


RESEARCH ARTICLE

Characteristics of men who engage in cross-generational sexual behaviour in Nigeria

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Abstract

Cross-generational sexual relationships are a major route of transmitting HIV and STI between older and younger generations. However, previous research has focused mainly on the young women in these relationships. This study examined the characteristics of men engaging in non-marital sexual relationships with girls aged 15–19 in Nigeria. The data were drawn from the 2013 Nigeria Demographic and Health Survey, and the analysis was restricted to a sub-sample of 7557 men aged 30–49 who were sexually active in the 12 months prior to the survey. Data analysis was carried out using frequency distributions, chi-squared tests of association and binary logistic regression. It was found that 9.5% of men aged 30–49 reported engaging in cross-generational sexual relationships. Also, being older (OR = 0.35), married (OR = 0.37), having secondary or higher education (OR = 0.70; 0.59) and having sexual debut between ages 18 and 30 (OR = 0.73) were associated with a lower likelihood of having cross-generational sexual relationships. However, Muslim men (OR = 2.10), men from Igbo (OR = 1.90), Hausa/Fulani (OR = 8.47) and Northern and Southern minority tribes (OR = 4.73; 2.49), men living in rural areas (OR = 1.34), men who were over the age of 30 at sexual debut (OR = 2.67) and those with 2–4 and 5 or more lifetime sexual partners (OR = 1.43; 1.58) were significantly more likely to engage in cross-generational sexual relationships. Addressing the challenges of cross-generational sexual relationships can be an effective strategy to reduce the menace of HIV and STI transmission. Men who have low education, those aged 30–34 years, those who initiated sex at an older age, rural dwellers and those who have had several lifetime sexual partners need to be targeted while designing and implementing programmes and policies to reduce cross-generational sexual relationships in Nigeria. These interventions must also take into account the religious and cultural attitudes towards cross-generational sexual relationships, and further investigations should identify men's motives for engaging in the practice.

Keywords: Cross-generational relationships; Nigeria; Sexual behaviour

Introduction

Cross-generational relationships (CGRs) are defined as non-marital sexual relationships where there is an age difference of at least 10 years between the partners (Hope, 2007). The focus on cross-generational relationships is usually more pronounced where the female partner is young – that is, between age 15 and 24, and the male partner is older, as it is assumed that this age difference is highly unequal and the young women in these relationships are likely to be exploited sexually due to their immaturity (Weissman *et al.*, 2006; Hope, 2007). The 2013 Nigeria Demographic and Health Survey reported that 18% of never-married females between ages 15 and 19 had ever been in a relationship with a man 10 or more years their senior, compared with

about 0.5% among adolescent males having sexual relationships with women 10 or more years older (NPC & ICF International, 2014).

Evidence shows that cross-generational relationships are characterized by transactional sex, as well as multiple partnering, as most of the men engaged in these relationships are already married with families of their own (Drakes *et al.*, 2013). Older men often view these relationships more as a recreational pursuit than a long-term union that may lead to marriage (Kuate-Defo, 2004; Leclerc-Madlala, 2008; Ojebode *et al.*, 2010, 2011). Also, the African culture of respect for older age and wealth means that the men are not held culpable even when they take advantage of younger women sexually (Gerver, 2013; Kaufman *et al.*, 2014). Condom use in these relationships is inconsistent at best, as the power dynamics are skewed in favour of the older men due to their age and financial provision for the young women, and the young women involved may be unable to insist on condom use (Gregson *et al.*, 2002; Luke & Kurz, 2002; Kaufman & Stavrou, 2004; Wight *et al.*, 2006; Nkosana & Nkosana, 2015). Also, the men often do not use condoms because of the belief that younger girls are unlikely to be infected by HIV and STIs (Longfield *et al.*, 2004). However, evidence shows that girls in cross-generational relationships usually have concurrent relationships with boys and young men closer to their own ages, which is a gateway for the inter-generational transmission of HIV and STIs (Gregson *et al.*, 2002; Longfield *et al.*, 2004). They may also view older male partners as a lower HIV and STI risk (Beauchair & Delva, 2013). Nonetheless, studies have found that older men are more likely to be HIV positive (Yuhua *et al.*, 2011; Schaefer *et al.*, 2017).

Men are often viewed as active agents in HIV transmission; however, their own vulnerability to HIV infection is often ignored. Cultural expectations and the tolerance of men's risky sexual practices make them open to HIV infection (Higgins *et al.*, 2010; Ramjee & Daniels, 2013; Muriisa *et al.*, 2016). Having sex with young girls, especially virgins, is still believed to be a cure for HIV, or as a route of spiritual cleansing and sexual rejuvenation in parts of Africa (Ojebode *et al.*, 2010, 2011; Adegbenro *et al.*, 2011; Nkosana & Nkosana, 2015). A study among men aged 50 and above in different sub-Saharan countries showed that they are at high risk of contracting HIV and STIs as they still engage in multiple sexual partnerships, do not use condoms consistently and have poor knowledge of HIV transmission and prevention (Odimegwu & Mutanda, 2017). In South Africa, Maughan-Brown *et al.* (2016) discovered that men in cross-generational relationships were more likely to have multiple partners, and to use alcohol before sex. Uchudi *et al.* (2010), in a study carried out across several sub-Saharan African countries, found that older married men aged 40 and above were more likely to have multiple sexual partners than younger married men. They also discovered that men often justified these relationships by the belief that they had uncontrollable sexual urges. Also, currently and formerly married men have been found to be more likely to have concurrent sexual partnerships and a larger number of lifetime sexual partners than never-married men (Kongnyuy *et al.*, 2006).

Men in the highest socioeconomic classes are more likely to have more concurrent sexual partnerships as well as lifetime sexual partners, and are less likely to use condoms consistently (Kongnyuy *et al.*, 2006; Oyediran *et al.*, 2010). In Zambia, the likelihood of extramarital sexual activity was found to be higher among men over 40 and those in professional occupations (Kimuna & Djamba, 2005). Similarly, Isiugo-Abanihe (1994) discovered in Nigeria that men who were highly educated and in monogamous unions were more likely to engage in extramarital relationships. Wealthy older partners are attractive to younger women due to their ability to provide for them financially, and they are also a source of social capital for young women seeking to better their future prospects (Uchudi *et al.*, 2010; Ojebode *et al.*, 2010, 2011). Poverty and low socioeconomic status are often motivating factors for girls and young women to start engaging in sexual activity at a young age, often with much older sexual partners. However, studies have also found that engagement in cross-generational relationships is not only motivated by the need for survival, but also for luxuries to show off to peers (Orubuloye *et al.*, 1991; Weissman *et al.*, 2006; Dupéré *et al.*, 2008; Oyediran *et al.*, 2011; Agunbiade, 2012; Kaufman *et al.*, 2014).

The literature often focuses on the young women engaged in cross-generational relationships, while next to nothing is known about the characteristics and sexual practices of their older partners (Shefer & Strebel, 2012). Previous research also has not recognized that men too are vulnerable to HIV and other sexually-transmitted infections. Therefore, this study aimed to examine the characteristics of men engaged in cross-generational relationships in Nigeria, as well as the factors that predispose men to engaging in these relationships. It also aimed to provide information that will be of importance in designing interventions to reduce the incidence of cross-generational relationships by addressing men's role in these relationships. Therefore, the study research questions were: 'What sexual behaviours do sexually active men aged 30 and above in Nigeria exhibit?' and 'How do the socio-demographic characteristics and sexual behaviour patterns of men influence their engagement in cross-generational relationships?'

Theoretical framework

This study examined participation in cross-generational relationships by men in Nigeria using the framework of gender and health by Courtenay (2000). The theory holds that traditional masculine behaviour, also known as hegemonic masculinity, encourages risk-taking among men, and ignoring all forms of health-seeking behaviour as this is viewed as feminine. Hegemonic masculinity has been held up as a standard of behaviour that men should aspire to, as it encourages risk taking, ignoring their health care needs and exercising power over women (Connell & Messerschmidt, 2005). In trying to prove their masculinity, men often engage in acts that are injurious to their health, such as engaging in physical violence, alcohol, drug and tobacco use, multiple sexual partnering and unprotected sexual activity (Courtenay, 2000; Sabo, 2000; Barker & Ricardo, 2005; Connell & Messerschmidt, 2005; Leal *et al.*, 2015).

Engaging in non-marital relationships with young girls is viewed as a form of recreational activity by men, and may be a means of them expressing their virility and higher socioeconomic status (Kuate-Defo, 2004; Leclerc-Madlala, 2008; Uchudi *et al.*, 2010). Teenage girls have less power and ability to negotiate relationships compared with older women, and are more likely to be easily sexually exploited in these relationships. Therefore, they are seen as an easy conquest, and men may find it easier to engage in relationships with them as a means of proving that they are still sexually desirable to younger women and proving their virility (Weissman *et al.*, 2006; Hope, 2007). However, having relationships with young girls comes with its own risks to men's sexual health, especially when their younger sexual partners are also engaging in unprotected sexual relationships with other sexual partners their own age. This becomes a problem where men assume that having unprotected sex with younger girls carries less risk compared with older women, and may open them up to increased risk of infection with HIV and other sexually transmitted infections (Gregson *et al.*, 2002; Longfield *et al.*, 2004).

Methods

The study used data from the men's re-code dataset of the 2013 Nigeria Demographic and Health Survey. The 2013 survey is the fifth conducted in the country, and it was designed to provide nationally representative data about the demographic characteristics, health and sexual behaviour of men and women aged 15–49 in Nigeria. The 2013 NDHS sample was selected using a stratified three-stage cluster design consisting of 904 clusters, 372 in urban areas and 532 in rural areas. A total of 40,680 households were selected for the survey, with 45 households selected per cluster. Also, in a subsample of half of all households, all men aged 15–49 who were either permanent residents or overnight visitors to the household were surveyed.

All men aged 30 and above who were sexually active in the 12 months preceding the survey were retained in the study sample, and the total sample size was 7557 men.

Dependent variable

The dependent variable was being engaged in a cross-generational relationship (CGR) within the last 12 months. This variable was derived by selecting men aged 30 and above in all marital categories who reported having a sexual relationship with a girl aged between 15 and 19 years in the 12 months preceding the survey. The variable was coded 'no' if men reported not engaging in a sexual relationship with a girl aged between 15 and 19, and 'yes' if otherwise.

Independent variables

Socio-demographic variables

Age was coded in 5-year age groups: 30–34, 35–39, 40–44 and 45–49. Previous studies have found a significant relationship between older age for men and engaging in a CGR (Ojebode *et al.*, 2010, 2011; Odimegwu & Mutanda, 2017). It is thus assumed that older men will have a higher likelihood of engaging in a CGR.

Marital status was categorized as 'Never married', 'Currently married/cohabiting' and 'Formerly married'. Married men have been discovered to have a higher likelihood of engaging in concurrent sexual relationships (Isiugo-Abanihe, 1994; Kongnyuy *et al.*, 2006; Uchudi *et al.*, 2010). Therefore, it was assumed that married men would have a higher likelihood of engaging in a CGR. Education was coded as 'No education', 'Primary', 'Secondary' and 'Higher'. Previous studies have found that more-educated men are more likely to have more sexual partners (Isiugo-Abanihe, 1994; Kongnyuy *et al.*, 2006; Oyediran *et al.*, 2010). It was thus expected that, in this study, the higher men's educational level the higher their likelihood of engaging in a CGR.

Wealth status was coded into 'Poor', 'Middle' and 'Rich'. Wealthier men have a higher likelihood of having multiple partnerships and engaging in a CGR (Kongnyuy *et al.*, 2006; Ojebode *et al.*, 2010, 2011; Oyediran *et al.*, 2010). It was thus assumed that the higher men's wealth status, the more likely they are to engage in a CGR.

Religion was categorized as 'Christian', 'Muslim' and 'Traditional/Other'. The influence of religion on engaging in a CGR among men has not been previously examined, so this study examined this relationship.

Occupation was categorized as 'Not working', 'Professional', 'Agricultural worker', 'Skilled worker' and 'Unskilled worker'. Men in professional occupations have been discovered to have higher extramarital sexual activity (Kimuna & Djamba, 2005). Therefore, it was assumed that men in higher status occupations would be more likely to engage in a CGR.

Place of residence was coded as 'Urban' and 'Rural'. It was assumed that urban men would be of higher socioeconomic status, and therefore more likely to engage in a CGR than rural men (Isiugo-Abanihe, 1994; Kongnyuy *et al.*, 2006; Ojebode *et al.*, 2010, 2011; Oyediran *et al.*, 2010).

Sexual behaviour variables

Number of non-marital sexual partners was coded as '0', '1' and '2+'. Men who engage in CGRs often engage in multiple partnering (Drakes *et al.*, 2013; Odimegwu & Mutanda, 2017). Therefore, it was assumed that there was a higher likelihood of engaging in a CGR among men who also engaged in multiple partnering.

Age at sexual debut was categorized as: 'At first union' for respondents who had their sexual debut when they entered their first union, regardless of age; 'Underage' for respondents who had their sexual debut below age 18; 'Normal age' for respondents who had their sexual debut between ages 18 and 30; and 'Older age' for men who reported that their sexual debut was above age 30. Little is known about the influence of age of sexual debut on the likelihood of engaging in a CGR among men. Therefore, this study examined this relationship.

Consistent condom use was categorized as 'No' or 'Yes'. Condom use has been discovered to be inconsistent with engaging in CGRs, as there are unequal power relations between partners, and

younger women believe that men are a lower HIV risk (Gregson *et al.*, 2002; Luke & Kurz, 2002; Kaufman & Stavrou, 2004; Wight *et al.*, 2006; Nkosana & Nkosana, 2015).

Ever tested for HIV was categorized as 'No' or 'Yes'. Little is known about the influence of HIV testing and the likelihood of engaging in CGRs among men. Therefore, this study examined this relationship.

Total number of lifetime sex partners was categorized as '1', '2–4' and '5+'. There is not much known about the influence on number of lifetime sex partners on men's likelihood of engaging in a CGR. Therefore, the study examined this relationship.

Paid someone for sex in last 12 months was categorized into 'No' or 'Yes'. Previous findings have shown cross-generational partnerships to be transactional in nature (Uchudi *et al.* 2010; Ojebode *et al.*, 2010, 2011; Oyediran *et al.*, 2011). Therefore, it was expected that men who have engaged in transactional sex would be more likely to engage in CGRs.

Data analysis

Data were analysed using Stata 12 software at the univariate, bivariate and multivariate levels. At the univariate level, respondents' socio-demographic characteristics and sexual behaviour are presented in a frequency table. The bivariate level involved running chi-squared tests to determine the association between the predictor and outcome variables. At the multivariate level, binary logistic regression was carried out to examine how the independent variables predicted the dependent variable. Three logistic regression models were fitted with adjusted odds ratios only. Model 1 tested the relationship between socio-demographic variables and cross-generational sexual activity among men in Nigeria. Model 2 tested the relationship between the sexual behaviour variables and CGR, while Model 3 combined both socio-demographic and sexual behaviour to predict the odds of men engaging in cross-generational relationships.

Results

Socio-demographic characteristics of respondents

Table 1 gives information about the respondents in the sample. There was only a slight difference in the number of respondents across age groups, and the largest number of respondents were in the age group 30–34, followed by 35–39, 40–44 and 45–49. The median age was 38, and the mean age as 38.3. The majority of respondents were married or cohabiting with their partners, while 9.1% of the sample were single men, and only 2.4% were formerly married or in union. More than a third of respondents had secondary education, and the rest were nearly evenly divided between having no education, primary and tertiary education. Half of respondents were in the rich wealth category, with nearly a third being poor and the rest being in the middle wealth category. The numbers of Christian and Muslim respondents were nearly equal, and only a small proportion were in the Traditional/Other religion category. Nearly a third of respondents were from the Hausa and Fulani ethnic groups, nearly 16% were from the Yoruba ethnic group, a little over 13% were Igbo, nearly a quarter were from Northern minority ethnic groups, 14.3% were from Southern minority ethnic groups and just 1.3% were from other ethnic groups, most likely non-Nigerians. The largest proportion of respondents were professional workers, with agricultural workers as the next-highest category. Skilled technical workers made up just over a fifth of the sample, with small numbers of respondents being either unskilled manual workers or not working. Additionally, more than half of respondents were rural dwellers.

Sexual behaviour of respondents

Table 2 shows the sexual behaviour of respondents. Nearly a tenth of respondents were, or had been, in a cross-generational relationship. The majority reported having no non-marital sexual partners in the

Table 1. Socio-demographic characteristics of respondents, men aged 30–49, Nigeria 2013 (*N* = 7557)

Variable	<i>n</i>	%
Age		
30–34	2019	29.1
35–39	1896	27.4
40–44	1561	22.5
45–49	1453	21.0
Mean	38.3	
Marital status		
Never married	630	9.1
Currently married/cohabiting	6131	88.5
Formerly married	165	2.4
Education		
None	1593	23.0
Primary	1525	22.0
Secondary	2523	36.4
Higher	1289	18.6
Wealth status		
Poor	2249	32.5
Middle	1212	17.5
Rich	3469	50.0
Religion		
Christianity	3389	48.9
Islam	3449	49.8
Traditional/Other	92	1.3
Ethnicity		
Yoruba	1083	15.6
Igbo	926	13.4
Hausa/Fulani	2200	31.8
Northern minority	1636	23.6
Southern minority	993	14.3
Other	89	1.3
Occupation		
Not working	106	1.5
Professional	2855	41.2
Agricultural	2107	30.4
Skilled worker	1568	22.6
Unskilled worker	294	4.2
Place of residence		
Urban	3041	43.9
Rural	3889	56.1

Table 2. Sexual behaviour of respondents

Variable	<i>n</i>	%
Engaged in a CGR in last 12 months		
No	6012	90.5
Yes	634	9.5
Number of non-marital sex partners in last 12 months		
0	5977	86.3
1	806	11.6
2+	147	2.1
Age at sexual debut		
At first union	2671	38.5
<18	1127	16.3
18–30	3061	44.2
>30	71	1.0
Consistent condom use		
No	1039	15.4
Yes	5722	84.6
Ever tested for HIV		
No	4722	68.1
Yes	2208	31.9
Total number of lifetime sexual partners		
1	1836	26.5
2–4	3151	45.5
5+	1943	28.0
Paid someone for sex in last 12 months		
No	6820	98.4
Yes	109	1.6

last 12 months, 11.6% reported having at least one non-marital sexual partner in the last 12 months and only 2.1% reported having two or more sexual partners in the last 12 months. The majority of respondents reported having their sexual debut between the ages of 18 and 30; 16.3% reported that their sexual debut was between ages 7 and 17, just over 38.5% reported that their sexual debut was at their first union, and just 1% reported having their sexual debut at over age 30. The majority of respondents reported consistent condom use, while nearly a third reported having ever had a HIV test. Also, 26.5% of respondents reported having just one lifetime sex partner, 45.5% reported having between 2 and 4 lifetime sex partners, while 28% reported having 5 or more lifetime sex partners. The overwhelming majority of respondents had not paid someone for sex in the last 12 months, while 1.6% reported having paid someone in exchange for sex in the same period.

Bivariate analysis

Table 3 shows the results of the bivariate relationship between cross-generational sexual activity and the predictor variables. It is seen that a higher proportion of men in the youngest age group

Table 3. Bivariate analysis: chi-squared test of association between predictor and outcome variables

Variable	Engaged in a CGR (%)		<i>p</i> -value
	No	Yes	
Age			
30–34	1552 (82.5)	330 (17.5)	<0.001**
35–39	1681 (91.7)	152 (8.3)	
40–44	1441 (94.9)	77 (5.1)	
45–49	1384 (97.6)	34 (2.4)	
Marital status			
Never married	475 (87.8)	66 (12.2)	0.021*
Currently married/cohabiting	5487 (91.4)	519 (8.6)	
Formerly married	94 (91.3)	9 (8.7)	
Education			
None	1196 (83.9)	229 (16.1)	<0.001**
Primary	1372 (90.5)	144 (9.5)	
Secondary	2224 (93.5)	154 (6.5)	
Higher	1266 (95.0)	66 (5.0)	
Wealth status			
Poor	1817 (85.6)	306 (14.4)	<0.001**
Middle	1094 (89.2)	132 (10.8)	
Rich	3147 (95.3)	155 (4.7)	
Religion			
Christianity	3336 (96.1)	135 (3.9)	<0.001**
Islam	2641 (85.4)	451 (14.6)	
Traditional/Other	81 (92.0)	7 (8.0)	
Ethnicity			
Yoruba	1025 (98.3)	18 (1.7)	<0.001**
Igbo	769 (97.0)	24 (3.0)	
Hausa/Fulani	1605 (81.6)	362 (18.4)	
Northern minority	1479 (91.8)	132 (8.2)	
Southern minority	1091 (95.3)	54 (4.7)	
Other	87 (95.6)	4 (4.4)	
Occupation			
Not working	92 (91.1)	9 (8.9)	0.001**
Professional	2514 (91.9)	222 (8.1)	
Agricultural	1860 (89.3)	222 (10.7)	
Skilled worker	1363 (92.7)	108 (7.3)	
Unskilled worker	229 (87.7)	32 (12.3)	

(Continued)

Table 3. (Continued)

Variable	Engaged in a CGR (%)		p-value
	No	Yes	
Place of residence			
Urban	2570 (95.0)	134 (5.0)	<0.001**
Rural	3488 (88.4)	459 (11.6)	
Number of non-marital sex partners in last 12 months			
0	5135 (91.2)	495 (8.8)	0.663
1	769 (90.3)	83 (9.7)	
2+	154 (91.1)	15 (8.9)	
Age at sexual debut			
At first union	2017 (84.6)	367 (15.4)	<0.001**
<18	1114 (94.2)	68 (5.8)	
18–30	2859 (95.0)	150 (5.0)	
>30	68 (89.5)	8 (10.5)	
Consistent condom use			
No	918 (90.1)	101 (9.9)	0.189
Yes	5001 (91.4)	473 (8.6)	
Ever tested for HIV			
No	3986 (89.1)	487 (10.9)	<0.001**
Yes	2072 (95.1)	106 (4.9)	
Total number of lifetime sex partners			
1	1347 (85.2)	234 (14.8)	<0.001**
2–4	2757 (91.1)	268 (8.9)	
5+	1954 (95.5)	91 (4.5)	
Paid someone for sex in last 12 months			
No	5961 (91.1)	582 (8.9)	0.641
Yes	97 (89.8)	11 (0.2)	

** $p < 0.01$; * $p < 0.05$.

(30–34) engaged in a CGR, with fewer men engaging in a CGR as age increased. Also, never-married men made up the largest category of men engaging in a CGR, while currently married and formerly married men had nearly equal proportions of those engaging in a CGR. Participation in a CGR reduced as educational level increased, as men with no education had the largest proportion engaging in a CGR, and those with tertiary education having the lowest level of engagement. Similarly, men in the poor wealth quintile had the highest participation in a CGR, and men in the rich wealth quintile had the lowest. Muslim men were found to have the highest proportion engaging in a CGR, followed by men reporting Traditional/Other religions and Christian men. Also, the highest rates of participation in a CGR were found among Hausa/Fulani men, followed by men from Northern minority ethnicities, and lowest among Igbo and Yoruba men. Unskilled workers had the highest rate of participation in a CGR, followed by agricultural workers, those not working, professional and skilled workers. Rural men had a higher proportion of men engaging in a CGR than urban men. Men whose sexual debut was at their first union had the highest

proportion engaged in a CGR, followed by men whose sexual debut was at ages above 30, men who debuted below age 18 and those who had their sexual debut between 18 and 30. Also, fewer men who reported ever having tested for HIV engaged in a CGR compared with men who had not tested for HIV. A higher proportion of men who reported having only one lifetime sex partner reported engaging in a CGR, compared with those with between 2 and 4 partners and 5 or more partners. It was also discovered in the chi-squared test that number of non-marital sexual partners in the past year, consistent condom use and having paid someone for sex in the past 12 months were not significantly associated with engaging in cross-generational sexual activity among men aged 30–49 in Nigeria.

Multivariate analysis

Table 4 shows the results of the binary logistic regression between engaging in cross-generational relationships and hypothesized predictor variables. The first model shows that men aged 35 and above were less likely to engage in a CGR compared with men below 35, and also the likelihood of engaging in a CGR decreased sharply with age. Also, married or cohabiting men were less likely to engage in a CGR than never-married men. Men with secondary and higher education were less likely than those without education to engage in a CGR. Muslim men were found to be more than twice more likely than Christian men to engage in a CGR, while Hausa/Fulani men were more than seven times more likely than Yoruba men to engage in a CGR, and men from the Northern and Southern minority tribes were more than four times and more than twice more likely to engage in a CGR than Yoruba men respectively. Men living in rural areas were also more likely to engage in a CGR with teenage girls than men in urban areas.

In Model 2, it was discovered that men who had sexual debut below age 18, and at ages between 18 and 30, had a lower likelihood of engaging in a CGR than men who had sexual debut at their first union. Additionally, men who had ever tested for HIV were significantly less likely to engage in a CGR than men who had never tested for HIV. In Model 3, the presence of sexual behaviour variables had very little effect on the association of age, marital status and educational level with a CGR, as older men, married men and men with secondary or higher education still had a significantly lower likelihood of engaging in a CGR. Also, Igbo, Hausa/Fulani and Northern and Southern minority tribe men had a higher likelihood of engaging in a CGR than Yoruba men.

However, the presence of sociodemographic variables had a significant influence on the association between sexual behaviour variables and engaging in CGRs. There was a change in the association between age at sexual debut and engaging in a CGR, as the model revealed that men who had their sexual debut at over age 30 were nearly three times more likely to engage in a CGR than those who had their sexual debut at first union, while men who had their sexual debut between 18 and 30 were less likely to engage in a CGR than men who had their sexual debut at first union. HIV testing did not significantly influence engaging in a CGR, and both men who had 2–4 and 5+ lifetime partners were significantly more likely to engage in a CGR compared with men with only one lifetime sex partner.

Discussion

The study examined the features of men who engage in cross-generational relationships with girls aged 15–19 in Nigeria. It examined the issue of cross-generational relationships taking men's characteristics into account. The univariate analysis showed that there is a possibility that engaging in a CGR is under-reported among men in Nigeria, as only 9.5% of the men aged 30 and above in this survey reported engaging in a CGR, compared with 18% reported by unmarried adolescent girls in the same survey (NPC & ICF International, 2014). The bivariate analysis revealed that age, marital status, education, wealth status, religion, ethnicity, occupational status, place of residence, ever being tested for HIV and number of lifetime sexual partners were significantly associated with

Table 4. Logistic regression between men's engagement in a CGR and predictor variables

Variable	Model 1 aOR (CI)	Model 2 aOR (CI)	Model 3 aOR (CI)
Age			
30–34 (Ref.)			
35–39	0.37** (0.30–0.45)		0.35** (0.28–0.43)
40–44	0.23** (0.18–0.30)		0.21** (0.16–0.28)
45–49	0.11** (0.07–0.15)		0.09** (0.07–0.13)
Marital status			
Never married (Ref.)			
Currently married/cohabiting	0.37** (0.26–0.52)		0.37** (0.25–0.52)
Formerly married	0.91 (0.42–1.97)		0.86 (0.39–1.88)
Education			
None (Ref.)			
Primary	1.06 (0.83–1.35)		1.04 (0.81–1.32)
Secondary	0.69** (0.52–0.91)		0.70* (0.52–0.91)
Higher	0.55** (0.37–0.80)		0.59** (0.40–0.86)
Wealth status			
Poor (Ref.)			
Middle	1.24 (0.95–1.62)		1.24 (0.96–1.63)
Rich	0.85 (0.60–1.19)		0.84 (0.60–1.19)
Religion			
Christianity (Ref.)			
Islam	2.09** (1.48–2.94)		2.10** (1.46–3.01)
Traditional/Other	1.56 (0.65–3.76)		1.50 (0.62–3.64)
Ethnicity			
Yoruba (Ref.)			
Igbo	1.81 (0.96–3.53)		1.90* (0.97–3.73)
Hausa/Fulani	7.82** (4.65–13.15)		8.47** (4.84–14.82)
Northern minority	4.33** (2.58–7.26)		4.73** (2.75–8.12)
Southern minority	2.35** (1.28–4.32)		2.49** (1.33–4.65)
Other	2.00 (0.56–7.15)		2.08 (0.58–7.52)
Occupation			
Not working (Ref.)			
Professional	1.81 (0.81–4.02)		1.77 (0.79–3.96)
Agricultural	1.40 (0.62–3.15)		1.36 (0.60–3.05)
Skilled worker	1.62 (0.71–3.66)		1.58 (0.70–3.59)
Unskilled worker	1.54 (0.64–3.71)		1.50 (0.62–3.63)

(Continued)

Table 4. (Continued)

Variable	Model 1 aOR (CI)	Model 2 aOR (CI)	Model 3 aOR (CI)
Place of residence			
Urban (Ref.)			
Rural	1.40* (1.08–1.84)		1.34* (1.02–1.76)
Age at sexual debut			
At first union (Ref.)			
<18		0.42** (0.30–0.59)	0.95 (0.64–1.41)
18–30		0.36** (0.29–0.46)	0.73* (0.54–0.98)
>30		0.69 (0.32–1.50)	2.67* (1.08–6.62)
Ever tested for HIV			
No			
Yes		0.61** (0.48–0.77)	0.84 (0.64–1.11)
Total number of lifetime sexual partners			
1 (Ref.)			
2–4		0.99 (0.80–1.21)	1.43** (1.15–1.78)
5+		0.75 (0.54–1.03)	1.58* (1.11–2.25)

aOR, adjusted Odds Ratio; CI, confidence interval; Ref., reference category.

** $p < 0.01$; * $p < 0.05$.

being in a cross-generational relationship, while number of non-marital sex partners in the last 12 months, consistent condom use and transactional sex were not. In the multivariate analysis, age remained a significant predictor of engaging in a CGR, as younger men aged 30–34 were found to be more likely to engage in a CGR. Ethnicity was also found to predict engagement in CGRs, as men from the Hausa/Fulani tribes had the highest likelihood of engaging in a CGR, followed by men from Northern and Southern minority tribes and Igbo men. Additionally, Muslim men were found to have a higher likelihood of engaging in a CGR with girls aged 15–19. Having secondary and higher education were associated with a lower likelihood of engaging in a CGR.

Unlike previous studies that found lower condom use among men engaged in CGRs, this study found no significant association between condom use and engagement in CGRs at either the bivariate or multivariate levels of analysis (Luke & Kurz, 2002; Longfield *et al.*, 2004; Nkosana & Nkosana, 2015). Multiple partnering was discovered to have no association with engaging in a CGR at the bivariate level, in contrast to the findings of Maughan-Brown *et al.* (2016) in South Africa. Also, wealth status was found to be significant in the bivariate analysis, but lost significance when inputted in the multivariate model. This is in contrast with previous studies in Nigeria, which found that wealthier older men engaged in CGRs (Ojebode *et al.*, 2010, 2011; Oyediran *et al.*, 2011). Similarly, there was no association between transactional sex and being in a cross-generational relationship at the bivariate level, contrary to findings by Agunbiade (2012), Dupéré *et al.* (2008), Kaufman *et al.* (2014), Ojebode *et al.* (2011) (2010, and Orubuloye *et al.* (1991). Engagement in cross-generational relationships was found to reduce with age, in contrast to previous studies which found that older men engaging in sexual risk behaviour (Uchudi *et al.*, 2010; Odimegwu & Mutanda, 2017). The study found that men aged 30–34 were found to be more likely to engage in CGRs compared with men aged 35 and above. Surprisingly, men who had sexual debut at over age 30 had the highest likelihood of engaging in

CGRs of all men. Also, in contrast to the findings of Uchudi *et al.* (2010), married or cohabiting men were the least likely to engage in CGRs, compared with never-married or formerly married men.

The study had its limitations. The dataset unfortunately did not capture motivations and reasons for engaging in cross-generational relationships by men, and so was unable to report on this. Also, the concurrent use of alcohol during sex could not be examined as the dataset did not have values for this variable. In addition, there is a possibility that CGRs and sexual risk behaviours were under-reported by this group of men. Furthermore, collecting retrospective data means that the data were subject to recall bias. In addition, because of the cross-sectional nature of the study, causality could not be determined, so only associations between the predictor and outcome variables were examined.

Conclusions and recommendations

The study discovered that men who were likely to engage in cross-generational relationships with adolescent girls under age 20 in Nigeria are mostly between the ages of 30 and 34, of low educational level, living in rural areas, had sexual debut above age 30 and have had at least two lifetime sexual partners. It can be observed that the men most likely to engage in CGRs are those with lower educational status and those living in rural areas. This may mean that they have less exposure and may not be aware of their own susceptibility to HIV and STIs. Also, the men most likely to engage in CGRs have multiple lifetime sexual partners, which would put them at a higher risk of contracting HIV and other STIs. Therefore, interventions aimed at addressing the problem of cross-generational relationships need to focus on young to middle-aged men, as well as those of lower educational status and those living in rural areas. In addition, as religion and ethnicity also predicted engagement in CGRs, it is important to be culturally sensitive when designing such interventions among men in Nigeria.

Future studies may examine the motivations for men engaging in cross-generational relationships with teenage girls using qualitative methods. Also, cultural factors in different parts of Nigeria that encourage men to engage in these relationships and shield them from the repercussions could be examined.

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References

- Adegbenro CA, Fabiyi AK, Esimai OA and Aluko MOA (2011) Incidences of cross-generational sexual activities in Nigeria: implications for HIV/AIDS control. *International Quarterly of Community Health Education* 31(2), 203–209.
- Agunbiade OM (2012) Dating practices and patterns of disclosure among in-school adolescents in Oyo State, Nigeria. *Africa Development* 37(3), 19–39.
- Barker G and Ricardo C (2005) Young men and the construction of masculinity in Sub-Saharan Africa: implications for HIV/AIDS, conflict, and violence. *Social Development Papers: Conflict Prevention & Reconstruction*, Paper No. 26, World Bank, Washington, DC.
- Beauclair R and Delva W (2013) Is younger really safer? A qualitative study of perceived risks and benefits of cross-generational relationships among women in Cape Town, South Africa. *PLoS One* 8(11) e81748–e81755.
- Connell RW and Messerschmidt JW (2005) Hegemonic masculinity: rethinking the concept. *Gender and Society* 19(6), 829–859.
- Courtenay WH (2000) Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social Science & Medicine* 50, 1385–1401.

- Drakes N, Perks C, Kumar A, Quimby K, Clarke C, Patel R *et al.*** (2013) Prevalence and risk factors for inter-generational sex: a cross-sectional cluster survey of Barbadian females aged 15–19. *BMC Women's Health* **13**, 53–62.
- Dupéré V, Lacourse E, Leventhal T, Willms DJ and Tremblay RE** (2008) Neighborhood poverty and early transition to sexual activity in young adolescents: a developmental ecological approach. *Child Development* **79**(5), 1463–1476.
- Gerver M** (2013) 'Sinigurisha! (You are not for sale!)': exploring the relationship between access to school, school fees, and sexual abuse in Rwanda. *Gender and Education* **25**(2), 220–235.
- Gregson S, Nyamukapa CA, Garnett GP, Mason PR, Zhuwau T, Caraël M *et al.*** (2002) Sexual mixing patterns and sex-differentials in teenage exposure to HIV infection in rural Zimbabwe. *The Lancet* **359**, 1896–1903.
- Hope R** (2007) *Addressing Cross-Generational Sex: A Desk Review of Research and Programs*. Population Reference Bureau, Washington, DC.
- Higgins JA, Hoffman S and Dworkin SL** (2010) Rethinking gender, heterosexual men, and vulnerability to HIV/AIDS. *American Journal of Public Health* **100**(3), 435–445.
- Isiugo-Abanihe UC** (1994) Extramarital relations and perceptions of HIV/AIDS in Nigeria. *Health Transition Review* **4**(2), 111–125.
- Kaufman CE and Stavrou SE** (2004) 'Bus fare please': the economics of sex and gifts among young people in urban South Africa. *Culture, Health and Sexuality* **6**(5), 377–391.
- Kaufman M, Mooney A, Modarres N, Mlangwa S, McCartney-Melstad A and Mushi A** (2014) "They just whisper in their hearts that he's doing a bad thing": a qualitative study of Tanzanian perceptions of cross-generational sex. *Journal of Sex Research* **51**(7), 814–826.
- Kimuna SR and Djamba YK** (2005) Wealth and extramarital sex among men in Zambia. *International Family Planning Perspectives* **31**(2), 83–89.
- Kongnyuy E, Wiysonge CS, Mbu RE, Nana P and Kouam L** (2006) Wealth and sexual behaviour among men in Cameroon. *BMC International Health and Human Rights* **6**, 11–18.
- Kuate-Defo B** (2004) Young people's relationships with sugar daddies and sugar mummies: what do we know and what do we need to know? *African Journal of Reproductive Health* **8**(2), 13–37.
- Leal AF, Knauth DR and Couto MT** (2015) The invisibility of homosexuality in HIV/AIDS prevention for men. *Brazilian Journal of Epidemiology* **18** (Supplement 1), 143–155.
- Leclerc-Madlala S** (2008) Cross-generational and intergenerational sex in southern Africa: the dynamics of hypervulnerability. *AIDS* **22** (supplement 4), S17–25.
- Longfield K, Glick A, Waithaka M and Berman J** (2004) Relationships between older men and younger women: implication for STIs/HIV in Kenya. *Studies in Family Planning* **35**(2), 125–134.
- Luke N and Kurz KM** (2002) *Cross-Generational and Transactional Sexual Relations in Sub-Saharan Africa: Prevalence of Behaviour and Implications for Negotiating Safer Sexual Practices*. Report, International Center for Research on Women, Population Services International 'AIDSMark Project'. URL: <https://www.icrw.org/wp-content/uploads/2016/10/Cross-generational-and-Transactional-Sexual-Relations-in-Sub-Saharan-Africa-Prevalence-of-Behavior-and-Implications-for-Negotiating-Safer-Sexual-Practices.pdf>
- Maughan-Brown B, Evans M and George G** (2016) Sexual behaviour of men and women within cross-generational partnerships in South Africa: implications for young women's HIV risk. *PLoS One* **11**(8), e0159162.
- Muriisa RK, Rubagiza J and Rwabyoma AS** (2016) Gender and HIV/AIDS in Eastern and Southern Africa: rethinking men and HIV/AIDS mitigation in Uganda and Rwanda. *Rwanda Journal Series B: Social Sciences* **3**, 101–122.
- Nkosana J and Nkosana L** (2015) Intergenerational sexual relationships: the voices of men. *Integrated Journal of British* **2**(9), 14–31.
- NPC and ICF International** (2014) *Nigeria Demographic and Health Survey 2013*. National Population Commission and ICF International, Abuja, Nigeria, and Rockville, MD, USA.
- Odimegwu CO and Mutanda N** (2017) Covariates of high-risk sexual behaviour of men aged 50 years and above in sub-Saharan Africa. *SAHARA-J: Journal of Social Aspects of HIV/AIDS* **14**(1), 162–170.
- Ojebode A, Togunde D and Adelakun A** (2010) Beyond money and gifts: social capital as motivation for cross-generational dating among tertiary school female students in South West Nigeria. *International Journal of Interdisciplinary Social Sciences* **5**(4), 169–182.
- Ojebode A, Togunde D and Adelakun A** (2011) Secrecy, security and social exchange: new media and cross-generational dating in Nigeria. *International Journal of Sociology of the Family* **37**(2), 307–327.
- Orubuloye IO, Caldwell JC and Caldwell P** (1991) Sexual networking in the Ekiti district of Nigeria. *Studies in Family Planning* **22**(2), 61–73.
- Oyediran K, Isiugo-Abanihe UC, Feyisetan BJ and Ishola GP** (2010) Prevalence of and factors associated with extramarital sex among Nigerian men. *American Journal of Men's Health* **4**(2), 124–134.
- Oyediran KA, Odutolu O and Atobatele AO** (2011) Intergenerational sexual relationship in Nigeria: implications for negotiating safe sexual practices. In Letamo G (ed.) *Social and Psychological Aspects of HIV/AIDS and their Ramifications*. ISBN: 978-953-307-640-9, Chapter 3, pp. 49–62.
- Ramjee G and Daniels B** (2013) Women and HIV in sub-Saharan Africa. *AIDS Research and Therapy* **10**(1), 30–38.

- Sabo D** (2000) Men's health studies: origins and trends. *Journal of American College Health* **49**(3), 133–142.
- Schaefer R, Gregson S, Eaton JW, Mugurungi O, Rhead R, Takaruzza A et al.** (2017) Cross-generational relationships and HIV incidence in adolescent girls and young women: evidence from Zimbabwe. *AIDS* **31**(10), 1461–1470.
- Shefer T and Strebel A** (2012) Deconstructing the 'sugar daddy': a critical review of the constructions of men in intergenerational sexual relationships in South Africa. *Agenda* **26**(4), 57–63.
- Uchudi J, Magadi M and Mostazir M** (2010) *A Multilevel Analysis of the Determinants of High Risk Sexual Behavior (Multiple Sexual Partners) in sub-Saharan Africa*. Social Research Methodology Centre Working Paper (SRMC 2010/03), July 2010. URL: http://www.city.ac.uk/__data/assets/pdf_file/0011/84719/The-determinants-of-high-risk-sexual-behavior-in-Africa-SR.pdf
- Weissman A, Cocker J, Sherburne L, Powers MB, Lovich R and Mukaka M** (2006) Cross-generational relationships: using a 'continuum of volition' in HIV prevention work among young people. *Gender and Development* **14**(1), 81–94.
- Wight D, Plummer ML, Mshana G, Wamoyi J, Shigongo ZS and Ross DA** (2006) Contradictory sexual norms and expectations for young people in rural Northern Tanzania. *Social Science & Medicine* **62**, 987–997.
- Yuhua R, Pan SW, Chamot E, Han-Zhu Q, Dongliang L, Qing-Chun L et al.** (2011) Sexual mixing patterns among social networks of HIV-positive men who have sex with men: a multilevel comparison using roundtable network mapping. *AIDS Care* **23**(8), 1014–1025.