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RELIGIOSITY AND RISKY BEHAVIORS AMONG ADOLESCENTS LIVING WITH HIV IN SOUTHWEST NIGERIA

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ABSTRACT

Risky behaviors remain highly prevalent among adolescents, and they are the foremost cause of unplanned pregnancies, sexually transmitted infections (STIs) including HIV, intellectual deterioration, and suicide attempts. Religion has been opined to mitigate risky behaviors among young people. This study assessed if there is a relationship between religiosity and risky behaviors among adolescents living with HIV in southwest Nigeria**.** It is a descriptive cross-sectional study of 212 adolescents selected via a multistage sampling technique. Data were collected using interviewer-administered questionnaires. Religiosity was classified as low, moderate, and high religious involvement based on the frequency of religious activities attendance using the Duke University Religion Index. Data was analyzed using SPSS version 22. Logistic regression was used to find factors associated with risky behavior. P was set as < 0.05. Low religiosity (OR=23.975; 95% C.I =2.591-221.851), late adolescence (OR=10.404; 95% C.I = 2.259-47.918) and not having formal education (OR=3.558; 95% C.I =1.324-9.562) significantly predicted high-risk behavior. High religious involvements hold some promise in mitigating risky sexual behaviors among adolescents with HIV.

Keywords: Adolescents; HIV/AIDS; Ogun State; Religiosity; Risky Behavior.

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Introduction

Risky behaviors describe the characteristics of an individual that increase his/her possibility of being involved in unhealthy conduct like taking alcohol, substance use, suicide, violence, and early sexual debut. (1) Risky behaviors remain highly prevalent among adolescents in developing and developed climes. (2) Nebbit opined that several risky behaviors commence during the adolescent years and these affect the immediate and long-term health of the individual. (3) Risky behaviors among adolescents are the foremost cause of unplanned pregnancies, sexually transmitted infections (STIs) including HIV, intellectual deterioration, and suicide attempts. (4)

Religiosity can be described as the extent to which an individual adheres to a particular religion's beliefs, canons, and practices and essentially involves identifying with a group that aligns with such activities. (5) According to Koenig et al, religiosity may be organizational or non-organizational. Organizational religiosity is characterized by involvement in programs with people of the same belief which may be a church, mosque, or another religious setting. On the other hand, non-organizational religiosity involves behaviors done outside organized settings such as personal prayers, reading religious literature, watching religious programs, and so on. On the contrary, he hypothesized spirituality as perceptions and attitudes and not necessarily having any involvement with a religious group. (6) Mattis gave a few concise differences between religiosity and spirituality. Such included religiosity as organized worship while spirituality describes incorporating constructive principles; furthermore, he opined that religion was a pathway to spirituality and that while religion pertains to worship, spirituality essentially describes a relationship.(5)

Recently more consideration has been given to the impact religious organizations can have concerning adopting healthy behavior. It has been discovered that religious organizations can positively influence people to adopt healthy behaviors, reduce risky health behaviors, and therefore help people live healthy and more productive lives. (7) Several authors from different parts of the world have also shown that being religious mitigates risky behaviors, particularly among young people and adolescents.(2,8–10) According to Francis, (2) religiosity reduces the tendency of young people to be involved in risky behaviors. Ludema (10) and Landor (9) opined that religiosity discourages adolescents from having multiple sexual partners. Apart from discouraging young people from risky behaviors, religiosity has been documented as one of the ways by which young people and their families cope with the burdens of HIV. (11) Additionally, Religiosity has been shown to reduce the incidence of anxiety and depression in HIV-positive adolescents.(12)

One postulated way religiosity positively impacts health behavior and outcomes is by giving peace, meaning, and a sense of purpose to life. It is documented that religion helps to bring optimism during unpalatable conditions. (13) Nevertheless, a few authors have suggested some negative effects of religiosity on adolescents particularly those infected with HIV. According to Bernstein, religiosity can introduce some level of distress to HIV-positive teenagers because they feel more neglected by God as

compared to their HIV-negative counterparts. (14)Similarly, Lyon opined that HIV-infected teenagers may believe their infection is a chastisement from God. (12).

Religiosity matter is vital for both adolescents and their families. (15) Many adolescents have been reported to rate themselves as religious with a higher rating among girls as compared to boys. (16) According to Wilandika, many young people are highly religious and possess a strong self-efficacy in the prevention of high-risk behavior. (17) Understanding the relationship between religiosity and HIV prevention mechanisms may be profitable for the approaches for enhancing the utilization of these mechanisms soon. (18) Generally, many studies have examined HIV prevalence among adolescents instead of specific behavioral risk outcomes. There is also a need to consider measures of both religiosity and religious affiliations and determine the most appropriate measures of religiosity in understanding risk contexts among adolescents with HIV.(19) This study, however, aimed to assess the association between religiosity and risky behaviors among adolescents living with HIV in Ogun State, Southwest Nigeria. Understanding the relationship between involvement in religious activities and engaging in risky behaviors like risky sexual activities, smoking, and taking alcohol will give possible insight into the factors that might have contributed to contracting the disease among these adolescents and give a red alert as to the possibility of infecting others.

Methods

Participants and Settings

This was a facility-based cross-sectional study conducted among adolescents receiving care in selected ART-enabled facilities in Ogun State, Southwest, Nigeria. Those who were acutely ill and those whose parents/guardians refused consent were excluded from the study. The minimum sample size was determined using the standard formula for calculating the sample sizes of descriptive studies. A standard normal deviation of 1.96, a prevalence of 13.6% from a similar study, (20), and a margin of error of 5% were inputted into the formula and this gave a minimum sample size of 181. Correcting for a non-response rate of 10%, the final calculation became 201. However, a total of 212 adolescents participated in the study.

Measures and Procedure

The multistage probability sampling method was used to select participants for this study. In the first stage, one senatorial district (Ogun East) was selected from the 3 senatorial districts in Ogun State. In the second stage, 5 ART-enabled facilities were selected in the senatorial district from a sample frame of the ART-enabled facilities. In the next stage, based on the estimated number of HIV-positive adolescents enrolled at each facility, a proportionate sample of adolescents required in each facility was calculated.

The adolescents were recruited consecutively till the number allocated to each facility was achieved. A close-ended, interviewer-administered questionnaire was used to elicit data by trained research assistants. Part of this tool was extracted from the

Sexual Risk Behaviors Scale (SRBS):(21) The questionnaire sought information on participants' socio-demographic characteristics, clinical and ART status, risky behaviors, and participants' religiosity. Seven risky behaviors were assessed namely having multiple sexual partners; having had sex with IDU, sex workers, or other high-risk sexual partners; alcohol/drug use during sex; not using a condom during last sex; alcohol intake; smoking; and other substances use like marijuana. Anyone who partook in 4 or more of these was considered as having high risky behavior and those who partook in 3 or fewer were classified as having low risky behavior. (22) According to the Duke University Religion Index, the frequency of attendance at religious activities may be used in assessing religiosity.(6) For this study, those who had never attended a religious service or who attended less than once a month were classified as having low religious involvement. Those who attended 1-3 times a month were classified as having moderate religious involvement while those who attended once or more times a week were classified as having high religious involvement.

Ethical consideration

Ethics approval for this study was obtained from the Human Research Ethics Committee of the Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria (OOUTH/HREC/206/2018AP). Verbal and written informed consent was obtained from all the participants following a detailed explanation of the study protocol. Parental/guardian assents were also obtained where necessary. Participation was entirely voluntary, and participants were free to withdraw participation from the study at any time without any negative consequence. Data obtained were kept confidential throughout the study period.

Data Analysis

Elicited data were coded and initially entered into Microsoft Excel software, from where they were exported into Statistical Package for Social Sciences (SPSS) software version 22 for analysis. Double entry of data was done to enhance data cleaning. The analyzed data were presented as frequency tables. Data were summarized using mean, standard deviation, and proportions. Chi-squares were used to test for associations between religiosity and other categorical variables and risky behaviors. Logistic regression was used to analyze factors associated with risky behaviors. The level of significance was set at 5%.

Results

Table 1 shows that the adolescents were almost equally distributed into mid (50.5%) and late (49.5%) adolescence. A little over half of them were males (50.9%) while 49.1% were females. The majority (84.4%) were students while only a few (15.6%) were not students. The majority (98.1%) were living with their parents or guardians.

Table 1: Socio-demographic Characteristics of Respondents

Variable	Frequency	Percentage
Age		
14-16	107	50.5
17-19	105	49.5
Sex		
Female	104	49.1
Male	108	50.9
Occupation		
Student	179	84.4
Non-Student	33	15.6
Marital Status		
Single	212	100.0
Religion		
Christianity	151	71.2
Islam	61	28.8
Ethnicity		
Yoruba	135	63.7
Ibo	49	23.1
Hausa	5	2.4
Others	23	10.8
People Living With		
Parents/Guardian	208	98.1
Alone	2	0.9
Others	2	0.9

A few (5.7%) of the adolescents were diagnosed with HIV for less than a year while about two-fifths (38.6%) were diagnosed with HIV for 1-5 years. About a quarter (24.1%) had been diagnosed with HIV for more than 10 years. All the adolescents had commenced HAART and less than one-fifth (16.5%) had co-morbidity (Table 2).

Table 2: Respondents HIV Characteristics

Variable	Frequency	Percentage
Duration of Diagnosis (Years)		
<1	12	5.7
1-5	82	38.6
6-10	67	31.6
>10	51	24.1
HAART		
Yes	212	100.0
No		
Co-Morbidity		
Yes	35	16.5
No	177	83.5

HAART: Highly Active Anti-Retroviral Therapy

Most (78.3%) of the respondents had high religious involvement, about one-fifth

(18.9%) had moderate religious involvement while a few (2.8%) had low religious involvement (Table 3)

Table 3: Religion/Spiritual Characteristics of Respondents

Variable	Frequency	Percentage
Religious involvement		
Low	6	2.8%
Moderate	40	18.9%
High	166	78.3%

Table 4 shows risky behavior among adolescents. More than one-tenth (13.2%) had ever had sex and about four-fifths (78.6%) of them started having sex from the age of 14 years. A few (3.3%) had ever had multiple sexual partners or had sex with high-risk partners (1.4%). Nearly three-fifths (55.2%) of those who had sex recently did not use a condom during the last sex. A few of the participants had taken alcohol previously (6.6%) or currently taking alcohol 4.2%. In all, 11.8% of the respondents had high-risky behavior while 88.2% had low-risky behavior

Table 4: Risky Behavior among Adolescents

Variable	Frequency	Percentage
Sexual Risky Behavior		
Sex ever		
Yes	28	13.2
No	184	86.8
Sexually Active (Had sex in last 12 months)		
Yes		
No		
Age of Sexual Debut (Years)		
<14	6	21.4
≥14	22	78.6
Lifetime sex partners		
≤1	200	94.3
>1	12	5.7
Sexual partner in the preceding 3 months		
Yes	1	0.5
No	211	99.5
Number of Sexual Partners (current)		
none	198	93.4
1	13	6.1
≥2	1	0.5
Multiple sex partners (ever)		
Yes	7	3.3
No	205	96.7
Ever had sex with IDU, Sex worker, other high-		

risk partners		
Yes	3	1.4
No	209	98.6
Ever taken alcohol/drugs during sex		
Yes	2	0.9
No	210	99.1
Used Condom during last sex		
Yes	13	44.8
No	16	55.2
Alcohol Use		
Never	189	89.2
Previous	14	6.6
Current	9	4.2
Smoking		
Never	209	98.6
Previous	3	1.4
Current		
Other substance use		
Marijuana	1	0.5
Non-prescription methadone	1	0.5
Other opiates, narcotics, or painkillers	1	0.5
Tranquilizers (Valium, ludes, klonopins)	2	0.9
Risky Behavior Category		
High	25	11.8
Low	187	88.2

Table 5 shows that there were statistically significant associations between religiosity (p=0.04), age (<0.001), occupation (<0.001,) and engaging in high-risk behavior. Having low religiosity (OR=23.975; 95% C.I=2.6-221fewer being in late adolescence (OR=10.404; 95% C.I = 2.3-47.9), and having no formal education (OR=3.558; 95% C.I=1.3-9.6) remained significant predictors of engaging in high-risk behavior

Table 5: Religious and other Respondent Characteristics and bivariate/multivariate

Relationship with Risky Behaviors

Factors/Variable	High-Risk Behavior		p-value	Odd's Ratio	95%C.I	p-value
	Yes	No				
Religiosity						
Low	3 (50.0)	3 (50.0)		23.975	2.591-221.851	0.005
Moderate	6 (15.0)	34 (85.0)	0.04	1.563	0.520-4.692	0.426
High	16 (9.6)	150 (90.4)		Reference		
Age						
10-13						
14-16	3 (2.8)	104 (97.2)		Reference		
17-19	22 (21.0)	83 (79.0)	<0.001	10.404	2.259-47.918	0.003
Sex						
Female	14 (13.5)	90 (86.5)				
Male	11 (10.2)	97 (89.8)	0.460			
Occupation						
Student	14 (7.8)	165 (92.2)		Reference		
Non-student	11 (33.3)	22 (66.7)	<0.001 fishers	3.558	1.324-9.562	0.012
Religion						
Christianity	17 (11.3)	134 (88.7)				
Islam	8 (13.1)	53 (86.9)	0.704			

Discussion

Rates of alcohol and substance use among adolescents living with HIV in this current study were relatively low when compared to some other studies. (23,24) However, we observed a high prevalence of unhealthy sexual behaviors, particularly having unprotected sex as almost three-fifths (55.2%) of the sexually active participants reported they did not use a condom during the last sex; a figure higher than what was reported by Aboki (25) and Birungi (26). The high occurrence of unprotected sex in our study is a source of concern since the most common method of spreading HIV is sexual intercourse. Nevertheless, other studies in Southeast Nigeria, (27) Uganda, (28), and the USA (29) reported a similarly high prevalence of risky sexual behaviors among young people.

Many authors have suggested the need for diversification and innovation in implementing intervention and prevention programs to reduce the scourge of HIV among adolescents. Rotheram-Borus, (30) for instance, decried the exclusion of

significant sites like parents' business organizations, self-help networks, primary health care facilities, and religious institutions which may have positive impacts on the control of HIV among these age groups. Elifson also asserted the importance of religious settings in reducing high-risk behaviors and leading a healthy lifestyle. (7)

Our study observed that adolescents with low and moderate religiosity had increased odds of engaging in high-risk behaviors unlike those with high religiosity with low religiosity significantly predicting high-risk behaviors among adolescents. These findings concur with what was documented in South Africa and the USA.(8,10) The inverse relationship between religiosity and risky health-related behaviors among adolescents living with HIV may be due to several factors. First, religion is known to teach individuals good moral values. Also, religious adolescents usually relate with peers who are less likely to engage in risky behaviors (9) which subsequently reduces the possibility of risky behaviors in such adolescents.

Furthermore, Landor (9) and Smith(31) have postulated that highly religious adolescents are more likely to have been reared by similarly highly religious parents and according to Snider, (32) such religious parents are usually more efficient in child upbringing, especially in areas of communicating with their teenage children, watching over them, and having cordial relationships with them. In a similar vein, Quinn (33) postulated that greater religiosity in the family mitigates risky sexual behavior among young adults. The findings in our current study can be used by stakeholders in implementing religiosity-oriented interventions that may equip adolescents with skills needed to reduce risky behaviors that may predispose them to contracting HIV. (17) According to Serur, (34) if religious leaders are adequately trained, they may become key players in the area of creating awareness and behavioral change as it relates to HIV/AIDS because they influence their congregations.

Our study also found that being in late adolescence predicts involvement in risky behavior. In a similar vein, Romer et al (35) posited that risky behavior typically increases from early to late adolescence. Several factors may have been responsible for this higher risky behavior in late adolescence. First, our study essentially assessed unhealthy sexual practices, alcohol, and substance intake among adolescents; the type of risky behaviors that have been documented to be more ubiquitous in late adolescence, unlike aggressive behaviors which are more common among younger adolescents. (36,37) Besides, the older adolescents might have become independent and relatively free from the controlling and disciplinary influence of their parents which placed restrictions on some unhealthy behaviors. Furthermore, older adolescents may have been admitted into tertiary academic institutions where various risky behaviors are well-pronounced, (38) unlike the younger schooling adolescents who would probably be in secondary or even primary schools with strict rules and regulations that forbid and deter students from engaging in risky behaviors. Lastly, Nigerian law does not permit younger adolescents to consume alcohol and tobacco and therefore this may have contributed to the lower prevalence of risky behaviors among them.

In our study, we observed that adolescents who had no formal education had

four times increased odds of engaging in risky behaviors as compared to the adolescents who were not students. This finding agrees with what has been documented in previous studies. (39,40) This may not be surprising because having a formal education is expected to enlighten and equip adolescents making them less vulnerable to risky behaviors.

Religiosity was assessed by asking the participants about the frequency of their attendance at religious programs. There could, therefore, have been over or under-reporting. Also, the cross-sectional nature of this study does not allow the assessment of temporal relationships between religiosity and high-risk behavior among adolescents. Future research direction for this subject may therefore include prospective or follow-up studies to assess the relationship between these two variables. Future research may also consider gender-based differences in the association between religiosity and high-risk behaviors among adolescents.

Conclusion

This study found that adolescents who were highly religious engaged in less risky behaviors. Furthermore, participants who were in their early or mid-adolescence and those who were students also engaged less in risky behaviors. There is therefore a need for intervention in the context of health education to improve awareness, particularly of adolescents who are more likely to engage in risky behaviors. Policies that support the education of adolescents should be enforced and opportunities should be provided for more adolescents that are living with HIV to enroll in school. Furthermore, there is a need to engage religious organizations and leaders in HIV care. Evidence has shown that the role of religiosity/spirituality in the fight against HIV/AIDS cannot be over-emphasized.

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