

# HIV-Related Knowledge and Attitude among Dental Patients Attending a Nigerian Teaching Hospital

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## INTRODUCTION

Nigeria ranked 4<sup>th</sup> position in global Human Immunodeficiency Virus (HIV) prevalence rate, is home to 1.9 million People Living With HIV/AIDS (PLWHA). HIV prevalence among Nigerian adults aged 15-49 years has decreased to 1.4% with ultimate goal of ending the Acquired Immune Deficiency Syndrome (AIDS) epidemic by 2030.<sup>1</sup>

## ABSTRACT

**Objective:** To examine the HIV-related knowledge and attitude among dental patients attending a Nigerian teaching hospital.

**Methods:** This questionnaire based cross-sectional study among dental patients University of Benin Teaching Hospital, Benin City was conducted between August, 2016 and October, 2017.

**Results:** Three-quarters (73.1%) of the participants had poor HIV knowledge. Participants less and equal to 20 years, males and never married participants had poorer HIV knowledge. Most of the participants had favourable attitude (66.9%) towards HIV. Most of the participants that were more religious had favourable attitude towards HIV.

**Conclusion:** This study revealed that majority of the participants had poor HIV-related knowledge and a minority of the participants exhibited negative/intermediate attitude towards People Living with HIV/AIDS (PLWHA). There is a need to activate HIV-related education and promotion in the dental clinic setting. Efforts at improving religious attendances may be necessary to help reduce negative/intermediate attitude towards PLWHA.

**Keywords:** attitude, dental patients, HIV/AIDS, knowledge

Although this decrease in the national HIV prevalence is acknowledged, the South-South geopolitical zone where Edo state is located, still has the highest HIV prevalence at 3.1%. Edo state is ranked tenth in the prevalence of HIV among the 36 states and federal capital territory (FCT) that make up Nigeria. The prevalence of HIV is expected to have decreased to below the national average with further

improvement of HIV-related knowledge and attitude. Although, studies revealed electronic media as the main mode of information dissemination on HIV/AIDS.<sup>2-5</sup> but such information, education and communication are limited by epileptic power supply in Nigeria. The opportunity to access HIV-related information from health care providers is also limited because the preference of symptomatic healthcare attendance to preventive healthcare attendance among Nigerians. Few studies<sup>5,6</sup> on HIV related issues have been conducted among dental patients despite the established diversity of dental patients in terms of age, sex, residence, ethnicity, religion, educational attainment, socioeconomic status, health status because of the varied risk for oral diseases. The young adults and females that are the most common dental clinic attendees are the identified groups with higher HIV prevalence further substantiates the need for HIV-related knowledge and attitude study among dental patients.<sup>3</sup> The objective of the study was to examine the HIV-related knowledge and attitude among dental patients attending a Nigerian teaching hospital.

#### MATERIALS AND METHODS

This cross-sectional study was conducted among 160 dental patients attending University of Benin Teaching Hospital, Benin City between August, 2016 and October, 2017. Informed consent was obtained from the participants. An interviewer-administered questionnaire which elicited information on demographic characteristics, HIV-related knowledge and attitude was the data collection tool. Demographic characteristics of the participants assessed include age, gender, monthly income, Religiosity, dental visit history, awareness of someone who has or is suspected of having HIV/AIDS. HIV-related knowledge was assessed using twenty questions. A score of 1 was given to every correct answer and 0 for every incorrect answer. The minimum score is 0 and the maximum score is 20. high scores indicated good knowledge while low score indicated poor knowledge. The grading of HIV-related knowledge was 0-6=poor., 7-13=fair and 14-20=good. HIV-related attitude was assessed with sixteen questions. A score of 3 was given for "disagree", 2 for "not sure" and 1 for

"agree". This gave a minimum of 16 and a maximum score of 48. The grading of attitude was 16-27=negative, 28-38= Intermediate, 39-48=positive. Monthly income earning power among the participants was categorized as low (<50,000naira), Medium (50,000-100,000 naira) and High (100,000 naira) status based on self-reported monthly income. Participants that attend church or mosques for activities or prayers rarely or once a month were categorized as being less religious while those that attend at least once weekly or biweekly were categorized as more religious. The obtained data was subjected to univariate analysis in form of frequencies, percentages and means and bivariate analysis in form of cross-tabulations using IBM SPSS version 20.0 (IBM Corp, Armonk, NY). The test for significance was done with Chi-square statistics and statistical significance was set at  $p < 0.05$ .

#### RESULTS

The majority of the participants were aged 21 to 30 years (56.9%), females (55.6%), single (80.0%) and low monthly income earners (71.3%), Students (56.9%), more religious and unaware of someone having HIV (75.0%) (Table 1). HIV transmission through contaminated syringes (95.0%), blood transfusion (97.5%), premarital sex (65.6%), maternal transmission (70.6%), breastfeeding (65.0%) were reported by the participants. Participants reported that HIV cannot be transmitted by shaking hands (71.9%), sharing a meal (70.6%), kissing/hugging (54.4%), Coughing/sneezing (74.4%), public telephone (65.0%) public toilet (61.3%), swimming pool (66.3%), mosquito or other insect bites (67.5%). A total of 93.8% and 96.3% of the participants reported that HIV is a sexually transmitted infection and that healthy-looking individuals can be living with HIV respectively. In term of prevention of HIV transmission, participants reported that people can protect themselves from contracting HIV by using condoms (84.4%), having sex with only one uninfected partner can prevent HIV (68.1%), washing genitals/private parts after sex can keep a person from getting HIV (5.0%) and taking antibiotics can prevent one from contracting HIV (8.8%) (Table 2).

Table 1: Demographic characteristics of the participants

Characteristics	Frequency (n)	Percent (%)
<b>Age (years)</b>		
≤21	32	20.0
21-30	91	56.9
>30	37	23.1
<b>Gender</b>		
Male	71	44.4
Female	89	55.6
<b>Marital status</b>		
Single	128	80.0
Married	32	20.0
<b>Monthly income status</b>		
Low	136	85.0
Medium	15	9.4
High	9	5.6
<b>Religiosity</b>		
Less	31	19.4
More	129	80.6
<b>Dental history</b>		
First visit	80	50.0
Previous visit	80	50.0
<b>Do you know someone who has or is suspected of having HIV?</b>		
Yes	40	25
No	120	75
Total	160	100.0

About three-quarters (73.1%) of the participants had poor HIV-related knowledge. Participants aged 20 years or less (81.3%), males (80.3%), single (73.4%), medium monthly income earners (93.3%), more religious (75.5%), previous dental attendees (73.8%), participants that know someone who has or is suspected of having HIV (77.5%) had poorer HIV knowledge. The demographic characteristics are not significantly associated with HIV knowledge (Table 3).

About one-third (38.8%) of the participants would want it to remain secret if a family member becomes infected with HIV and 49.4% of the participants do not mind if a member of their family is a friend with HIV infected person. A total of 16.3% of the participants would not share a house with a person who has HIV, 18.1% of them would not invite someone with HIV to social occasions like birthday or marriage and only 7.7% of the participants would allow someone with HIV to their house. About one-quarter (25.6%) of the participants would not go to a restaurant if they knew that the owner has HIV and 26.3% of the participants would not buy vegetables from a seller that has HIV. A total of 13.8% of the participants were not willing

to share a meal with someone with HIV, 40.6% of them would not drink from the same bottle of water with an HIV positive relative. One-tenth (10.0%) of the participants reported that a teacher with HIV should not be allowed to continue teaching, 8.1% of the participants opined that a student with HIV should not be allowed to continue going to school. A total of 15.6% of the participants would not allow their child/children to attend school with an HIV infected child, 5.6% of the participants would not work with a colleague who has HIV and 13.1% of them would not maintain friendship with a friend that became infected with HIV. About one-quarter (25.6%) of the participants would be ashamed if someone in their family has HIV and only 6.3% of the participants would not be willing to care for a relative that became sick with HIV (Table 4).

A total of 39.4% of the participants reported negative/intermediate attitudes toward PLWHA. Less religious participants significantly reported more negative/intermediate attitudes toward PLWHA than their more religious counterparts ( $P = 0.023$ ) (Table 5).

Table 2: HIV-related knowledge among the participants.

Statement	True n (%)	False n (%)	I don't know n (%)
HIV can be transmitted through contaminated syringes	152 (95.0)	8 (5.0)	0 (0.0)
HIV can be transmitted by blood transfusion	156 (97.5)	3 (1.9)	1 (0.6)
Sex before marriage can lead to HIV	105 (65.6)	38 (23.8)	17(10.6)
A pregnant woman can transmit HIV to her baby.	113 (70.6)	30 (18.8)	17(10.6)
HIV can be transmitted to a child through breastfeeding.	104 (65.0)	19 (11.9)	37(23.1)
HIV cannot be transmitted through shaking hands.	115 (71.9)	44 (27.5)	1 (0.6)
HIV cannot be transmitted by sharing a meal with someone with HIV.	113 (70.6)	34 (21.3)	13 (8.1)
HIV cannot be transmitted through kissing/hugging someone with HIV	87 (54.4)	50 (31.3)	23(14.4)
Coughing and sneezing do not spread HIV.	119 (74.4)	23 (14.4)	18(11.3)
HIV cannot be transmitted by sharing a public telephone	104 (65.0)	49 (30.6)	7 (4.4)
HIV cannot be transmitted by using a public toilet	98 (61.3)	35 (21.9)	27(16.9)
HIV cannot be transmitted by swimming in a public pool.	106 (66.3)	38 (23.8)	16(10.0)
HIV cannot be transmitted through mosquito or other insect bites.	108 (67.5)	40 (25.0)	12 (7.5)
HIV is a sexually transmitted infection.	150 (93.8)	6 (3.8)	4 (2.8)
HIV testing before marriage decreases the spread of the disease.	138 (86.3)	14 (8.8)	8 (5.0)
Healthy-looking individuals can be living with HIV.	154 (96.3)	3 (1.9)	3 (1.9)
People can protect themselves from contracting HIV by using condoms.	135 (84.4)	17 (10.6)	8 (5.0)
Sex with only one uninfected partner can prevent HIV.	109 (68.1)	33 (20.6)	18(11.3)
Washing genitals/private parts after sex keeps a person from getting HIV	8 (5.0)	113(70.6)	39(24.4)
A person will not get HIV if she or he is taking antibiotics.	11(8.8)	105(65.6)	41(25.6)

## DISCUSSION

The availability of a wide range of preventive and curative oral health services in dental clinic uniquely attracts diverse patients and makes it, a veritable venue for HIV-related studies. The result from this study showed that about three-quarter of the participants had poor HIV-related knowledge. This may be related to the fact that some dental patients may not have accessed any other healthcare services<sup>7,8</sup> or have little contact with HIV related information. This indicates a need for sustained efforts in HIV awareness and enlightenment campaign and expanding such to cover dental healthcare settings. Participants aged 20 years or less (81.3%) reported more poor HIV related knowledge which may be due to non-intensification of the HIV campaign leading to younger individuals being more ignorant.

Previous study among Nigerian Army similarly reported that younger participants were less knowledgeable about HIV/AIDS than older participants.<sup>9</sup> The cultural inhibition of sexual health discussion in Nigerian households among parents and offspring may contribute to poor HIV related knowledge among younger participants.<sup>10</sup> Males, never married and low/medium income earning participants, who may indulge more in risk related behaviours reported poorer knowledge which calls for interventions to further enlighten dental patients on the definite means through which HIV is transmitted and prevented to correct their impression. The participants that have previously visited the dentist reported more poor HIV related knowledge which may signify non likelihood of transfer of HIV-related knowledge in Dental clinic.

Table 3: Association between demographic characteristics and HIV knowledge among the participants

Characteristics	Poor n (%)	Fair/good n (%)	P-value
<b>Age (years)</b>			0.136
<21	26 (81.3)	6 (18.8)	
21-30	61 (67.0)	30 (33.0)	
>30	30 (81.1)	7 (18.9)	
<b>Gender</b>			0.068
Male	57 (80.3)	14 (19.7)	
Female	60 (67.4)	29 (32.6)	
<b>Marital status</b>			0.858
Single	94 (73.4)	34 (26.6)	
Married	23 (71.9)	9 (28.1)	
<b>Monthly income status</b>			0.193
Low	96 (70.6)	40 (29.4)	
Medium	14 (93.3)	1 (6.7)	
High	7 (77.8)	2 (22.2)	
<b>Religiosity</b>			0.076
Less	12 (57.1)	9 (42.9)	
More	105 (75.5)	34 (24.5)	
<b>Dental history</b>			0.858
First visit	58 (72.5)	22 (27.5)	
Previous visit	59 (73.8)	21 (26.3)	
<b>Do you know someone who has or is suspected of having HIV?</b>			0.471
Yes	31 (77.5)	9 (22.5)	
No	86 (71.7)	34 (28.3)	
Total	117 (73.1)	43 (26.9)	

HIV infection occurs through sexual contact with infected people, mother to child transmission, blood transfusion and organ transplant, dental/medical accidents and use of medical/dental equipment and instruments that are not well sterilized.<sup>11</sup>The reported knowledge of HIV transmission through blood transfusion (97.5%) and contaminated syringes (95.0%) were higher than mother to child transmission (70.6%), unprotected sex (65.6%) and breastfeeding (65.0%). It is surprising however that majority (93.8%) of the participants correctly reported HIV as a sexually transmitted infection even when they rated premarital sex, low in the mode of HIV transmission. Despite the fact that unprotected heterosexual sex accounts for 80% of new HIV infections in Nigeria.<sup>12</sup> This may be related to the fact that the majority of the participants were not

married yet and may have indulged in such behaviour though not assessed in this study. However, reports of high identification of HIV transmission through sex, blood transfusion, and contaminated syringes exist in literature among Nigerian barbers<sup>2</sup>, dental patients<sup>6</sup> and Pakistan female college students.<sup>13</sup>The washing genitals/private parts after sex keeps a person from getting HIV and taking antibiotics can prevent one from contracting HIV reported by a few participants were indicators of erroneous consideration of HIV/AIDS as a hygiene deficient and/or antibiotics disease. Similar erroneous considerations about HIV infection were also noted in the description of the infection as harmless, self-limiting and antibiotic responsive infection among the Nigerian dental therapy and technology students.<sup>14,15</sup>

Table 4: HIV-related attitude among the participants

Statement	Agree n (%)	Not sure n (%)	Disagree n (%)
I would want it to remain secret if a family member becomes infected with HIV.	62 (38.8)	64 (40.0)	34 (21.3)
I do mind if a member of my family is a friend with HIV positive person.	79 (49.4)	37 (23.1)	44 (27.5)
I would not share a house with a person who has HIV.	26 (16.3)	36 (22.5)	98 (61.3)
I would not invite someone with HIV to social occasion like birthday or marriage.	29 (18.1)	36 (22.5)	95 (59.4)
I will not allow someone with HIV to my house.	125(78.1)	22 (13.1)	13 (7.7)
I would not go to a restaurant if knew that the owner has HIV.	41 (25.6)	33 (20.6)	86 (53.8)
I would not buy vegetables from a seller that has HIV.	42 (26.3)	34 (21.3)	84 (52.5)
I am not willing to share a meal with someone with HIV.	22 (13.8)	36 (22.5)	102 (63.8)
I would not drink from the same bottle of water as HIV positive relative.	65 (40.6)	53 (31.5)	42 (25.0)
A teacher with HIV should not be allowed to continue teaching.	16 (10.0)	17 (10.6)	127 (75.6)
A student with HIV should not be allowed to continue going to school.	13 (8.1)	18 (11.3)	129 (80.6)
I would not allow my child to attend school with HIV positive child.	25 (15.6)	28 (17.5)	107 (66.9)
I would not work with a colleague who has HIV.	9 (5.6)	22 (13.8)	129 (80.6)
I will not maintain friendship if a friend become infected with HIV.	21 (13.1)	25 (15.6)	114 (71.3)
I would be ashamed if someone in my family have HIV.	41 (25.6)	41 (25.6)	78 (48.8)
If a relative of mine became sick with HIV, I would not be willing to care for the person	<b>10 (6.3)</b>	<b>21 (13.1)</b>	<b>129 (80.6)</b>

The erroneous labeling of HIV/AIDS as contagious, airborne or waterborne diseases may have resulted in misconceived transmission through shaking hands, sharing a meal, kissing/hugging, coughing/sneezing, sharing public telephone, public toilet or swimming pool and mosquito or other insect bites among the participants. Misconceptions about routes of HIV transmission have been similarly reported among barbers by *Adesoro et al.*<sup>2</sup>, secondary school adolescent by *Bamise et al.*<sup>3</sup>, automobile repair workers by *Omokhodion et al.*<sup>4</sup>, dental patients by *Opeodu and Ogunrinde.*<sup>6</sup>, and journalists by *Isibor and Ajuwon.*<sup>16</sup> The general understanding, knowledge of mode of transmission and prevention of HIV infection was considered low and burdened with a lot of misconceptions which is a major driver of HIV-related stigmatization and discrimination.

The knowledge of condom use as HIV/AIDS preventive measure was reported by 84.4% of the participants in this study which is similar to 87% Nigerian automobile repair workers<sup>4</sup> but lower than 49.3% reported among Pakistan female college students.<sup>12</sup> Furthermore, about two-thirds of the participants in this study reported that people can protect themselves from HIV by having sex with only

one uninfected partner. This may be because the HIV prevention awareness campaign in Nigeria was built on the 'ABC tripod'; Abstinence, Be faithful and use of Condom.

When People living with HIV/AIDS (PLWHA) are virally suppressed, they remain healthy and transmission of the virus is prevented.<sup>1</sup> This may have led 96.3% of the participants to report that healthy-looking individuals can be living with HIV.

The fear of sanctions being bestowed on family which will impede their chance of success and survival in the community may have engineered about one-third (38.8%) of the participants to report that they would want it to remain secret if a family member becomes infected with HIV. Secrecy and denial about HIV status which form catalysts for HIV transmission may therefore be a well-intentioned, ignorant attempt to preserve the family.<sup>17</sup> About one-quarter (25.6%) of the participants reported that they would be ashamed if someone in their family have HIV and such expressed feeling of shame may be the reason why non-disclosure of HIV status are encouraged by relative of PLWHA as disclosure of HIV status may greatly affect the social standing of their family and also members of the family.

Table 5: Association between demographic characteristics and HIV attitude among the participants

Characteristics	Negative/intermediate n (%)	Positive n (%)	P-value
<b>Age (years)</b>			0.753
<21	11 (34.4)	21 (65.6)	
21-30	36 (39.6)	55 (60.4)	
>30	16 (43.2)	21 (56.8)	
<b>Gender</b>			0.188
Male	32 (45.1)	39 (54.9)	
Female	31 (34.8)	58 (65.2)	
<b>Marital Status</b>			0.332
Single	48 (37.5)	80 (62.5)	
Married	15 (46.9)	17 (53.1)	
<b>Monthly income status</b>			0.059
Low	51 (37.5)	85 (62.5)	
Medium	10 (66.7)	5 (33.3)	
High	2 (22.2)	7 (77.8)	
<b>Religiosity</b>			0.023
Less	13 (61.9)	8 (38.1)	
More	50 (36.0)	89 (64.0)	
<b>Dental history</b>			0.625
First visit	30 (37.5)	50 (62.5)	
Previous visit	33 (41.3)	47 (58.8)	
<b>Do you know someone who has or is suspected of having HIV?</b>			0.161
Yes	12 (30.0)	28 (70.0)	
No	51 (42.5)	69 (57.5)	
<b>HIV knowledge</b>			0.696
Poor	45 (38.5)	72 (61.5)	
Fair/good	18 (41.9)	25 (58.1)	
<b>Total</b>	<b>63 (39.4)</b>	<b>97 (60.6)</b>	

In this study, it is only 6.3% of the participants that would not be willing to care for a HIV positive relative which is lower than 11% reported unwillingness to care for a family member with HIV/AIDS in a Botswanan study.<sup>18</sup>The cultural values of families being responsible for the care of ill members may be responsible for increased willingness to care for an infected relative. The willingness to care may possibly be a way to maintain family secret of the presence of HIV infected family member.

Accepting PLWHA into our circle of friends, offering them, support and understanding will depend on understanding and personalized feelings towards of HIV/AIDS as a disease and It is easier to judge and condemn PLWHA than it is to reach out with understanding and acceptance. Hence, distancing reactions and discriminatory practices towards

PLWHA was observed among the participants as 13.1% of the participants would not maintain friendship with friend that become infected with HIV and 49.4% of the participants would mind if a member of their family is a friend with HIV positive person.

Low level of acceptance and high level of rejection towards PLWHA were reported as 13.8% of the participants were not willing to share a meal with someone with HIV, 40.6% would not drink from the same bottle of water as HIV positive relative. Similar rejections though higher, has been reported in a Household Survey in South Africa.<sup>19</sup> This may be attributed to overall low level of HIV related knowledge

A total of 16.3% of the participants would not share a house with a person who has HIV, 18.1% of them

would not invite someone with HIV to social occasion like birthday or marriage and 78.1% of the participants would not allow someone with HIV to their house. This clearly indicates that social activities of PLWHA will be limited and may consequently lead to isolation, depression and suicidal tendencies.

About one-quarter (25.6%) of the participants would not go to a restaurant if knew that the owner has HIV and 26.3% would not buy vegetables from a seller that has HIV. Similar negative attitude has been reported in Botswana and Uganda and this can devastate chances of economic survival of people living with HIV/AIDS.<sup>18,20</sup> People refusal to trade with PLWHA may trigger the adoption of certain coping mechanisms like concealing HIV status as a survival strategy.<sup>21</sup>

There exists in the literature, enormous negative impact of HIV/AIDS on different levels of education.<sup>22-24</sup> In this study, one tenth (10.0%) of the participants reported that a teacher with HIV should not be allowed to continue teaching, 8.1% of the participants reported that a student with HIV should not be allowed to continue school and 15.6% of the participants would not allow my child to attend school with HIV positive child. These attitudes show that PLWHA experience a number of undesirable conditions in their life which include denial of gainful employment, forced resignation or early retirement.<sup>25,26</sup>

More than one-third of the participants exhibited negative/intermediate attitude towards PLWHA. However, it was religiosity that was significantly associated with HIV-related attitude as the less religious participants showed more negative/intermediate attitude towards HIV indicating that people who are less religious are less tolerant of people with HIV by being more judgmental.

## CONCLUSION

This study revealed that majority of the participants had poor HIV-related knowledge and a minority of the participants exhibited negative/intermediate attitude towards PLWHA. There is a need to activate HIV-related education and promotion in the dental clinic setting. Efforts at improving religious attendances may be necessary to help reduce negative/intermediate attitude towards PLWHA.

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