higher institution campuses. Lastly, the need for Comprehensive Sexuality Education (CSE) in higher education and the creation of youth-friendly centres on campuses, among other initiatives should be prioritised.

ACKNOWLEDGMENTS

The authors express their gratitude to the Tertiary Education Trust Fund unit of the Federal Republic of Nigeria for funding this research through the 2020 institutional-based research grant.

CONFLICT OF INTEREST

The authors declare no competing interests

AUTHORS' CONTRIBUTIONS

OGA: Conceptualization, Writing, Review & Editing. FBA: Conceptualization, Methodology, Review & Editing. OSE: Conceptualization, Methodology, Writing, Review & Editing. All authors read and approved the final manuscript.

REFERENCES

1. World Health Organization. *Adolescent Health in Nigeria*. Geneva; 2019. https://www.afro.who.int/sites/default/files/2019-08/6%20Nigeria%20AH18052018.pdf (Accessed on 17th June 2023)
2. The Federal Republic of Nigeria. *National policy on the health and development of adolescents' young people in Nigeria:2020-2024*. Federal Ministry of Health, Abuja; 2019.
3. The National Coalition for Sexual Health. The Sexual Health of Youth in the United States - An Audience Profile; 2013. https://nationalcoalitionforsexualhealth.org/data-research/audience-profiles/document/AdolescentBackgrounder-final.pdf (Accessed on 17th June 2023)
4. Ogbonna BO. Adolescent and young people's health in Nigeria 1990-2015: Matching theory with practice. *European Journal of Pharmaceutical & Medical Research*. *2015;*2(7):105-109.
5. Keto T, Tilahun A, Mamo A. Knowledge, attitude and practice towards risky sexual behaviours among secondary and preparatory students of Metu town, South Western Ethiopia. *BMC Health*. *2020;* 20:1394.
6. Dalenberg WG, Timmerman MC, Kunnen ES, Van Geert PLC. Young people's everyday romance and sexual experiences in relation to sex-related conversations with parents: a diary study in the Netherlands. Sex Education. 2016;16(6):692-706.
7. National Population Commission (NPC) [Nigeria] and Inner-City Fund (ICF) International. *Nigeria Demographic and Health Survey 2018*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International; 2019.
8. Menon JA, Mwaba SOC, Thankian K, Lwatula C. Risky Sexual Behaviour among University Students. *International STD Research and Reviews*. 2016;4(1):1-7.
9. National Agency for the Control of AIDS [NACA]. *Revised National HIV and AIDS Strategic Framework 2019-2021: Future directions for the HIV/AIDS response in Nigeria; 2022*. https://naca.gov.ng/wp-content/uploads/2019/03/NATIONAL-HIV-AND-AIDS-STRATEGIC-FRAMEWORK-1.pdf (Accessed on 17th June 2023)
10. Adebola OG. The Nexus between Female Genital Mutilation and Child Marriage in Nigeria: A Cultural Inhibition to Achieving Sustainable Development Goals. *International Journal of Social Sciences (IJSS)*. 2020;10(2):1-8.
11. Odimegwu C, Adedini SA. Do family structure and poverty affect sexual risk behaviors of undergraduate students in Nigeria? Afr J Reprod Health. 2013;17(4):137-49.
12. Udigwe I, Adogu P, Nwabueze A, Adinma E, Ubajaka C, Onwasigwe C. Factors Influencing Sexual Behavior among Female Adolescents in Onitsha, Nigeria. *Open Journal of Obstetrics and Gynecology*. 2014;**4:**987-995.
13. Adebola OG, Adebola FB. Family characteristics: Indices of adolescent's sexual behaviour. International Journal of Science and Technology Education Research. 2015;6(2):9-18.
14. Adebola OG. Teenage pregnancy in Nigeria: An offshoot of the social structure. *The pacific journal of science and technology*. 2018;19(2):351-360.
15. Omisore A, Oyerinde I, Abiodun O, Aderemi Z, Adewusi T, Ajayi I, Fagbolade T, Miskilu S. Factors associated with risky sexual behaviour among sexually experienced undergraduates in Osun state, Nigeria. Afr Health Sci. 2022;22(1):41-50.
16. Brian AJ, Umeononihu O, Echendu AD, Eke N. Sexual behaviour among students in a tertiary educational institution in Southeast Nigeria. *Advances in Reproductive Sciences*. 2016;4:87-92.
17. Lanari D, Mangiavacchi L, Pasquanlili M. Adolescent sexual behaviour and academic performance of Italian students. *Genus*. 2020;76:21.
18. Malinga T, Modie-Moroka T. Factors influencing adolescents' sexual risky behaviours in Botswana. *The International Journal of Social Sciences and Humanities Intervention*. 2020;7(10):6229-6240.

19. Uzobo E, Enoch RO. Social Media use and sexual behaviour of undergraduate students in a Nigerian University. *Research Square*. *2020*.
20. Ewemooje OS, Biney E, Amoateng AY. Gender differences in risky sexual behaviour among South Africans: Evidence from recent Demographic and Health Survey, *Gender & Behaviour*. 2020;18(2):15606-15614.
21. Biney E, Ewemooje OS, Amoateng AY. Predictors of sexual risk behaviour among unmarried persons aged 15-34 years in South Africa, *The Social Science Journal*. 2022;59(4):543-558,
22. Famutimi EO, Oyetunde MO. Risky Sexual Behaviour among Secondary School Adolescents in Ibadan North Local Government Area, Nigeria. *IOSR Journal of Nursing and Health Science (IOSR-JNHS). 2014;*3(3):34-44.
23. Potard C, Courtois R, Rusch E. The influence of peers on risky sexual behaviour during adolescence. *Eur. J. Contracept Reprod. Health Care.* 2008;13(3):264-70
24. Settheekul S, Fongkaew W, Viseskul N, Boonchieng W, Voss JG. Factors influencing sexual risk behaviours among adolescents: A community-based participatory study. *Nurs Health Sci.* 2019;21(2):186-197.
25. Ali MM, Merdad L, Bellizzi S. Socioeconomic variations in risky sexual behavior among adolescents in 14 sub-Saharan Africa countries who report ever having had sex. Int J Equity Health. 2021 6;20(1):11.
26. Adebola OG, Ewemooje OS, Adebola FB. Quality of comprehensive sexuality education and risky sexual behaviour in Nigeria's higher institutions of learning. FUWUKARI Journal of Social Sciences (FUWJSS). 2024;3(1):1-17.
27. Inanc H, Meckstroth A, Keating B, Adamek K, Zaveri H, O'Neil S, McDonald K, Ochoa L. Factors influencing youth sexual activity: Conceptual models for sexual risk avoidance and cessation. *OPRE Research Brief* 2020-153. Washington DC: Office of Planning, Research, & Evaluation, Administration for children and families, U.S Department of Health and Human Services, 2020.
28. Tekletsadik EA, Ayisa AA, Mekonen EG, Workneh BS, Ali MS. Determinants of risky sexual behaviour among undergraduate students at the University of Gondar, Northwest Ethiopia. Epidemiol Infect. 2021 Dec 9;150:e2.
29. Chanakira E, O'Cathain A, Goyder EC, Freeman JV. Factors perceived to influence risky sexual behaviours among university students in the United Kingdom: a qualitative telephone interview study. BMC Public Health. 2014 Oct 9;14:1055.
30. Widman L, Choukas-Bradley S, Helms SW, Prinstein MJ. Adolescent Susceptibility to Peer Influence in Sexual Situations. J Adolesc Health. 2016;58(3):323-9.
31. Silas J. Poverty and risky sexual behaviours: Evidence from Tanzania. DHS Working Papers No. 88. Calverton, Maryland, USA: ICF International, 2013. Retrieved from
32. Ewemooje OS, Biney E, Amoateng AY. Determinants of Sexual Risk Behaviour Among Men and Women of Reproductive Age in South Africa. *Proceedings of the 2nd International Conference on Modern Research in Social Sciences, Milan, Italy on 30th October – 1st November 2019. 39-48.*
33. Amoateng AY, Ewemooje OS, Biney E. Prevalence and determinants of adolescent pregnancy among women of reproductive age in South Africa. Afr J Reprod Health. 2022;26(1):82-91.