



Sociodemographic Factors and Correlates of Condom use Among HIV Positive Men that have Sex with Men in an Urban Area

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ABSTRACT

The consistent use of condoms is necessary for an individual to maximize the protection it gives in comparison to inconsistent use. This study aims to assess factors associated with condom use among HIV-positive men who have sex with men. A cross-sectional descriptive study design was employed with a sample size of 209 men who have sex with men. The data were collected using an interviewer-administered questionnaire and analyzed using a statistical package for social sciences analysis. The prevalence of consistent condom use was 8.6% with 89.5% using condoms sometimes. The reasons for inconsistent condom use were; inconvenience (36.8%), impeding pleasure (23.4%), and non-availability (18.2%). There was a statistically significant association between income and condom use ($p=0.002$). The present findings suggest that the majority of the participants had tertiary education, nevertheless, it does not state if they knew the additional benefits of using a condom. Hence, accessing more information via media, health institutions, and posts may contribute to increasing the general knowledge of the importance of consistent condom use.

Keywords: Condom, HIV, MSM, Urban area

INTRODUCTION

There is a persistent global effort to decrease the rapid spread of Sexual Transmitted Infections (STIs) with the major focus being on the promotion of condom use as a safer measure. Nigeria peaks as the country with the second largest epidemic with its adult Human Immunodeficiency Virus (HIV) prevalence at about 1.4% among adults aged 15 years-49 years [1-3].

The theoretical and empirical basis of this protection is that condoms are expected to provide an impermeable barrier and prevent contact between the wearer and infected molecules found in their partner's skin, mucosa, and genital secretions. Men who have sex with men (MSM) have the highest HIV prevalence rate which is still on the rise with 20% of new HIV infections occurring among them. The most effective way of preventing STI and HIV infection among MSM who are sexually active is through the consistent and correct use of condoms. Studies have mentioned that condoms are known to be highly effective against the transmission of infections [4,5]. Another study stated that condoms are 90%-95% more effective when used consistently. This, in turn, suggested that

people who used condoms consistently were 10 to 20 times less likely to become infected than inconsistent or non-condom users [1].

Therefore, the consistent use of condoms is necessary for an individual to maximize the protection it gives in comparison to inconsistent use. Consistent and correct use of condoms protects against sexually transmitted infections such as HIV.

In Nigeria, the MSM population is distinctively vulnerable to HIV infection as there has been a consistent and significant increase in HIV prevalence [6]. However, efforts made to prevent the continuous spread of HIV infections among this population have been thwarted and can be described as less than successful [5]. The major reason for this is majorly due to existing legal restrictions and legislation that classify them as illegal having an attachment of over 14 years imprisonment. In 2014, the Telegraph reported that the then-President of Nigeria, President Goodluck Jonathan, had signed a new law in Nigeria, The Same Sex Marriage Prohibition Act. The act made it illegal for gay people to even hold a meeting and criminalizes homosexual clubs, associations, and organizations, with penalties of up to 14 years in jail (Ap, 2014). The act drew international condemnation from countries such as the United States and Britain. The law that has been in place for almost a decade reflects Nigeria's highly religious and conservative society that considers homosexuality a deviation.

The global epidemic is still in progress concerning the prevalence of HIV in MSM, and the effort to address it remains incomplete. The evidence from this study will be used to analyze the rising HIV prevalence among MSM in Nigeria and place major emphasis on the impact of consistent use of condoms in controlling the rise HIV epidemic in Port Harcourt and eventually in Nigeria.

METHODOLOGY

Study Area

It is a cross-sectional descriptive study using convenience sampling, where 209 men who have sex with men were recruited for the study from an Assisted Reproductive Technology (ART) clinic in Port Harcourt Rivers State. The data were collected using an interviewer-administered questionnaire. The questions were closed-ended. The study was conducted between March and May 2019.

Ethical Clearance

The protocol of this study was approved by the ethical research committee of Rivers State University Teaching Hospital.

Statistical analysis

Using a Statistical Package for Social Sciences (SPSS), a systematic analysis was carried out on this data. A two-sided $p < 0.05$ at a 95% Confidence Interval (CI) was considered statistically significant for the t-test to determine the statistical association between each variable.

RESULTS

During this study, a total number of 209 men were sampled. The majority of the population sample were men with the ages of 21 years-25 years (58.4%) followed by men 26 years-30 years (?). Therefore, there should be an increased focus on individuals within the 21 years to 25 years age group which could also include students undergoing tertiary education with a lower income. The population with the least frequency was 31 years-35 years (6.7%) as seen in Table 1. In this sample, 88.5% of men were single. More than 80% of the population was noted to have had a formal education, mostly tertiary (Table 2 and Table 3).

Table 1 Socio-demographic characteristics of respondents including gender, age, level of education, employment status, marital status, and income

Socio-Demographic	Frequency	%
Age range		
<21	20	9.6%
21 years-25 years	122	58.4%
26 years-30 years	53	25.4%
31 years-35 years	14	6.7%
Total	209	100%
Educational level		
No Formal Education	28	13.4%
Secondary Education	12	5.7%
Tertiary Education	169	80.9%
Total	209	100%
Marital Status		
Single	185	88.5%
Married	5	2.4%
Cohabiting	17	8.1%
Divorced/Separated/ Windowed	2	1%
Total	209	100%
Occupation		
Students	127	60.8%
Unemployed	2	1%
Employed	79	37.8%
Pensioners	1	0.5%
Total	209	100%
Income		
<N18000	108	51.7%
N18,000-N49,999	78	37.3%
N50,000-N81,999	20	9.6%
N82,000-N113,999	3	1.4%
Total	209	100%

Table 2 Frequency of condom use for practicing safer sex

Age Range	Consistent use of condoms after HIV diagnosis			total	Chi/df
	Never	Sometimes	Always		
<21 years	0	19	1	20	4.392 ^a
21 years-25 years	3	107	12	122	Df 6
26 years-30 years	0	49	4	53	
31 years-35 years	1	12	1	14	P 0.624
Total	4	187	18	209	

Educational level					
No Formal Education	0	27	1	28	3.585
Secondary Education	0	12	0	12	Df 4
Tertiary Education	4	148	17	169	P 0.465
Total	4	187	18	209	
Marital status					
Single	3	166	16	185	10.617 ^a
Married	1	3	1	5	Df 6
Cohabiting	0	16	1	17	
Divorced/Separated/ Windowed	0	2	0	2	P 0.101
Total	4	187	18	209	
Occupation					
Students	2	117	8	127	3.169 ^a
Unemployed	0	2	0	2	
Employed	2	67	10	79	Df 6
Pensioners	0	1	0	1	P0.787
Total	4	187	18	209	
Income					
<N18000	2	99	7	108	20.306
N18,000 - N49,999	1	70	7	78	Df 6
N50,000 - N81,999	0	16	4	20	
N82,000 - N113,999	1	2	0	3	P0.002
Total	4	187	18	209	

Despite the need for consistent use of protection, the frequency of regular condom use in this study was far from satisfactory.

The most inconsistent condom users with the 21-year-25-year-old bracket. Given that they had the highest population in the study it was evident. Nevertheless, they recorded more people refusing to use a condom. The prevalence of men who sometimes used condoms was (187 people) with 18 people stating they always use. This proves the inconsistent use of condoms. The study showed a statistically significant association between income and condom use ($p=0.002$). The fact could be that people with lower income may be unable to purchase condoms for every act of sexual intercourse which might be the cause of the inconsistent use of condoms. The situation only worsens with the addition of multiple sexual partners.

Analysis showing factors associated with non-consistent use of condoms after HIV diagnosis

Consistent use of condoms after HIV diagnosis	No.	%
Never	4	1.9%
Sometimes	187	89.5%
Always	18	8.6%
Total	209	100%
Reason for non-consistent use of condom after HIV diagnosis	No.	%
Nonavailability	38	18.2%
Inconvenient	77	36.8%

Impedes pleasure	49	23.4%
Refusal by Partner	26	12.4%
combined reasons	2	1%
Total	192	91.9%

The prevalence of consistent condom use was 8.6% with 89.5% stating to use condoms sometimes as seen in Table 3. The major reason for inconsistent condom use included Inconvenience (36.8%), impeding pleasure (23.4%), and non-availability (18.2%).

Table 4 Number of sexual partners within last 6 months associated with Consistent use of condom after HIV diagnosis Crosstabulation

Count		Consistent use of condoms after HIV diagnosis			Total
		Never	Sometimes	Always	
No sexual partners within the last 6 months	Nil	0	5	0	5
	1	0	9	0	9
	>1	4	173	18	195
Total		4	187	18	209

Approximately 93% (195) of the correspondence admitted to having multiple partners within the last 6 months. 173 participants stated they had more than one sexual partner and were noted to be inconsistent with their condom use (Table 4). The reduction of the number of sex partners and increasing the use of condoms can reduce the incidence of STIs [7,8].

DISCUSSION

Despite the best efforts and modernized interventions, HIV remains a catastrophic issue in human health. The major intervention being pushed by many global public health organizations is the consistent and correct use of condoms. The Centres for Disease Control and Prevention (CDC) stated that “To achieve maximum protection by using condoms, they must be used consistently and correctly” [4,9-11].

Given the nature of the educational system in Nigeria, the Basic Education Curriculum (BEC) list sex education as part of the subjects taught in schools. The major issue in Nigeria is the attitude of students and the role parents play [12]. However, with this, it is safe to assume the majority of the participants have formal education on sex, the use, and the importance of protection to fight against the spread of Sexually Transmitted Infections (STIs). This can be noted in the percentage of individuals having tertiary education from this study (Table 1).

Due to the decrease in the frequency of sexual activity with age (Table 1), supports studies that have stated that sexual activity reduces with age as there is a decrease in testosterone production and libido as well as changes to changes in receptor site sensitivity to androgen (Meston, 1997), in addition, we are likely to see a decrease after the fifth decade of the lifespan of most men [11].

This study showed a young educated HIV-positive MSM population with a low prevalence of consistent condom use despite admitting to having multiple partners. Despite knowing the importance of condom usage, the frequency of consistent condom use is still relatively low. In China, Jiang et al., 2019, reported that there was a progressive increase from 47% in the proportion of consistent condom use among MSM [9]. However, it remained an issue due to the increased prevalence of HIV. In addition, in the United States, Abara et al., 2017 also stated that approximately only 31% of all respondents reported condom use at the last sex [1]. This indicates that internationally, the use of condoms is very inconsistent, particularly with regular partners, and may be at risk for HIV. These data suggest that the frequency of condom use among MSM is less than average, and the continued promotion of consistent condom use as an effective risk-reduction strategy is important [13,14].

Reduced prevalence of condom use could lead to infection of more people, worsening the HIV infection, and causing reinfection with a more resistant viral strain. This is often associated with HIV superinfection which occurs when an individual with HIV is infected with a new distinct HIV viral strain and this has been documented in observational studies and case reports in the USA, Canada, Europe, Australia, Asia, and Africa [15]. In addition, there is also the risk of Dual Infection, which is defined as one person infected with 2 or more different HIV-1 strains [10].

In addition, this study stated that there was a large percentage of sexual partner concurrency. Sexual partner concurrency is the overlapping sexual partnerships, with participants indicating to have been with more than one partner over 6 months. The sexual concurrency is hypothesized to facilitate HIV transmission by increasing the chance that a partner is exposed during their period of increased infectiousness following HIV acquisition [13,16]. The study also signified a high rate of concurrency has been documented among MSM in the United States. Multiple and concurrent sexual partnerships may be associated with being a catalyst for increased prevalence of HIV among MSM with the suggestion of emphasis being placed on the reduction of multiple and concurrent sexual partners [7,17].

The present findings suggest that the majority of the participants had tertiary education, nevertheless, it does not state if they knew the additional benefits of using a condom. Hence, accessing more information via media, health institutions, and posts may contribute to increasing the general knowledge of the importance of consistent condom use. This in turn would improve general awareness in individuals with lower educational status as a different study stated that participants with higher educational status were more likely to use condoms consistently in comparison to lower educational status participants [3].

CONCLUSION

the study suggests that prevention programs should be set up with the right rules and regulations in place. These programs should include a variety of interactive strategies to promote communication with the MSM population. Given that it is difficult to reach this population without legal consequences, healthcare professionals are to be placed with the responsibility of informing their patients on consistent condom usage and its importance.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

- [1] Abara, Winston E., et al. "Prevalence and correlates of condom use among sexually active men who have sex with men in the United States: findings from the National Survey of Family Growth, 2002, 2006–10 and 2011–13." *Sexual health*, Vol. 14, No. 4, 2017, pp. 363-71.
- [2] Ap "Nigeria passes law banning homosexuality" *The Telegraph*, 2014.
- [3] Ayele, Wolde M., et al. "Prevalence of consistent condom use and associated factors among serodiscordant couples in Ethiopia, 2020: a mixed-method study." *BioMed Research International*, 2021, pp.1-10.
- [4] "Condom fact sheet in brief - centers for disease control and Prevention" 2023.
- [5] Dwomoh, Duah, et al. "Estimating prevalence and modelling correlates of HIV test positivity among Female Sex Workers, Men who have Sex with Men, People who Inject Drugs, Transgender People and Prison Inmates in Sierra Leone, 2021." 2023.
- [6] Eluwa, George IE, et al. "Rising HIV prevalence among men who have sex with men in Nigeria: a trend analysis." *BMC Public Health*, Vol. 19, 2019, pp. 1-10.

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- [7] Garcia, M. C., et al. "Multiple and concurrent sexual partnerships among men who have sex with men in Viet Nam: results from a National Internet-based Cross-sectional Survey." *Health promotion international*, Vol. 31, No. 1, 2016, pp. 133-43.
- [8] Garnett, G. P., P. J. White, and H. Ward. "Fewer partners or more condoms? Modelling the effectiveness of STI prevention interventions." *Sexually transmitted infections*, Vol. 84, No. 2, 2008, pp. ii4-ii11.
- [9] Jiang, Hongbo, et al. "Predictors of condom use behavior among men who have sex with men in China using a modified information-motivation-behavioral skills (IMB) model." *BMC public health*, Vol. 19, No. 1, 2019, pp. 1-12.
- [10] Luan, Hong, et al. "Dual infection contributes to rapid disease progression in men who have sex with men in China." *Journal of Acquired Immune Deficiency Syndromes (1999)*, Vol. 75, No. 4, 2017, p. 480.
- [11] Meston, Cindy M. "Aging and sexuality." *Western Journal of Medicine*, Vol. 167, No. 4, 1997, p. 285.
- [12] Musa, A. "sex education in nigeria: attitude of secondary school adolescents and the role of parents and stakeholders." *Open Journal of Educational Development (ISSN: 2734-2050)*, Vol. 1, No. 1, 2020, pp. 1-30.
- [13] Pines, Heather A., Maile Y. Karris, and Susan J. Little. "Sexual partner concurrency among partners reported by MSM with recent HIV infection." *AIDS and Behavior*, Vol. 21, 2017, pp. 3026-34.
- [14] Pinkerton, Steven D., and Paul R. Abramson. "Effectiveness of condoms in preventing HIV transmission." *Social science & medicine*, Vol. 44, No. 9, 1997, pp. 1303-12.
- [15] Redd, Andrew D., Thomas C. Quinn, and Aaron AR Tobian. "Frequency and implications of HIV superinfection." *The Lancet infectious diseases*, Vol. 13, No. 7, 2013, pp. 622-28.
- [16] Smith, Dawn K., et al. "Condom effectiveness for HIV prevention by consistency of use among men who have sex with men in the United States." *JAIDS Journal of Acquired Immune Deficiency Syndromes*, Vol. 68, No. 3, 2015, pp. 337-44.
- [17] New survey results indicate that Nigeria has an HIV prevalence of 1.4%, *UNAIDS*, 2019.