

RESEARCH ARTICLE

Influence of household wealth status on transactional sex and condom use among Nigerian youth: A cross-sectional analysis of the 2018 Demographic and Health Survey

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Abstract

Globally, despite the increasing social and economic interventions to achieve better health behavior outcomes for the younger generation, the rising rate of engagement in risky sexual behaviors (RSBs) among young people is alarming, particularly in developing countries. This could be attributed to households' wealth conditions that contribute to poor access to sexual and reproductive health services. This study investigates the influence of household wealth status on RSBs (transactional sex and non-condom use) among unmarried youth aged 15–24 years in Nigeria. Survey data from the 2018 Nigeria Demographic and Health Survey were used to better understand RSBs among a weighted sample of 12,664 unmarried adolescents and young adults in Nigeria. Descriptive statistics were presented using frequency tables, while analytical methods included Pearson's Chi-square test and multivariate logistic analysis. The study found that individuals aged 20–24 were significantly more likely to engage in RSBs, particularly among those from households in the poorest wealth quintile (odds ratio [OR]: 1.69, 95% confidence interval [CI]: 1.04–2.76), living in communities with average poverty levels (OR: 1.34, 95% CI: 0.69–2.59), with higher education (OR: 3.22, 95% CI: 1.20–8.66), with community media access (OR: 2.04, 95% CI: 1.27–3.26), and residing in high-poverty communities (OR: 1.54, 95% CI: 0.94–2.54). To mitigate the negative effects of RSBs and their consequences, youth support initiatives should be prioritized by governments and non-governmental organizations through adaptation and mitigation strategies, particularly for those residing in low-wealth households, to discourage them from engaging in RSBs.

Keywords: Household wealth status; Risky sexual behavior; Transactional sex; Unprotected sex; Young people; Nigeria

1. Introduction

About 20% of sub-Saharan Africa's (SSA) population falls within the 15–24 age range, a critical demographic that primarily relies on others for support and plays a vital role in every society (Menon *et al.*, 2016). This age group is considered important for workforce development and marks a critical transition to independence. However, they are also vulnerable to risky sexual behaviors (RSBs), such as early sexual debut, multiple sexual partners, unprotected sexual intercourse, and unprotected mouth-to-genital contact, due to emotional instability and the influence of peer pressure (Ajayi & Okeke, 2019). These behaviors pose significant public health risks, particularly in the transmission of sexually transmitted infections (STIs), including the human immunodeficiency virus (HIV), and exposure to unwanted pregnancy (Melesse *et al.*, 2020; Menon *et al.*, 2016). The Centers for Disease Control (2022) emphasized that young people are disproportionately affected, with 21% of all new HIV diagnoses occurring among those aged 13–24. This age group also has the highest rates of STIs compared to any other age group (Dadzie *et al.*, 2022). This situation has contributed to a dramatic increase in sexually transmitted diseases among the young population, primarily caused by an increase in the burden of household socioeconomic conditions, limited availability of reproductive healthcare, including condoms, and exposure to transactional sex to meet daily needs (Ajayi & Okeke, 2019).

Evidence shows that in Nigeria, young people (15–24 years) constitute 15.6% of its total population, despite a low HIV incidence of 1.4% (Commission, 2019); however, 34.1% of all new infections in the last 2 years were among those aged 15–24 (National Agency for the Control of AIDS, 2019). In all regions of Nigeria, young people account for the largest proportion of these statistics (United Nations Department of Economic and Social Affairs, 2022). Given the high level of infectious disease, Oladunmoye *et al.* (2022) have shown that unwanted pregnancy, unsafe abortion, mental health problems, and depression among the youth are influenced by household socioeconomic status. Despite the progress toward improving youths' health outcomes in Nigeria, such as providing access to condom use, HIV testing, and awareness about healthy sexual behaviors (Bobo *et al.*, 2023), substantial disparities in access to sexual and reproductive health services persist due to perceived household wealth status (Ajayi & Okeke, 2019). In addition, various initiatives aimed at promoting condom use at the regional level in Nigeria have been recorded. One of such approaches is the Culturally Sensitive Approaches led by Alhaji Sani Umar in northern Nigeria, where condom use is low. The initiative aimed at engaging the traditional

and religious leaders to promote reproductive health and condom use, helping change attitudes in communities where contraception was previously regarded as taboo (Dirisu *et al.*, 2022).

There are undoubtedly various reasons for the low use of sexual and reproductive health services, particularly among younger individuals in Nigeria compared to older ones. One such reason is the lack of money to buy condoms, primarily due to the financial conditions of numerous Nigerian households (Dirisu *et al.*, 2022). Researchers from different fields of study have studied individual, household, and neighborhood factors, including socioeconomic causes of RSBs among young people. Such research includes the influence of family structure, community poverty, financial conditions of households, gender, ethnicity, region, mass media, place of residence, and educational attainment (Curtis *et al.*, 2020; Melesse *et al.*, 2020; Odii *et al.*, 2020; Odimegwu *et al.*, 2019; Odimegwu & Ugwu, 2022; Odimegwu & Somefun, 2017; Shittu *et al.*, 2022). Other studies included personal factors such as age, gender, and employment status (Putra *et al.*, 2021; Somefun, 2019). Sano *et al.* (2018) found that most youths are unable to practice safer sex practices due to the wealth status of many households in Nigeria (Popoola, 2020). Moreover, existing studies on the effect of household wealth status and family structure among young people have had mixed findings (Curtis *et al.*, 2020; Odii *et al.*, 2020; Odimegwu *et al.*, 2019). Increasing condom awareness, accessibility, and usage, along with support from families and reduced peer pressure, can lead to the overall well-being of young people.

On a larger scale, a study by Odimegwu & Adedini (2022) revealed that young people from poor households were at lower risk of RSBs, although this finding differed from those of other research. However, the research suggests that STI prevention, including HIV/acquired immunodeficiency syndrome (AIDS) policies in Nigeria, must consider the impact of poor household wealth status on the spread of infectious diseases among the youth population (Odimegwu & Adedini, 2022). Furthermore, studies indicate that risky sexual activity at an early age can have severe implications on a young person's physical and mental health, which increases the risk of contracting STIs, including HIV/AIDS, unsafe abortions, depression, anxiety, and other reproductive health issues (Somefun, 2019). Research also shows that early sexual debut can increase the risk of delinquent behavior, including substance abuse and criminal activity (Ajayi & Okeke, 2019). Conversely, young people who delay early sexual activity and multiple sexual engagements tend to have better reproductive health services, access to education, and contraceptive methods,

enabling them to make informed choices regarding their sexual behavior despite the economic conditions of their family (Popoola, 2020). Therefore, understanding the interplay between household economic constraints and access to reproductive health services is important for shaping policies that promote positive sexual behavior, such as access and use of contraceptive methods, to help young people achieve their reproductive desires.

Many previous studies on associated factors between household wealth status and its influence on transactional sex and condom use (Mensah, 2020; Popoola, 2020) have not adequately taken into consideration the sexual health of young people residing in poor households in Nigeria. Despite these studies, there is a need to understand the household wealth influence on transactional sex and unprotected sex (non-condom use) among young people in Nigeria. This study becomes relevant as it is geared to fill this gap. Therefore, this study aims to examine the influence of household wealth status on transactional sex and condom use among young people in Nigeria using the most recent demographic and health survey (DHS) data, providing a holistic understanding of RSB. Understanding these factors is essential for shaping effective reproductive health policies, improving access to contraceptive use, and family planning. This research also aims to ascertain if household wealth status has a significant relationship with youth dynamics of transactional sex and condom use patterns in Nigeria. Hence, the hypothesis to guide our analysis is that young people from poor household wealth status are more likely to engage in transactional sex compared to those from higher household wealth status.

1.1. Theoretical framework

The study is anchored on the social ecological model (SEM) and the family stress theory, which together provide a multilevel understanding of how household wealth status influences RSBs among young people. The two theories provide a comprehensive perspective of the interplay between household socioeconomic status and sexual behavior. The SEM posits that individual behavior is shaped by multiple interacting levels of influence, including individual, interpersonal, household/family, community, and societal factors (Bronfenbrenner, 1994; Ugwu, 2022). Within this framework, household status—captured through indicators such as socioeconomic status (income, education, occupation), family structure (single-parent vs. dual-parent households), and household living arrangements—functions as an important contextual determinant of young people's sexual behaviors. In addition, limited financial resources can restrict access to education, reproductive health services, and protective measures such as condoms and other contraceptive methods, increasing

vulnerability to risky sexual practices. The framework also suggests that young people from households with absent or less-involved parents may experience less monitoring, leading to experimentation with sex at an earlier age or engaging in multiple partnerships (Ugwu, 2022). Hence, families that encourage open discussions about sexuality tend to reduce risky behaviors, whereas silence, taboo, or conflictual environments heighten risks of sexual engagements (Shu, 2024).

On the other hand, the family stress framework emphasizes the role of economic and societal pressures in shaping the sexual behavior of individuals (Hill, 1949). The theory posits that economic and social pressures within households influence family functioning and, consequently, youth behavior (Shu, 2024). Young people with low household socioeconomic status are often exposed to family stressors such as instability, conflict, or parental absence due to labor migration (Ugwu, 2022). These conditions can undermine effective parental guidance and increase young people's susceptibility to peer pressure, substance use, or transactional sex, which are common pathways to RSBs.

Based on the SEM and family stress theoretical perspectives, this study provides a more holistic analysis of household influence on the dynamics of RSBs among young people in Nigeria. SEM explains the economic and societal determinants of sexual decisions, while the family stress framework highlights household/family stress or conflicts leading to emotional distress, which are coped with through engagement in risky sexual activities. These two theoretical perspectives offer critical insights for policymakers and reproductive health practitioners, emphasizing the importance of multifaceted interventions that address the household economic deprivation, parental absence/weak supervision, and peer dominance as factors influencing the sexual behaviors of Nigerian youths.

2. Data and methods

2.1. Data source and sample size

This study used secondary data from the 2018 Nigeria Demographic Health Survey (NDHS) conducted across all 36 states of the country and the Federal Capital Territory, Abuja. A cross-sectional quantitative design method of data collection was adopted for the survey, implying that data from the sampled population were taken at a single point in time (Commission, 2019). The NDHS is a nationally representative survey that gathers vital health and demographic data on women of reproductive age (15–49 years) and men aged 15–59 years. The 2018 NDHS used a nationally representative, randomly selected sample of 42,000 households. A two-stage stratified cluster

sampling design was used to select the survey respondents, and they were located at the primary sampling units referred to as enumeration areas (EAs). Other reports have provided comprehensive details on the sampling plan and data collection techniques (Melesse *et al.*, 2020; Odimegwu *et al.*, 2019; Putra *et al.*, 2021). The target population for the study was adolescents and young adults aged 15–24 years. A total of 12,664 (females: 3,778 and males: 8,886) samples were extracted from the subsets of data contained in the 2018 NDHS, as shown in Figure 1.

2.2. Measurements

2.2.1. Outcome variables

The outcome variables in this study were transactional sex and non-condom use (unprotected sex) among adolescents and young adults aged 15–24. Transactional sex was measured from the DHS question: “Have you had sex or been sexually involved with anyone because he gave you or told you he would give you gifts, cash, or anything else in the past 12 months?” Responses were subsequently categorized as “Yes” or “No” to indicate whether the individual had engaged in transactional sex (exchanging sex for money, gifts, or other forms of compensation). Previous studies have shown that one factor that continues to contribute to the rising rate of STIs is transactional sex (sex trade), especially among the youth (Adu *et al.*, 2022; Ugwu *et al.*, 2022). This behavior is linked to serious health risks and is believed to be brought on by an unequal power dynamic in romantic relationships, especially when the individual is not economically viable. Non-condom use, that is, unprotected sex without a condom in their last sexual intercourse, was evaluated through the question, “Did you use a condom during your last sex with your most recent partner?” The unprotected sex variable was coded “1” if youths reported not using condoms, and otherwise,

“0.” The 12-month reference period helped capture the most recent behaviors and minimize recall errors. The interest in non-condom use was because it constitutes the key pathway through which young people can contract STIs and HIV infections, both of which continue to spread sporadically (Odimegwu & Ugwu, 2022).

2.2.2. Explanatory variables

The key primary explanatory variable for this study was perceived household wealth status. Previous studies have suggested four important dimensions of individual empowerment to access sexual and reproductive health services, particularly in developing countries, such as the household wealth level (Oladunmoye *et al.*, 2022; Popoola, 2020). We considered the household dimensions of empowerment in this study and identified several economic variables, including the respondent’s occupation, earnings from work, wealth status, and the seasonality of the occupation. In this study, we considered the household wealth quintile, which the DHS used to measure household wealth status. The DHS questions about household wealth status were not restricted to any category of individuals. Therefore, the analysis incorporated youths aged 15–24. For classification, adolescents and young adults were categorized as living in a “wealthy household” if they resided in households within the richest wealth quintile. Conversely, respondents were classified as living in a “poor household” if they belonged to the lowest wealth quintile. Thus, perceived household wealth status was measured as the percentage of adolescents and young adults from households in the wealthiest or poorest wealth quintile (Decker *et al.*, 2021). Apart from the key explanatory variable, the following co-variables were included in the analysis: age of adolescents and young adults, educational attainment, place of residence, community media access, community poverty level, sex of the head of household, and community education level. In addition, certain variables were regrouped from their original categories in the datasets to make interpretations simpler and more meaningful. For instance, age was grouped as 15–19/20–24 years, while educational attainment was categorized as lower than primary/secondary or higher education. The selection of key explanatory variables and covariates was based on previous research showing their significant links to RSBs and other health outcomes (Enane *et al.*, 2018; Odimegwu & Ugwu, 2022).

2.3. Statistical analysis

This study’s statistical analysis utilized STATA version 17, employing a 5% significance level. Descriptive analysis presented frequencies and percentages of adolescents’ and young adults’ background characteristics. Cross-tabulations between RSBs and both individual-level and community-level characteristics, using Chi-square tests,

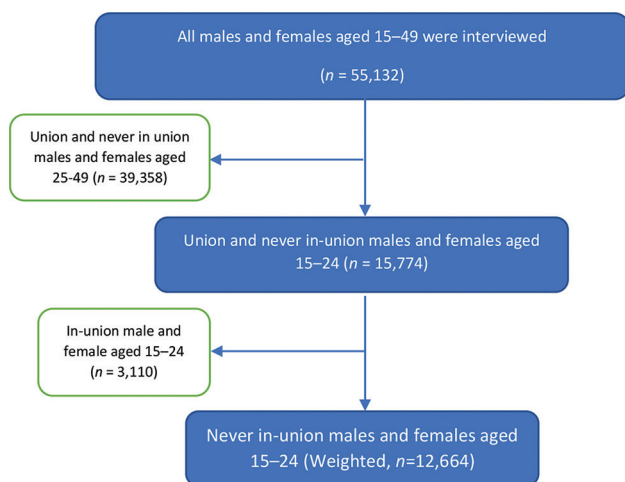


Figure 1. Procedure for sample selection

were employed to examine associations between outcomes and individual-level variables. Multivariable binary logistic regression modeled the effects of key explanatory variables and individual-level characteristics on transactional sex and condom use in NDHS data, reporting adjusted odds ratios (OR) with 95% confidence intervals (CI). Covariates with p -values ≤ 0.2 in bivariate analysis were included in the multivariable model.

2.4. Ethical clearance

This study's data are publicly available on the DHS Programme website (<https://www.dhsprogram.com>) and were used with permission from the Integrated Public Use Microdata Series and DHS. The data are anonymous, with no identifiable respondent information. The DHS survey and biomarker protocols for each country were approved by local ethics review boards, ensuring compliance with relevant guidelines and regulations. Participants over 18 provided informed consent, while those under 18 required parental or guardian consent and assent from the minors themselves.

3. Results

3.1. Characteristics of the study population

Table 1 provides the distribution of the study samples analyzed. A total of 8,886 respondents were males, with 73.8% aged 15–19 and 26.2% aged 20–24. Among them, 19.6% had primary or lower education, the majority (71%) had attained secondary education, and only 9.4% had higher education. For the perceived household wealth status, most male respondents were from poor households (50.5%). Slightly over 30% of the male respondents were from communities with varying levels of educational attainment (low, average, and high). In addition, male respondents from male-headed households (74.9%) outnumbered those from female-headed households (25%).

For the female respondents, Table 1 shows that out of 3,778 female respondents, 65.2% aged 15–19, while 34.8% aged 20–24. Most of them (64.6%) had secondary education, while 27.5% had primary or lower education, and less than 10% had attained a higher education. For perceived household wealth status, most female respondents were from poor households (61.9%), while < 40% were from wealthy households. Moreover, female respondents from male-headed households (84.7%) outnumbered those from female-headed households.

3.2. Bivariate analysis of sociodemographic characteristics, community-level factors, and RSBs

Table 2 shows the bivariate analysis of the association between having unprotected sex and the sociodemographic

Table 1. Characteristics of the study population

Characteristics	Males, N=8,886 (%)	Females, N=3,778 (%)
Age		
15–19	73.79	65.22
20–24	26.21	34.78
Educational attainment		
Primary and lower	19.63	27.47
Secondary	71.01	64.58
Higher	9.36	8.94
Household wealth status		
Wealthy households	49.45	38.14
Poor households	50.55	61.86
Place of residence		
Urban	49.72	40.55
Rural	50.28	59.55
Community media access		
No	71.87	72.37
Yes	28.13	27.98
Community poverty level		
Low	36.21	27.16
Average	34.99	31.21
High	28.80	41.64
Community education level		
Low	33.58	43.99
Average	32.94	28.53
High	33.48	27.47
Sex of head of household		
Male	74.95	84.73
Female	25.05	15.27

characteristics of the respondents. The results revealed that all the explanatory variables were significantly associated with having unprotected sex, except for the sex of the head of the household. A total of 46% of young adults aged between 20 and 24 engaged more in unprotected sex compared to 37% of adolescents (15–19 years). Adolescents/young adults who have attained higher education (53%) had higher tendencies to engage in unprotected sex than those with secondary (42.23%) and primary/lower education (28.21%). In the case of perceived household wealth status, adolescents/young adults from poor households (35.51%) engaged more in protected sex than those from wealthy households (48.54%). In addition, adolescents/young adults from rural areas (40.37%) engaged slightly less in unprotected sex than their counterparts residing in urban areas (45.05%). Adolescents/young adults with access to community media had a very high tendency to engage more in unprotected sex than those without. High

community poverty (31.24%) was associated with lower engagement in unprotected sex than the communities with average (42.56%) and low (49.25%) levels of poverty. Adolescents/young adults from communities with average levels of education (46.29%) had slightly more unprotected sex than those from communities with high (41.29%) and low levels of education (40.3%). The results further revealed that, among other variables, only educational attainment was significantly associated with transactional sex. That is, adolescents/young adults with primary education and

less education (23.78%) engage more in transactional sex than those with secondary education (15.92%) and higher education (11.69%).

Table 2. Bivariate analysis of risky sexual behaviors, sociodemographic characteristics, and community-level factors

Characteristics	Risky sexual behavior	
	Transactional sex (%)	Unprotected sex (%)
Age		
15–19	16.59*	37.14***
20–24	15.64*	46.53***
Educational attainment		
Primary/lower education	23.78***	28.21***
Secondary	15.92***	42.23***
Higher	11.69***	53.33***
Household wealth status		
Wealthy households	15.84	48.54***
Poor households	16.26	35.51***
Place of residence		
Urban	16.38	45.05**
Rural	15.72	40.37**
Community media access		
No	15.54	38.31***
Yes	16.87	50.11***
Community poverty level		
Low	15.28	49.25***
Average	16.79	42.56 ***
High	16.23	31.24***
Sex of head of household		
Male	15.89	42.55
Female	16.32	42.56
Community education level		
Low	13.62*	40.31**
Average	16.44*	46.29**
High	17.37*	41.29**

Note: Statistical significance determined at * $P < 0.05$, ** $P < 0.01$, and *** $P < 0.001$.

3.3. Multivariable analysis of RSBs

Table 3 presents the binary logistic regression of the independent and outcome variables. The purpose of this study was to investigate the effect of each independent variable on the outcome variable. However, the results in Table 3 show that none of the independent variables were significantly associated with unprotected sex, although variations in the ORs indicated both increased and decreased likelihoods. Male respondents, aged 20–24, had an increased odds of engaging in unprotected sex (OR = 1.57) compared with the male youths aged 15–19. In addition, adolescent males with higher education had an increased odds of engaging in unprotected sex compared to their peers with secondary and primary/lower

Table 3. Multivariable analysis of risky sexual behavior

Characteristics	Unprotected sex odds ratio		Transactional sex odds ratio	
	Male	Female	Male	Female
Age				
15–19	Ref.	Ref.	Ref.	Ref.
20–24	1.57*	1.69*	0.98*	1.70*
Education				
Primary/lower	Ref.	Ref.	Ref.	Ref.
Secondary	2.63*	2.43*	1.38*	2.43*
Higher	3.91*	3.22*	2.18*	3.22*
Place of residence				
Urban	Ref.	Ref.	Ref.	Ref.
Rural	1.08*	0.94*	0.88	0.94
Community media exposure				
No	Ref.	Ref.	Ref.	Ref.
Yes	1.32*	2.04*	1.21	2.04
Head of the household				
Male	Ref.	Ref.	Ref.	Ref.
Female	1.14	0.80	1.29	0.80
Community poverty level				
Low	Ref.	Ref.	Ref.	Ref.
Average	0.86	1.34	1.54	0.57
High	0.58	0.69	1.54	0.69
Community education level				
Low	Ref.	Ref.	Ref.	Ref.
Average	0.80*	1.34*	0.95*	1.30*
High	0.75*	0.76	0.90*	0.76

Note: Statistical significance determined at * $p < 0.05$.

education (OR = 3.22). Male adolescents/young adults from female-headed homes had an increased odds of engaging in unprotected sex (OR = 1.14) compared to those in male-headed households. Meanwhile, adolescent boys in average and high-poverty communities had a lower odds of engaging in unprotected sex compared to their counterparts in average (OR = 0.86) and low (OR = 0.58) poverty communities. For the female respondents, females aged 20–24 had an increased odds of engaging in unprotected sex (OR = 1.69) compared with the female youths aged 15–19. Furthermore, adolescent females with higher education had an increased odds of engaging in unprotected sex compared to their peers with secondary and primary or less education (OR = 3.91). Adolescent girls from female-headed homes had a lower odds of engaging in unprotected sex (OR = 0.8) compared with those in male-headed households. Adolescent girls in communities with average poverty had a higher odds of engaging in unprotected sex compared to their peers in low- and high-poverty communities (OR = 1.34). Adolescent girls in communities with average education had an increased odds of engaging in unprotected sex compared to their peers from communities with low and high levels of education (OR = 1.34).

In addition, Table 3 further shows that none of the independent variables were significantly associated with transactional sex, although variations in the ORs indicated both increased and decreased likelihoods. Male respondents, aged 20–24, had an increased odds of engaging in transactional sex (OR = 0.98) compared with the male youths aged 15 to 19. In addition, adolescent males with higher education had an increased odds of engaging in transactional sex compared to their peers with secondary and primary/lower education (OR = 2.18). Conversely, adolescent boys in rural areas had a lower odds of engaging in transactional sex compared to their counterparts in urban areas (OR = 0.88). Media exposure was found to increase the odds of male respondents engaging in transactional sex (OR = 1.21). Adolescent boys from female-headed homes had an increased odds (OR = 1.29) of engaging in transactional sex compared to those in male-headed homes. Meanwhile, adolescent boys in average and high-poverty communities had a higher odds of engaging in transactional sex compared to their counterparts in average (OR = 1.54) and low-poverty communities (OR = 1.54). For the female respondents, females aged 20–24 had an increased odds of engaging in transactional sex (OR = 1.70) compared to the female youths aged 15 to 19. In addition, adolescent/young adult females in higher education had an increased odds of engaging in transactional sex compared to their peers in secondary and primary/lower education (OR = 3.22).

Conversely, adolescent girls in rural areas had a lower odds of engaging in transactional sex compared to their counterparts in urban areas (OR = 0.94), while media exposure was found to increase the odds of female respondents engaging in transactional sex (OR = 2.04). Adolescent girls from female-headed homes had a lower odds (OR = 0.8) of engaging in transactional sex compared to girls in male-headed homes. In addition, adolescent girls in communities with average poverty had a lower odds of engaging in transactional sex compared to their peers in low- and high-poverty communities (OR = 0.57). Moreover, adolescent girls in communities with average education had an increased odds of engaging in unprotected sex compared with their peers in communities with low and high levels of education (OR = 1.30).

4. Discussion

The objective of this study was to examine the influence of household wealth status on transactional sex and condom use among young people in Nigeria. Specifically, the aim was to investigate the determinants of RSBs (transactional sex and condom use [unprotected sex]) among adolescents and young adults in Nigeria with a special focus on the role of household wealth status. In line with previous studies in SSA, the results established that young people living in the poorest households and those residing in urban areas engage in unprotected sex and transactional sex (Ajayi & Okeke, 2019; Dana *et al.*, 2019; Odimegwu & Ugwu, 2022; Odimegwu & Somefun, 2017). These findings show that RSBs have been consistently high among young people due to household constraints. This finding is consistent with a prior study conducted by Decker *et al.* (2021), which demonstrates that youths from poor households are generally exposed to RSBs, which increases the possibility of contracting STIs, including HIV/AIDS (Decker *et al.*, 2021). However, this result is in disagreement with the findings of Odii *et al.* (2020) and Ssewanyana *et al.* (2020), whose studies identified a lack of comprehensive information on sex education and contraceptive knowledge among young people as a cause of RSBs. Hence, the findings reiterate the need for government and policymakers to commit to creating awareness about abstinence as a significant intervention program that supports young people to have adequate knowledge about the use of reproductive health services, particularly in Nigeria.

Across genders, the results revealed that about two-thirds (65.8%) of the study population over 20 years old had engaged in RSB. In addition, the bivariate results showed that all the independent variables, including living in a high-poverty neighborhood and high educational attainment, were significantly associated with unprotected sex across gender. The results showed that living in a

high-poverty neighborhood in Nigeria was seen as a risk factor for young people to engage in RSB. This finding is not surprising because prior studies have shown that young people living in high-level poverty communities are more exposed to the negative effects of sexual behavior (Somefun, 2019). This exposure is mainly caused by a lack of access to social media platforms, such as mobile phones and the internet, which are needed to obtain information about the impacts of RSB, despite the living conditions of their households. These results have some policy implications in line with Sustainable Development Goal 3, aimed at attaining universal access to affordable, reliable, sustainable healthcare, as well as reducing the epidemic of AIDS, tuberculosis, malaria, and other non-communicable diseases among adolescents and young adults in Nigeria. Interventions aimed at improving the health outcomes of young people, including a reduction in the rate of HIV/AIDS, and other infectious diseases such as tuberculosis and malaria, should consider the role of households' wealth status where adolescents and young adults reside.

Furthermore, the findings from the multivariate regression analyses revealed that the likelihood of engaging in RSB among young people was significantly higher for female adolescents and young adults aged 20–24 than for their counterparts aged 15–20, by a factor of 1.7. These findings corroborate those of previous studies, which found that an increase in age among youths is negatively associated with youth health and well-being (Odimegwu & Ugwu, 2022; Somefun, 2019; Stiglic & Viner, 2019). Furthermore, it reiterates the importance of other studies showing that older youth without economic viability and from poor households are more vulnerable to RSBs (Anyanwu *et al.*, 2020; Dirisu *et al.*, 2022; Tende, 2020). The findings could be explained by the possibility that low-income households contribute to a lack of access to housing, food, and healthcare, as well as to school dropouts, unemployment due to a lack of education, and inadequate oversight and monitoring of youth activities. This validates previous studies, which found that most youth deaths are linked to exposure to infectious diseases such as STIs, including HIV/AIDS, and this is closely associated with household socioeconomic factors, including a lack of access to social safety nets provided by the government to access sexual reproductive health services (Folayan *et al.*, 2022; Nzoputam *et al.*, 2022).

After adjusting for all the selected sociodemographic factors, age, place of residence, higher education, community poverty level, and community media access were found to be significantly associated with the risk of transactional sex. For instance, having primary/lower or secondary education attainment significantly reduced the odds of

engaging in transactional sex, as validated by previous studies (Ajayi & Okeke, 2019; Anyanwu *et al.*, 2020; Tende, 2020). In addition, living in urban areas has previously been shown to cause a greater risk of transactional sex among youths (Ajayi & Okeke, 2019). Plausibly, engaging in transactional sex could be determined by the perceived level of household wealth where adolescents and young adults reside. Hence, the community level of education contributes to youths' engagement in transactional sex, possibly through the lack of proper dissemination of information concerning the harmful effects of engaging in RSBs. These findings suggest that community-based initiatives can play a vital role in empowering youth with accurate information and skills to make informed decisions about their sexual and reproductive health, both in school and out-of-school settings. In addition, there is a need to strengthen parent–child communication on sexual and reproductive health issues to promote healthy sexual behaviors. Thus, support structures such as social promotion centers and youth centers are needed to sustain information on sexual and reproductive health for young people. The findings further highlight the need to engage communities, religious leaders, and parents in promoting and organizing awareness campaigns and conference debates on sexual and reproductive health problems to educate young people in Nigeria.

Furthermore, findings on the influence of age, educational attainment, female household head, and average neighborhood poverty level on the risk of unprotected sex were as expected. Female-headed households in Nigeria, particularly those from poor backgrounds, may increase young women's vulnerability to high-risk sexual behavior, thereby raising their risk of HIV infection and negatively impacting their long-term health outcomes. This has policy implications, as there is a need for more pragmatic strategies to eradicate infectious diseases among adolescents and young adults in both rural and metropolitan areas. In addition, achieving universal access to affordable, reliable, and sustainable healthcare, along with improved household wealth, is essential to enhancing adolescent and young adult health outcomes in Nigeria. Previous studies have indicated that the place of residence (urban or metropolitan areas) determines the likelihood of unprotected sex among young people in Nigeria (Ajayi & Okeke, 2019; Folayan *et al.*, 2022; Odimegwu & Ugwu, 2022; Odimegwu & Somefun, 2017). There were variations in the risk of unprotected sex across community education levels in Nigeria, with youths from moderately educated communities showing higher exposure to unprotected sex, likely due to insufficient knowledge of contraceptive use and inadequate sex education. The rates of unprotected sex in less educated

communities (Ajayi & Okeke, 2019; Odimegwu & Ugwu, 2022) were higher among youths residing in communities without access to education (Envuladu *et al.*, 2021; Ugwu *et al.*, 2022). This is an indication that youths from poor households are more likely to engage in unprotected sex, which may contribute to the higher risk observed among youths from less and moderately educated communities compared with those from highly educated communities in Nigeria.

This study leverages the SEM and the family stress theory to provide a nuanced understanding of the complex interplay between household socioeconomic status and RSBs among young people in Nigeria. By integrating these frameworks, we gain a deeper insight into the multifaceted determinants of RSBs, including individual, social, environmental, and household factors. The SEM highlights the intricate relationships between individual, social, and environmental drivers, while the family stress theory sheds light on how household socioeconomic stressors, such as poverty and financial instability, can shape young people's behaviors. This integrated approach offers critical implications for policymakers and health practitioners, emphasizing the need for comprehensive interventions that address the socioeconomic, individual, household, and environmental factors influencing RSBs.

By considering individual, household, and community factors, these theories provide a holistic understanding of the decisions surrounding RSBs. This study's findings can inform existing sexual and reproductive health interventions aimed at reducing RSBs among young people in Nigeria. However, developing targeted interventions requires a more comprehensive approach. A multilevel analysis that accounts for individual, household, and community-level factors is essential to unravel the complex factors contributing to RSBs among young people in Nigeria. This approach can inform evidence-based interventions and policy decisions, ultimately enhancing the effectiveness of sexual and reproductive health programs.

4.1. Policy implications of the findings

This study has some policy implications for young people in SSA, particularly in Nigeria. The results show that older youth and those living in poor resource households are more likely to engage in RSBs such as transactional sex and unprotected sex, underscoring the importance of promoting positive sexual behavior. The Nigerian government has implemented several health policy initiatives to address RSBs among young people. These initiatives aim to improve access, inclusivity, and equity in service delivery nationwide, focusing on adolescent-friendly services

and comprehensive sexual and reproductive health education, particularly for young people with financial constraints. Therefore, efforts should be made to increase access to health insurance, which will reduce household financial barriers to healthcare services across Nigeria. Collaborating with the state and local government councils will further help to provide free and affordable sexual and reproductive services in a safe, confidential environment, in partnership with organizations like The Youth Development and Empowerment Initiative. This is because such interventions have the potential to educate young people on sexual and reproductive health, HIV, and STI prevention. Furthermore, a government-initiated program will help young people achieve sexual and reproductive health autonomy, helping them to make informed choices about their sexual behaviors.

4.2. Strengths and limitations

In this study, cause-and-effect relationships could not be established because of the application of cross-sectional DHS data, and the only independent variable was temporal factors connected to adolescent and young adult sexual behaviors. In addition, there was a chance of reporting bias on the primary explanatory variable (perceived household wealth status) used in the study, as it was self-reported data. Another limitation is that, although the data were the most recent available to researchers, they were from the 2018 NDHS, which is 7 years old. This data may not provide the current problems among the Nigerian youths. Despite these drawbacks, the results of this study are crucial for shaping current strategies and initiatives aimed at reducing youth involvement in RSBs. This can be achieved by providing them with all the financial support needed to enhance their health outcomes, thereby improving the wealth status of the households where they reside. In addition, it is imperative to ensure that the youth in Nigeria have access to cheap, dependable, and sustainable health care services. It is suggested that further research involve qualitative studies in different parts of the country to further investigate the health risks associated with RSBs for youths in Nigeria.

5. Conclusions

This study established that young people from poorer households are likely to engage in transactional and unprotected sex in Nigeria. The results can inform policies and interventions aimed at reducing RSBs and promoting reproductive health among vulnerable populations. In addition, educational attainment, place of residence, community media access, community poverty level, female as the household head, and community education level were significantly associated with the risk of transactional

sex and non-condom use. Thus, there is a need to sensitize and support young people, particularly those from poor households in Nigeria. To lessen the negative effects of RSBs and their consequences, government and non-governmental organizations should implement adaptation and mitigation strategies to empower youth from poor households and discourage them from engaging in transactional sex and non-condom use.

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Conflict of interest

The authors declare that they have no competing interests.

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Ethics approval and consent to participate

Ethics approval was not required for this study because the data are secondary and available in the public domain. To conduct our study, we registered and requested the dataset from the DHS online archive, receiving approval to access and download the data files. According to the DHS report, all respondents' data were anonymized during the data collection.

Consent for publication

Not applicable.

Availability of data

The data utilized in this study can be accessed publicly through the IPUMS DHS or DHS Program websites: <https://www.idhsdata.org/idhs/>, <https://dhsprogram.com/>.

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