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Factors associated with protective sexual behaviours among unmarried young people in Nigeria: A cross-sectional analysis

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Abstract

The risk of contracting sexually transmitted infections is associated with young adulthood that practice experimental behaviour, including the non-use of condoms during sexual intercourse with partners. There is a paucity of studies on the factors influencing sexual behaviours among young people, with a focus on gender disaggregation and condom use using 5 years interval analysis. This study examined factors associated with positive sexual behaviours among unmarried young people in Nigeria. The data for this study was derived from the 2018 Nigeria Demographic and Health Survey data and comprised a weighted sample drawn from 2,458 females and 762 males aged 15-24 years giving a total of 3,220 never married and sexually active young people. Data were analysed using descriptive and analytical methods, including multivariate binary logistic regression. The results showed that 64.5% and 36.6% of young males and females engaged in protective sexual behaviours. The likelihood of engaging in protective sexual behaviours significantly increased among males who reported a history of residential instability (OR: 2.06, CI: 1.18-3.58) and females who had knowledge of STIs (aOR: 2.54, CI: 1.10-5.83). In addition, an increase in the educational attainment and household's wealth quintile was positively associated with engaging in protective sexual behaviours among female and male young people with regional variations. This study found that most male young people engaged in protective sexual behaviours compared with their female counterparts. Being knowledgeable of STIs and having a history of residential instability are positively associated with protective sexual behaviour with gender variations. There is the need for more region-wide educational and empowerment programmes on sexual and reproductive health to ensure universal access to sexual and reproductive healthcare services in Nigeria.

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Introduction

The youths constitute nearly half of the global population and their sexual behaviours determine the risk of contracting sexually transmitted infections (STIs), including human immunodeficiency virus (HIV). Consequently, the spread of STIs has become a serious health care problem in many sub-Saharan African countries (Maina, Kimani & Anzala, 2016; Mudau *et al.,* 2018). This largely depends on the young people's knowledge of risks and behaviours towards contracting STIs (Tarkang, Van der Wal, & Ehlers, 2011). Studies on risky sexual behaviours have focused on adolescents and youth sexual behaviours and other determinants (Blignaut, Jacobs & Vergnani, 2015; Okafor & Obi, 2005). The period of young adulthood represents a demanding stage in the lives of individuals and is characterised by experimental behaviours that could threaten their long term health and wellbeing (Sawyer, Azzopardi, Wickremarathne & Patton, 2018). Engaging in protective sexual behaviours which includes consistency of condom use during sexual intercourse is targeted at preventing STIs, as well as unplanned pregnancies among sexually active or inactive individuals, especially young adults (Ajayi & Okeke, 2019). However, young people in Nigeria are at high risk and more vulnerable group for poor SRH outcomes such as early and unplanned pregnancy, unsafe abortion, and STIs, including HIV (Adedini, Mobolaji, Alabi & Fatusi, 2021).

In sub-Saharan Africa which Nigeria is part of, young women aged 15–24 years are twice more likely to be living with HIV than men. Also, around 4200 adolescent girls and young women aged 15–24 years became infected with HIV every week in 2020 (UNAIDS, 2021). Precisely, Nigeria has one of the highest burdens of HIV in the world and young people aged 15–24 years are disproportionately affected by the infection, and contribute about a third of all the country's new HIV infections (Nwaozuru et al., 2019; UNAIDS, 2021). Therefore, knowledge of how STIs are contracted is crucial in enabling people, especially young adults to avoid contracting such infections. This becomes imperative since they are often at greater risk because of their exposure to having shorter relationships with more partners or engaging in other risky behaviours. Also, considering the fact that about 40% and 34% of young women and men, respectively reported having comprehensive knowledge of HIV (NPC & ICF International, 2019).
Irrespective of several sexual and reproductive health (SRH) policy and programmes interventions initiated by both government and non-governmental agencies over the last two decades to ensure service continuity towards encouraging condom use in Nigeria, sixty-two percent of young women and 38% of young men did not use a condom during their last sex with a non-marital or non-cohabiting partner and this is higher in rural than urban areas (NPC and ICF International, 2019). The low rates of condom use among young people in Nigeria have been reported by previous studies (Ajayi, Ismail & Akpan, 2019; Sunmola, 2001).

Previous studies have shown the relationship between sexual behaviours and socio-economic and demographic factors (Adedini, Mobolaji, Alabi & Fatusi, 2021; Amoyaw & Luginaah, 2017; Folayan, Adebayo, Adeyemi & Ogungbemi, 2015; Odimegwu, Imo & Amoo, 2020). In Nigeria, most studies on adolescents and youth sexual behaviours have focused on risky sexual behaviours, and factors influencing such behaviours (Okafor & Obi, 2005; Okeke & Odelola, 2018). A few studies on sexual behavioural change among young adults have concentrated on Nigerian universities (Ajayi & Okeke, 2019) and used 2013 NDHS (Odimegwu, Imo & Amoo, 2020). However, there is a paucity of studies in the literature examining factors influencing protective sexual behaviours among never married and sexually active young people in Nigeria, with a focus on gender disaggregation regarding knowledge of STIs, residential instability, sex of household head among others. Appraising protective sexual behaviours, especially the consistency of condom use during sexual intercourse among never married and sexually active young people using the latest Nigeria Demographic and Health Survey (NDHS) data is crucial for policy interventions towards achieving the sustainable development goal target of ensuring universal access to sexual and reproductive healthcare services. This study, therefore, examined factors associated with protective sexual behaviours among unmarried young people in Nigeria.

Theoretical framework

Health Belief Model

For this study, the Health Belief Model was adopted as a theoretical framework to enable us to understand how people mostly take preventative actions if they perceive the serious threat of a health, if they feel they are personally prone and if there are fewer costs than benefits to engaging in it (Glanz & Bishop, 2010).

Therefore, individuals' behaviour change interventions are more effective if they address their specific perceptions about susceptibility, benefits, barriers, and self-efficacy. In addition, a person's willingness to change his/her health behaviour is related to the person's belief about health conditions.

Data and methods

The data for this study was obtained from the data file of the 2018 Nigeria Demographic and Health Survey (NDHS). The survey is a cross-sectional study and data were generated from 41,821 women aged 15-49 and 13,311 men aged 15-59. A detailed report of the data collection methods and procedures for 2018 NDHS has been published elsewhere (NPC & ICF International, 2019). This study covered a weighted sample of 3,220 never-married and sexually active young people (females - 2,458 and males - 762). The analysis was based on the definition of 'young people' as those aged 15-24 years and the term is used interchangeably with 'adolescents' and 'youth' (UNAIDS, 2016). Also, the sexually active were the young men and women who reported to have ever engaged in sexual intercourse. The essence of this operational definition was to identify the maximum number of young men and women who had experienced sexual encounters.

The outcome/dependent variable for this study was 'protective sexual behaviour' which was derived from respondents' responses to the question on condom use during the last sex with most recent partners (Ajayi & Okeke, 2019). The sexually active respondents were asked: did you use a condom during the last sex with most recent partners or second to most recent partner or third to most recent partner? Respondents who indicated using a condom during last sexual intercourse with their last three sexual partners were classified as engaging in 'safer sexual behaviours' – coded as 1, otherwise classified as having 'risky sexual behaviours' – coded as 0. The focus on condom use was made with references to 5 years before the 2018 NDHS because to protect sexually active and never married youths from contracting STIs, including HIV infection, a condom must be used for every round of sex.

The main explanatory variables included were (1) knowledge of sexually transmitted infections, which was derived from the respondents' responses to the question – ever heard of a sexually transmitted infection? (2) Residential instability: defined as a person who had moved from another dwelling during the previous 5 years (Warner & Pierce 1993). (3) Sex of household head expressed as percentages of households headed by a male or female in an area. Other explanatory variables included in the analysis were the respondents' age, educational attainment, work status, wealth quintile, place of residence and region. To make interpretation simpler and more meaningful, some variables were regrouped from their original categories in the datasets. For instance, the educational attainment: no education/primary/secondary or tertiary; and wealth quintile: lowest/middle/highest. The selection of the explanatory variables was based on empirical evidence on how they influence sexual behaviour and other aspects of an individual's life.

The data for this study were analysed at three levels (univariate, bivariate and multivariate). At the univariate level, descriptive statistics related to the characteristics of the study population, knowledge of STIs and condom use during the last sex with most recent partners were generated through percentage distribution. Pearson chi-square test was used at the bivariate level to assess the association between each of the explanatory variables and the outcome variable. In the multivariable analysis, binary logistic regression analysis was adopted to measure the effect of the selected explanatory variables on the outcome variable by controlling for potential effects. Two logistic regression models (Models 1 and 2) were fitted to assess the relationship between the explanatory variables and outcome variable. Model 1 presented the unadjusted logistic regression analysis for all the explanatory variables, while Model 2 adjusted for the significant explanatory variable in Model 1 to assess the simultaneous influence of the selected variables on protective sexual behaviour. Measures of association between the outcome variable and explanatory variables were expressed as OR with 95% confidence intervals (CIs). A variable with OR greater than 1.00 implied that the variable increases the likelihood of the outcome, while it is the opposite when the OR is less than 1.00. All the analyses excluded missing responses and were conducted using Stata software (version 15.1). Svy command in Stata was used to adjust for the complex survey design of the Demographic and Health Survey (DHS) data.

Results

Distribution of the variables of the study population sample

The descriptive statistics of respondents as presented in Table 1 showed that out of the selected sample, larger proportions of females and males were aged 15-19 years (55.7% and 65.5%, respectively). Also, an overwhelming majority of females and males had secondary or tertiary education (88.8% and 89.7%, respectively). More males (70.1%) than females (57.2%) were employed. Over one-half of both females and males were found in the middle wealth quintile households and resided in rural areas. With respect to the region of residence, the largest proportions of females and males were found in the South-south region (24.0% and 26.8%, respectively). The results further showed that knowledge of STIs was interestingly high among female and male young people with no significant difference (97.2% and 98.9%, respectively). Slightly more females (23.2%) than males (13.4%) young people reported having a history of residential instability. Also, most of the young people (males - 78.9% and females - 63.5%) were found in male-headed households. Overall, 64.5% of male young people engaged in protective sexual behaviour, compared with their female counterparts (36.6%).

Table 1: Distribution of the sample characteristics by gender, NDHS 2018

Variable/category	Female *N (%)*	Male *N (%)*
Age group		
15-19	1,089(44.3)	263(34.5)
20-24	1,369(55.7)	499(65.5)
Educational attainment		
No education	94(3.8)	37(4.9)
Primary	182(7.4)	41(5.4)
Secondary/tertiary	2,182(88.8)	684(89.7)
Employment status		
Not working	1,052(42.8)	228(29.9)
Currently working	1,406(57.2)	534(70.1)
Wealth quintile		
Lowest	560(22.8)	170(22.3)
Middle	1,313(53.4)	407(53.4)
Highest	585(23.8)	185(24.3)
Place of residence		
Urban	1,183(48.1)	348(45.7)
Rural	1,275(51.9)	414(54.3)
Region		
North-central	579(23.6)	135(17.7)
North-east	265(10.8)	98(12.9)
North-west	63(2.6)	34(4.5)
South-east	492(20.0)	145(19.0)
South-south	590(24.0)	204(26.8)
South-west	469(19.1)	146(19.2)
Knowledge of STIs		
No	69(2.8)	8(1.1)
Yes	2,389(97.2)	754(98.9)
Residential instability		
No	1,887(76.8)	660(86.6)
Yes	571(23.2)	102(13.4)
Sex of household head		
Male	1,561(63.5)	601(78.9)
Female	897(36.5)	161(21.1)
Sexual behaviour		
Risky sexual behaviour	1,230(63.4)	223(35.5)
Safer sexual behaviour	709(36.6)	405(64.5)

Factors associated with protective sexual behaviours

The bivariate relationship between protective sexual behaviour and explanatory variables is presented in Table 3. The results showed some significant variations among female and male young people. For instance, a high proportion of protective sexual behaviour was found among females who had knowledge of STIs (38.6%; $p<0.001$). A similar result was observed among male young people who had a history of residential instability (77.5%; $p<0.001$). The results further showed that the proportion of protective sexual behaviours was significantly high among older females and males aged 20-24 years (41.8%; $p<0.001$ and 69.1%; $p<0.01$, respectively). Also, this was observed among females and males who had secondary or tertiary education (39.4%; $p<0.01$ and 67.7%; $p<0.001$, respectively) and found in the highest wealth quintile

households (47.2%; $p<0.001$ and 77.4%; $p<0.001$, respectively). The proportion of protective sexual behaviours was high among urban male young people (70.1%; $p<0.01$). Engaging in protective sexual behaviours was significantly high among females living in the North-west region (56.0%; $p<0.01$) and males in the South-east region (76.0%; $p<0.001$).

Table 2: Bivariate analysis of factors associated with protective sexual behaviours of young people, 2018 NDHS

	Protective sexual behaviours					
	Female			Male		
	Risky	Safer		Risky	Safer	
	N=1,201	*N*=738		*N*=223	*N*=405	
Variable/category	*n* (%)	*n* (%)	χ^2	*n* (%)	*n* (%)	χ^2
Knowledge of STIs			9.371**			0.437
No	37(84.1)	7(15.9)		4(50.0)	4(50.0)	
Yes	1,164(61.4)	731(38.6)		219(35.3)	401(64.7)	
Residential instability			3.700			6.776**
No	936(63.1)	547(36.9)		205(37.4)	343(62.6)	
Yes	265(58.1)	191(41.9)		18(22.5)	62(77.5)	
Sex of household head			2.460			1.138
Male	778(63.3)	452(36.7)		181(36.6)	314(63.4)	
Female	421(59.7)	286(40.3)		42(31.6)	91(68.4)	
Age group			14.408***			11.035**
15-19	568(66.7)	284(33.3)		96(44.2)	121(55.8)	
20-24	633(58.2)	454(41.8)		127(30.9)	284(69.1)	
Educational attainment			14.631**			27.799***
No education	54(80.6)	13(19.4)		22(75.9)	7(24.1)	
Primary	98(69.5)	43(30.5)		19(52.8)	17(47.2)	
Secondary/tertiary	1,049(60.6)	682(39.4)		183(32.3)	381(67.7)	
Employment status			1.214			0.658
Not working	508(60.6)	331(39.4)		63(33.2)	127(66.8)	
Currently working	693(63.0)	407(37.0)		160(36.5)	278(63.5)	
Wealth quintile			30.761***			40.215***
Lowest	298(70.8)	123(29.2)		79(56.8)	60(43.2)	
Middle	656(62.5)	394(37.5)		108(32.7)	222(67.3)	
Highest	247(52.8)	221(47.2)		36(22.6)	123(77.4)	
Place of residence			1.161			7.888**
Urban	567(60.7)	367(39.3)		89(29.9)	209(70.1)	
Rural	634(63.1)	371(36.9)		134(40.6)	196(59.4)	
Region			16.579**			36.574***
North-central	249(58.6)	176(41.4)		44(39.6)	67(60.4)	
North-east	168(68.6)	77(31.4)		48(61.5)	30(38.5)	
North-west	22(44.0)	28(56.0)		13(48.2)	14(51.8)	
South-east	216(59.0)	150(41.0)		25(24.0)	79(76.0)	
South-south	318(64.8)	173(35.2)		60(32.4)	125(67.6)	
South-west	228(63.0)	132(37.0)		33(26.8)	90(73.2)	

Note: **p < 0.01; ***p < 0.001

Multivariate analysis

The multivariate analysis of the unadjusted association between protective sexual behaviours and explanatory variables are presented in Table 3, Model 1. The result showed that the odds of engaging in protective sexual behaviour significantly increased among female young people who had knowledge of STIs (OR: 3.32, CI: 1.47-7.49). A similar result was observed among males who had a history of residential instability (OR: 2.06, CI: 1.18-3.58). The likelihood of engaging in protective sexual behaviour was higher among older female and male young people aged 20-24 years (OR: 1.43, CI: 1.19-1.73 and OR: 1.77, CI: 1.26-2.49, respectively) and those who had secondary or tertiary education (OR: 2.70, CI: 1.49-4.99 and OR: 6.58, CI: 2.76-15.68, respectively) compared to their counterparts in the reference categories.

The results further showed that the likelihood of engaging in protective sexual behaviour significantly increased with an increase in the household's wealth quintile among female and male young people. Besides, males who resided in rural areas were less likely to engage in protective sexual behaviours (OR: 0.62, CI: 0.45-0.87) relative to those in urban areas. Similarly, the likelihood of engaging in protective sexual behaviours significantly reduced among females and males living in the North-east region (OR: 0.65, CI: 0.47-0.90 and OR: 0.41, CI: 0.23-0.74, respectively). But the likelihood of engaging in protective sexual behaviours significantly increased among male young people living in the South-east and South-west regions (OR: 2.08, CI: 1.15-3.74 and OR: 1.79, CI: 1.03-3.11, respectively).

After adjusting for the significant variables in Table 3 Model 1, the results showed that confirmed the significant increase in the likelihood to engage in protective sexual behaviours among female young people who had knowledge of STIs (aOR: 2.54, CI: 1.10-5.83). Concerning age, the results further confirmed that the likelihood of engaging in protective sexual behaviour was higher among older female and male young people aged 20-24 years (aOR: 1.32, CI: 1.10-1.61 and aOR: 1.90, CI: 1.32-2.74, respectively) and who had secondary or tertiary education (aOR: 1.96, CI: 1.04-3.72 and aOR: 4.04, CI: 1.56-10.44, respectively).

Also, the likelihood of engaging in protective sexual behaviours significantly increased with an increase in the household's wealth quintile among young people. On the other hand, the results showed that the likelihood of engaging in protective sexual behaviours significantly reduced among female young people living in the South-south and South-west (aOR: 0.65, CI: 0.50-0.86 and aOR: 0.66, CI: 0.49-0.89, respectively).

Table 3: Multivariate logistic regression analysis showing factors associated with protective sexual behaviours among young people, 2018 NDHS

	Female		Male	
	Model 1	Model 2	Model 1	Model 2
Variable/category	OR(95% CI)	aOR(95% CI)	OR(95% CI)	aOR(95% CI)
Knowledge of STIs				
No (Ref.)	1.00	1.00	1.00	-
Yes	3.32(1.47-7.49)**	2.54(1.10-5.83)*	1.83(0.45-7.39)	-
Residential instability				
No (Ref.)	1.00		1.00	1.00
Yes	1.23(1.00-1.53)		2.06(1.18-3.58)*	1.53(0.86-2.74)
Sex of household head				
Male (Ref.)	1.00	-	1.00	-
Female	1.16(0.96-1.41)	-	1.25(0.83-1.88)	-
Age group				
15-19 (Ref.)	1.00	1.00	1.00	1.00
20-24	1.43(1.19-1.73)***	1.32(1.10-1.61)**	1.77(1.26-2.49)**	1.90(1.32-2.74)**
Educational attainment				
No education (Ref.)	1.00	1.00	1.00	1.00
Primary	1.82(0.90-3.68)	1.66(0.81-3.41)	2.81(0.96-8.22)	1.76(0.55-5.60)
Secondary/tertiary	2.70(1.49-4.99)**	1.96(1.04-3.72)*	6.58(2.76-15.68)***	4.04(1.56-10.44)**
Employment status				
Not working (Ref.)	1.00	-	1.00	-
Currently working	0.90(0.75-1.08)	-	0.86(0.60-1.23)	-
Wealth quintile				
Lowest (Ref.)	1.00	1.00	1.00	1.00
Middle	1.46(1.14-1.86)**	1.40(1.07-1.83)*	2.71(1.80-4.07)***	1.76(1.09-2.83)*
Highest	2.17(1.64-2.86)***	2.04(1.49-2.79)***	4.50(2.73-7.42)***	2.37(1.30-4.33)**
Place of residence				
Urban (Ref.)	1.00	-	1.00	1.00
Rural	0.90(0.75-1.09)	-	0.62(0.45-0.87)**	0.98(0.67-1.45)
Region				
North-central (Ref.)	1.00	1.00	1.00	1.00
North-east	0.65(0.47-0.90)**	0.79(0.56-1.12)	0.41(0.23-0.74)**	0.60(0.32-1.15)
North-west	1.80(1.00-3.25)	1.64(0.90-2.99)	0.71(0.30-1.65)	0.95(0.37-2.46)
South-east	0.98(0.74-1.31)	0.81(0.61-1.10)	2.08(1.15-3.74)*	1.71(0.91-3.19)
South-south	0.77(0.59-1.01)	0.65(0.50-0.86)**	1.37(0.84-2.23)	1.12(0.67-1.88)
South-west	0.83(0.62-1.11)	0.66(0.49-0.89)**	1.79(1.03-3.11)*	1.59(0.88-2.85)

Note: *p < 0.05; **p < 0.01; ***p < 0.001; Ref.= reference category

Discussion of findings

This study used a nationally representative population sample from the 2018 NDHS survey with a focus on gender disaggregation regarding factors associated with protective sexual behaviours among young people who were never married and sexually active. Also, making references to 5 years before the 2018 NDHS marks a departure in terms of its national coverage from most of the previous studies on sexual behaviour in Nigeria. The finding showed that more male than female young people engaged in protective sexual behaviours. This confirms the observation of a previous study in Nigeria that males are more likely to report condom use at last sexual intercourse relative to their female counterparts (Odimegwu, Imo & Amoo, 2020). The plausible explanation of this finding could be attributed to the fact that men tend to have multiple sexual partners and likely to insist on condom use during sex with partners, while females may engage in risky sexual behaviours to show their strong love for partners and faithfulness.

Consistent with a previous study in South Africa, the analysis of this study further showed that being knowledgeable of STIs significantly increased the likelihood of engaging in protective sexual behaviour among female young people (Shamu, Khupakonke, Farirai, Slabbert, Chidarikire, Guloba & Nkhwashu, 2020). This finding explains the fact having knowledge of how to avoid contracting STIs could predispose female young people into using condoms during sexual intercourse with numerous sexual partners, because contracting STIs may portray the person as being promiscuous in society. In addition, the finding from unadjusted analysis revealed that having a history of residential instability significantly increased the practice of protective sexual behaviours among male young people. Obviously, the fact that more male than female young people reported a history of residential instability comes with challenges of cultural norms and values that could heighten their indulgence in multiple sexual partnerships and increase STIs risks, thus practising protective sexual behaviour becomes unavoidable (Camlin & Charlebois 2019; Lawoyin & Kanthula 2010).

The findings further showed that young people aged 20-24 years were significantly more likely to engage in protective sexual behaviours than those aged 15-19 years. This is a confirmation of the observations in previous studies conducted in Nigeria (Adedini, Mobolaji, Alabi & Fatusi, 2021; Odimegwu, Imo & Amoo, 2020). As expected, young females and males becoming older plausibly increases their confidence, as well as knowledge and experience about SRH which guide their sexual behaviours. Also, the analysis showed that the likelihood of engaging in protective sexual behaviours significantly increased with an increase in the educational attainment and household's wealth quintile among female and male young people. This is evident that the rate at which youths are exposed through education could influence their sexual behaviour and translate into their financial security to negotiate condom use during sex with partners (Odimegwu, Imo and Amoo, 2020). The findings showed that female and male young people resident in the South-south and South-west regions are significantly disadvantaged in terms of engaging in protective sexual behaviours. This could be a reflection of the variations that exist between geopolitical regions in terms of residential based characteristics which account for differences in sexual behaviours of young people (Amoyaw & Luginaah, 2017). There is the need to introduce and encourage more youths' education and empowerment programmes, as well as region-wide sensitisations on sexual practices geared towards ensuring universal access to sexual and reproductive healthcare services.

Limitations of the study

This study has some limitations including the use of cross-sectional DHS data which meant that cause-effect relationship could not be determined, and the explanatory variables were only temporal factors associated with protective sexual behaviour. There is the likelihood of reporting bias/discordance regarding the use of condoms during the last sex with the most recent partner among the respondents in the last 5 years with most recent partner among the respondents. However, the findings are important for more strategic policies and programmes towards achieving sustainable development goals focusing on sexual and reproductive healthcare in Nigeria.

Conclusion and recommendations

This study found that most male young people engaged in protective sexual behaviours than their female counterparts. Being knowledgeable of STIs positively influence the practice of protective sexual behaviour among female young people. It was established in this study that young males mostly reported histories of residential instability which plausibly increases their chances of indulging in MSP and significantly encourages them to engage in protective sexual behaviours to avoid contracting STIs. Given the positive influence of some socio-economic and demographic factors like education, wealth and region of residence, there is the need for more educational and empowerment programmes on sexual and reproductive health to promote condom use among young people which is determined by the social environment. Also, region-wide sensitisations on sexual practices geared towards ensuring universal access to sexual and reproductive healthcare services should be encouraged in Nigeria.

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