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Original Article

Influence of Socio-Demographic Variables on the Knowledge of Health Consequences of HIV/AIDS Among Tertiary School Students in Minna, Nigeria

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ARTICLE INFO	ABSTRACT
 Corresponding Author Adegor, E.C. Department of Public Health Science, Faculty of Health Sciences, National Open University of Nigeria (NOUN) *Phone Number:* +2349030317315 *Email:* eseadegor@yahoo.com	**Introduction**: Among countries with the highest number of People Living with HIV globally, Nigeria is ranked in the third position. Adequate information about the knowledge of HIV/AIDS is therefore important. This study investigated the influence of socio-demographic variables on the knowledge of health consequences of HIV/AIDS among tertiary school students in Minna. **Method:** A multi-stage random, sampling technique was used to select 350 students of the College of Education, Minna. Socio-demographic data and knowledge on HIV/AIDS were obtained using self-structured questionnaires, and were analysed using SPSS version 22. **Results:** 46.3% of students were within the age range of 21-25 years. There was a significant difference in knowledge about the health consequences of HIV/AIDS between male and female students of the College of Education. **Conclusion:** The students had significant knowledge of the health consequences of HIV/AIDS.

Introduction

In 1981, the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) were first identified among homosexuals living in the United States of America (USA). Its rapid spread globally has led to it been a global health challenge (Fana, 2018). Globally, deaths associated with AIDS-related illnesses were estimated at 770,000 (UNAIDS, 2019). Niger state, situated in the north-central geopolitical zone of Nigeria, with Minna as its capital city, is located in a region that has the second highest HIV prevalence in Nigeria (NIIS, 2019). It is estimated that around two-thirds of new HIV infections in West and Central Africa in 2017 occurred in Nigeria (UNAIDS, 2018)

In Nigeria, there is a wide spread of HIV/AIDS among young adults, particularly those in the productive years, thus becoming a major public health concern (Abiodun,2014; Awofala and Ogundele, 2016). In many countries, sexually transmitted diseases (STD) and unplanned pregnancies are common place among adolescents, and a lack of proper knowledge and risky practices are major hindrances in curtailing the spread of HIV. According to Oluyemi *et al.* (2015) the high prevalence can be attributed to poor knowledge of the disease and the beliefs attached to it as a result of insufficient and inadequate information available to the teeming population from various quarters, especially adolescents who are sexually active. Adolescence is a vulnerable stage of human

development characterized by experimentations and risk-taking (Fatiregun, 2014). Thus, HIV-positive adolescents by virtue of their position are prone to dangerous behaviors including risk-taking for HIV transmission. With the conception of high prevalence of rate of HIV/AIDS among students of tertiary institutions in Nigeria, one is left wondering if the students are aware of the disease and if various campaigns on HIV/AIDS have any impact on them (Adeleke *et al*., 2015; Alhasawi *et al,* 2019) Students give in easily to peer pressure, physical attractiveness. This study investigated therefore, the influence of socio-demographic variables on the knowledge of health consequences of HIV/AIDS among Tertiary school students in Minna, Nigeria

Materials and methods
Study design, Study area and Study population
A cross-sectional, descriptive study design was used as the study design. The study area was Minna, Niger state. Niger, a state in Central Nigeria, is the largest state in the country. The state capital is Minna, and other major cities are Bida, Kontagora, and Suleja. The tertiary institution used in the study was the College of Education. The College of Education, Minna was established as an advanced Teacher's College in 1975 and upgraded to the status of College of Education in 1983 by the then civilian government in the second republic. For the study population, only undergraduate students of the College of Education Minna, Niger State were used. Only students were 16 years and above were included in this study.
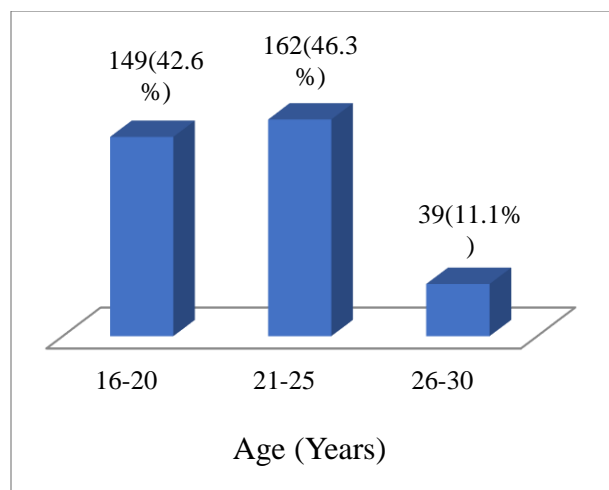
Results

Figure 1: Bar Graph Distribution of the Respondents by Age

Determination of sample size
The sample size was determined using the formula by Taherdoost, 2016. A sample size of 347.5915 was calculated, and approximated to 350 students for this study.

Sampling technique and procedure
The students used were selected using multi stage sampling technique. There are six schools in the college and 32 departments in the College of Education**.** Stage one: All the six schools in College of Education Minna were selected; Stage two: 50% of the departments in each school were selected using simple random sampling; Stage three**:** 5% of the number of students in each department were selected to get the students that took part in this study.

Data collection and analysis
Data were collected using self-administered structured questionnaires three times a week during school hours. Data were analysed using SPSS software. ANOVA and Student's T-test were used to establish relationships between socio-demographic variables and knowledge about health consequences of HIV/AIDS among students. P value <0.05 was considered significant.

Ethical Approval
Ethical approval for this study was given by the Registrar of the Niger State College of Education, Minna. The students were also given information forms acquainting them with the procedure of the study.
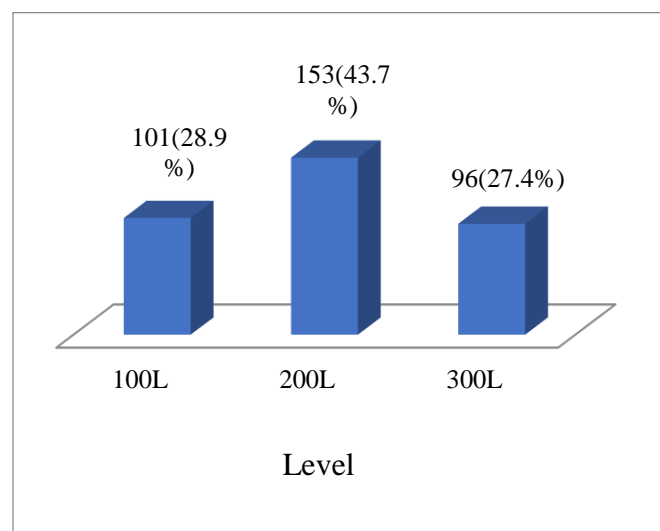

Figure 2: Bar Graph Distribution of Respondents by Level

Table 1: Socio-demographic characteristics of the Respondents

Variables	Frequency	Percentage (%)
Gender		
Male	157	44.9
Female	193	55.1
Total	350	100.0
Marital Status		
Single	321	91.7
Married	29	8.3
Divorce	0	0.0
Total	350	100.0
Religion		
Christianity	113	32.3
Muslim	237	67.7
Others	0	0.0
Total	350	100.0

Table 2: ANOVA of Respondents' Age and Knowledge about Health Consequences of HIV/AIDS

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	488.897	6	81.483	17.068	.000
Residual	1642.394	344	4.774		
Total	2131.291	350			

(a) Predictors: (Constant), 16-20, 21-25, 26-30 (b) Dependent variable: Knowledge on Health Consequences of HIV R = 0.453, $R^2 = 0$.205; **Adj. $R^2 = 0$**.190; $P < 0.05$.

From Table 2 above, an R-square value of .453 showed that 20.5% variation in respondents' knowledge about health consequences of HIV/AIDS was due to their ages. F-statistics were carried out to find the overall strength of the model. The value of F-statistics 17.068 showed that undergraduates are significantly knowledgeable about health consequences of HIV/AIDS as regards their ages.

Table 3: ANOVA of Respondents' Level and Knowledge about Health Consequences of HIV/AIDS.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	513.947	6	85.658	18.661	.000
Residual	1579.038	344	4.590		
Total	2092.985	350			

(a) Predictors: (Constant) 100L, 200L, 300L (b) Dependent variable: Knowledge on Health Consequences of HIV. R = 0.512, $R^2 = 0$.262; **Adj. $R^2 = 0$**.245; $P < 0.05$.

From Table 3 above, an R-square value of .262 showed that 26.2% variation in respondents' knowledge about health consequences of HIV/AIDS was due to their level. F-statistics were carried out to find the overall strength of the model. The value of F-statistics 18.661 showed that undergraduates are significantly knowledgeable about health consequences of HIV/AIDS as regards their level in the institution.

Table 4: ANOVA of Respondents' Age on Peer-Pressure Influence and Undergraduates' Sexual Behaviour.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	379.138	6	62.690	18.444	.000*
Residual	1169.417	344	3.399		
Total	1548.555	350			

(a) Predictors: (Constant), 16-20, 21-25, 26-30 (b) Dependent variable: Undergraduates' Sexual Behaviour R = 0.511, $R^2 = 0$.261; **Adj. $R^2 = 0$**.246; $P < 0.05$.

From Table 4 above, an R-square value of .261 showed that 26.1% variation in respondents' peer pressure influence and undergraduates' sexual behaviour was due to their ages. F-statistics were carried out to find the overall strength of the model. The value of F-statistics 18.444 showed that there is a relationship between age on peer pressure influence and undergraduates' sexual behaviour.

Table 5: ANOVA of Respondents' Level on Peer Pressure and Undergraduates' Sexual Behaviour.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	397.462	6	66.244	13.999	.000
Residual	1627.794	344	4.732		
Total	2092.985	350			

(a) Predictors: (Constant), 100L, 200L, 300L (b) Dependent variable: Peer Pressure on Sexual Behaviour
$R = 0.496$, $R^2 = 0.246$; **Adj. R^2 = 0.232**; $P < .05$.

From Table 5 above, an R-square value of .246 showed that 24.6% variation in respondents' level on peer pressure and undergraduates' sexual behaviour was due to their academic level. F-statistics were carried out to find the overall strength of the model. The value of F-statistics 13.999 shows that there is a relationship between undergraduates' level on peer pressure and sexual behaviour

Table 6: Overall Knowledge about Health Consequences of HIV/AIDS

Undergraduate's Age	Score (%)	F-stat	P-value
16-20	53.82	21.19	.000*
21-25	69.73		
26-30	72.09		
Average Score	65.21		

Table 7: T-test Analysis of Gender and Knowledge about Health Consequences of HIV/AIDS

Gender	N	X	S.D	Calculated t-value	Critical t-value	P Sig. (2-tailed)	Decision
Male	157	38.59	9.71	36.08	1.96	0.001	Reject
Female	193	49.21	11.59				H_0

*P < 0.05

Table 7 shows the t-test analysis between male and female respondents on knowledge about health consequences of HIV/AIDS. The calculated t-value is 36.08 which is higher than the critical t-value of 1.96 (36.08 > 1.96). Also, the observed probability is 0.001 and this is less than 0.05 (P <0.05) probabilities for a 2-tailed test. Hence, the null hypothesis is thereby rejected. This means there is a significant difference in knowledge about health consequences of HIV/AIDS between male and female undergraduate students of College of Education Minna, Niger state.

Table 8: T-test Analysis of Respondents' Marital Status and Knowledge about Health Consequences of HIV/AIDS

Gender	N	X	S.D	Calculated t-value	Critical t-value	P Sig. (2-tailed)	Decision
Single	321	44.09	6.49	41.49	1.96	0.00*	Reject
Married	29	62.12	8.55				H_0

*P < 0.05

Table 8 indicates a significant difference between undergraduates' marital status and knowledge about health consequences of HIV/AIDS in favour of married undergraduates ($t_{cal} > t_{crit}$). Therefore, the null hypothesis is rejected.

Table 9: T-test Analysis of Respondents' Religion and Knowledge about Health Consequences of HIV/AIDS

Gender	N	X	S.D	Calculated t-value	Critical t-value	P Sig. (2-tailed)	Decision
Christian	113	37.27	7.92	39.12	1.96	0.003*	Reject
Muslim	237	25.03	6.85				H_0

From Table 9 above, the results indicate higher mean score recorded on knowledge about health consequences of HIV/AIDS of Christian students (X = 37.27) than that of the Muslim students (X = 25.03), the calculated t-value (39.12) is higher than the critical t-value at 0.05 level of significance (1.96). Thus, the null hypothesis is rejected. This implies that both religions had knowledge about health consequences of HIV/AIDS. The variation that occurred may be due to the religion belief of some undergraduate students of College of Education Minna, Niger state.

Table 10: T-test Analysis between Undergraduates' Marital Status on Peer Pressure and Sexual Behaviour

Class	N	X̄	S.D	Calculated t-value	Critical t-value	P Sig. (2-tailed)	Decision
Single	321	28.24	7.46	88.41	1.96	0.000	Reject
Married	29	19.37	5.13				H_0

*p < 0.05

Table 10 above shows the t-test statistical procedure of undergraduates' marital status on peer pressure and sexual behavior. The calculated t-value of 88.41 is greater than the critical t-value of 1.96. Also, the observed probability of 0.000 is less than 0.05 probabilities for a 2-tailed test. Hence, the null hypothesis is rejected, implying that there is a significant relationship between undergraduates' marital status on peer pressure and undergraduates' sexual behaviour. The difference that occurs in the mean score indicating that undergraduates that are not yet married are being influenced by peer pressure than the married undergraduates.

Table 11: T-test Analysis between Undergraduates' Religion on Peer Pressure and Sexual Behaviour

Class	N	X̄	S.D	Calculated t-value	Critical t-value	P Sig. (2-tailed)	Decision
Single	113	25.68	5.72	109.76	1.96	0.001	Reject
Married	237	22.29	4.67				H_0

*p < 0.05

Table 11 above shows the t-test statistical procedure of undergraduates' religion on peer pressure and sexual behavior. The calculated t-value of 109.76 is greater than the critical t-value of 1.96. Also, the observed probability of 0.001 is less than 0.05 probabilities for a 2-tailed test. Hence, the null hypothesis is rejected. This implies that there is significance in relationship between undergraduates' religion on peer pressure and undergraduates' sexual behaviour. The difference that occurs in the mean values may be due to undergraduates' religious belief.

Discussion

In this study, 193(55.1%) respondents were female and 157(44.9%) respondents were male; their marital status distribution showed that the majority 321(91.7%) were married and only 29(8.3%) were single while religious distribution showed that 113(32.3%) were Christians and 237(67.7%) were Muslims. In the age distribution, 21-25 years old had the highest population 162(46.3%) followed by 16-20 age group 149(42.6%) with the lowest being 26-30 age group 39(11.1%). The distribution by level showed majority of the respondents were in 200L 153(43.7%), 101(28.9%) of respondents were in 100L and 96 (27.4%) of the respondents were in 300L.

The modal age in this study was 21-25 years old (46.3%). A study by Anetor (2019) on the influence of gender and demographic variables on awareness of secondary school students on HIV/AIDS Infection showed that students between 16-17 years showed a knowledge score of 63.89%, and students above 18

years had a knowledge score of 87.51%, with an average knowledgeable score of 62.72%. It revealed that the students' knowledge increased with age classification. Abiodun *et al.*, 2014 in a study on the knowledge of HIV/AIDS and testing among undergraduates revealed that willingness to HIV testing was associated with increasing age, from 21 years and having good knowledge of HIV.

The average score of 65.21% on the overall knowledge of health consequences of HIV/AIDS reveals that undergraduate students of College of Education Minna had knowledge on health consequences of HIV/AIDS and F-statistics (21.19) carried out showed that undergraduates were significantly knowledgeable about health consequences of HIV/AIDS. In determining the influence of gender on knowledge about health consequences of HIV/AIDS, it was observed that the probability was 0.001 and this was less than 0.05 ($P < .05$) probability for a 2-tailed test. The null hypothesis was thereby rejected, showing that there is a significant difference in knowledge about health consequences of HIV/AIDS between male and female undergraduate students of College. Also the level of knowledge of health consequences of HIV/AIDS between married and single undergraduates showed significant difference in favour of married undergraduates ($t_{cal} > t_{crit}$). Therefore, the null hypothesis was also rejected. This score is close in value from findings of Thanavanh *et al.,* 2013 in which in which 46.3 % had high knowledge, and 22.4 % had poor knowledge, indicating that our respondents had a better knowledge of HIV/AIDS. In contrast, Ugwuanyi, (2015) stated that when data was analysed, the result indicated that gender is not a significant factor that influences their awareness and behavior towards HIV and AIDS.

There was also a significant difference in knowledge about health consequences of HIV/AIDS between male and female undergraduate students, with the females being more knowledgeable, unlike in the study by Abiodun *et al.,*2014 that showed that males were more knowledgeable than females, although females were more willing to have an HIV test than males. This may explain the reason for our findings. The fact that females are not adverse to being tested would imply that they are more knowledgeable about the consequences of HIV/AIDS, and will want to know their HIV status.

The findings from the influence of peer pressure on students' attitude towards HIV prevention showed that the p- value was less than 0.05 and the null hypothesis was rejected (p=0.003). This showed a significant difference between the influence of peer pressure as regards. It implied that peer pressure significantly influenced undergraduates' knowledge and sexual behaviour. Though, the result indicated that female undergraduates are influence by peer pressure than their male counterpart.

In the T-test Analysis of Respondents' Religion and Knowledge about the Health Consequences of HIV/AIDS, the results showed that knowledge about health consequences of HIV/AIDS of Christian students is higher (X = 37.27) than that of the Muslim students (X = 25.03), the calculated t-value (39.12) is higher than the critical t-value at 0.05 level of significance (1.96)

The ANOVA carried out of Respondents' Level and Knowledge about Health Consequences of HIV/AIDS. Showed the F-statistics to be 18.661 and p value to be less than 0.05 the null hypothesis is also rejected. Which means the variation in respondents' knowledge about health consequences of HIV/AIDS was due to their level showing that undergraduates are significantly knowledgeable about health consequences of HIV/AIDS as regards their level in the institution. This is similar to the study by Huda and Amanullah (2013) which indicated that knowledge about HIV/AIDS was significantly associated with some socio-demographic variables, and the results indicated that older respondents ($\chi2 = 18.90$, $p < 0.01$) and male students ($\chi2 = 4.36$, $p < 0.01$) displayed higher level of knowledge about HIV/ AIDS. These associations were consistent with the study conducted by Uddin *et al.,* (2010). Anyamene, *et al.* (2011) showed that there was a significant difference in the knowledge of the adolescents about HIV/AIDS and their behavioural changes as regards HIV/AIDS.

Conclusion

It was deduced that the undergraduates had significant knowledge about HIV/AIDS and are aware of the different preventive measures and the health consequences of HIV/AIDS on their sexual behavior. However, the younger undergraduates are in a period of transition into sexual awareness and interest and this tends to increase the curiosity of sexual practices, thereby often causing some of them to experiment with different risky behaviours without considering the health consequences. The influence of peer pressure should not be overlooked. Adequate health education and proper counselling should be made available to undergraduates, especially in their first level of study.

Competing interests

The author declares there is no conflict of interests.

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