

AWARENESS OF THE CONSEQUENCES OF HIV/AIDS AND ITS IMPLICATIONS FOR CURRICULUM DEVELOPMENT IN NIGERIAN SECONDARY SCHOOLS

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Abstract

The study investigated the awareness of the consequences of HIV/AIDS and its implications for curriculum development in Nigerian secondary schools. Three research questions and a hypothesis guided the study. The design adopted for this study was analytical survey research design. The population of the study comprised 129,000 senior secondary school (II) students and 25,976 teachers from 1,098 public secondary schools in South-East, Nigeria. The sample comprised of 399 SSII students and 394 teachers from 113 public secondary schools, selected through stratified random sampling using multistage cluster sampling procedure. HIV/AIDS Awareness and Education Questionnaire (HAEQ), developed by the researcher was used for data collection. HAEQ was face validated. Face validity was established by three experts. The overall reliability index of 0.93 was obtained for HAEQ using the Cronbach's alpha method whereas. Descriptive statistics of mean and standard deviation were used to answer the research questions while the null hypothesis was tested using independent t-test at 0.05 level of significances. The findings of this study showed both students and teachers reported that there is a low extent to which secondary school students in Nigeria are aware of the consequences of HIV/AIDS. Also, both students and teachers reported high extent to which the exposure of students to HIV/AIDS education influences their preventive behaviours. More so, the study found that both students and teachers perceive the HIV/AIDS-related content in the Nigerian secondary school curriculum to be inadequate, with no significant difference in their view. These outcomes indicate the need for more comprehensive and effectively integrated HIV/AIDS education within Nigerian secondary schools. On this basis, it was recommended among others that the Federal and State Ministries of Education in Nigeria should strengthen the integration of HIV/AIDS education into the secondary school curriculum by providing more comprehensive and up-to-date content or awareness on the causes, consequences, prevention and management of the disease.

Keywords: Awareness, HIV/AIDS, curriculum development

Introduction

HIV/AIDS remains one of the most significant public health challenges globally, with far-reaching health, social, and economic consequences. Since its emergence, the Human Immunodeficiency Virus (HIV), which leads to Acquired Immunodeficiency Syndrome (AIDS), has continued to affect millions of people, particularly in sub-Saharan Africa, where the burden remains disproportionately high. In Nigeria, the epidemic persists as a major concern, especially among adolescents and young adults who constitute a vulnerable

population possibly due to increasing exposure to risky sexual behaviours, peer influence, inadequate access to accurate health information and poor integration of HIV/AIDS education in the secondary school curriculum. Swinkels et al. (2026) viewed Human Immunodeficiency Virus (HIV) as a chronic viral infection that attacks the immune system, weakening the body's ability to fight infections and diseases, and progressing over time if untreated. Merriam-Webster. (2026) defined it as a group of retroviruses that infect and destroy helper T cells of the immune system and, if untreated, lead to Acquired Immunodeficiency Syndrome (AIDS). AIDS is the advanced stage of HIV infection, marked by severe immune damage and vulnerability to opportunistic infections. It develops when HIV is untreated. Perhaps, this could be possibly due to lack of awareness or ignorance of the means of which HIV/AIDS is transmitted. Thus, understanding the transmission of HIV, the causative agent of AIDS, is central to controlling its spread and addressing persistent misconceptions in the society today.

HIV transmission occurs through specific biological pathways involving the exchange of infected body fluids principally blood, semen, vaginal fluids, rectal fluids and breast milk. A critical analysis of these transmission routes reveals that while the mechanisms are well established scientifically, social, cultural and behavioral factors significantly shape their prevalence and impact. Sexual transmission remains the most dominant route globally, particularly through unprotected vaginal and anal intercourse (Vento, 2025). The virus enters the bloodstream through mucosal membranes or microtears during sexual activity. Yamamoto et al. (2018) posited that this mode of transmission is closely linked to behavioral patterns such as multiple sexual partnerships, low condom use, and limited sexual health education. More so, in many communities, stigma and cultural taboos surrounding discussions of sexuality hinder effective prevention strategies, thereby sustaining high transmission rates.

Another significant means of HIV/AIDS transmission is through contact with infected blood. This includes transfusion of unscreened blood, use of contaminated medical equipment, and sharing of needles among individuals, particularly in contexts of intravenous drug use. Obeagu and Adias (2024) argued that even though improved screening technologies have reduced the risk associated with blood transfusions in many regions, lapses in healthcare systems, especially in resource-constrained settings, still pose a threat. Also, the sharing of sharp instruments, whether for medical, cosmetic, or traditional practices, contributes to transmission when sterilization protocols are inadequate (Wardani et al., 2017)

Mother-to-child transmission represents a critical pathway, occurring during pregnancy, childbirth or breastfeeding. Kassa (2018) maintained that without intervention, the risk of transmission from an infected mother to her child is significant. However, this route is highly preventable with proper medical care, including antiretroviral therapy and safe delivery practices. Mutabazi et al. (2017) stressed that the persistence of this transmission mode often reflects inequalities in access to maternal healthcare services rather than a lack of medical knowledge. It is equally important to clarify what does not constitute a means of HIV transmission. Casual contact such as hugging, handshakes, sharing utensils, or exposure to sweat and tears does not transmit the virus (Franjić, 2020). Misconceptions in this regard contribute to stigma and discrimination against people living with HIV/AIDS, which in turn discourages testing and treatment uptake. Consequently, this indirectly facilitates further spread of the virus. More importantly, the

transmission of HIV/AIDS cannot be understood solely as a biomedical issue. According Mark (2024), structural factors such as poverty, gender inequality, limited access to healthcare, and weak public health systems play a decisive role in shaping vulnerability. For instance, women in some societies may lack the power to negotiate safe sexual practices, increasing their risk of infection. Similarly, marginalized populations often face barriers to accessing preventive tools such as condoms, sterile needles, and testing services (Thalia, 2024). The means of HIV/AIDS transmission are scientifically clear but socially mediated. Sexual contact, blood exposure, and mother-to-child pathways remain the principal routes, yet their persistence is deeply tied to behavioral, cultural, and systemic factors. As a result, addressing transmission therefore requires not only biomedical interventions but also comprehensive social and educational strategies that tackle stigma, inequality, and access to healthcare and healthcare professionals, who could raise awareness of the means of HIV/AIDS prevention.

Preventing the transmission of Human Immunodeficiency Virus (HIV), the virus that leads to Acquired Immunodeficiency Syndrome (AIDS) requires a comprehensive approach that integrates biomedical, behavioral and structural strategies. While the scientific basis of prevention is well established, the effectiveness of these measures depends largely on how consistently they are applied within specific social, educational and economic contexts. Beksinska et al. (2020) posited that one of the most effective means of prevention is safe sexual practice, particularly consistent and correct condom use during vaginal and anal intercourse. This is because condoms act as a physical barrier that prevents the exchange of infected body fluids, thereby significantly reducing the risk of transmission. However, their effectiveness is often undermined by inconsistent use, cultural resistance, misinformation, and unequal power dynamics in relationships (Miller et al., 2020). Thus, promoting condom use must go beyond availability to include education, negotiation skills, and addressing gender inequalities that limit individuals' ability to insist on protection.

Another critical preventive measure is regular HIV testing and early initiation of antiretroviral therapy (ART). According to Cohen et al. (2016), ART is a treatment for HIV that uses a combination of medications to suppress viral replication, improve immune function, reduce transmission risk, and prolong the lives of infected individuals. Individuals who are aware of their HIV status are more likely to adopt safer behaviors. Moreover, effective ART can suppress the viral load in an infected person to undetectable levels, drastically reducing the likelihood of transmission, a concept widely summarized as Undetectable = Untransmittable (U=U) (Eisinger et al., 2019). Despite this, barriers such as stigma, fear of discrimination, and limited access to testing facilities continue to hinder widespread uptake of testing services, particularly in rural and underserved communities. Furthermore, Pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) represent significant biomedical advances in HIV prevention. PrEP involves the use of antiretroviral drugs by HIV-negative individuals at high risk to prevent infection, while PEP is used after potential exposure to reduce the chance of infection (Elliott et al., 2019). Although both strategies are highly effective when used correctly, their implementation is constrained by cost, awareness levels and accessibility, especially in low-resource settings.

Preventing blood-borne transmission is equally essential. This includes ensuring the safety of blood transfusions through rigorous screening, using sterile medical

equipment, and discouraging the sharing of needles or sharp objects. Uchechukwu (2016) stressed that in healthcare settings, adherence to universal precautions is crucial to protect both patients and health workers. In non-medical contexts, such as tattooing or traditional practices, public education on sterilization is necessary to minimize risks. Equally, mother-to-child transmission can be effectively prevented through timely medical interventions. Pregnant women living with HIV who receive appropriate ART, along with safe delivery practices and guided infant feeding options, can significantly reduce the risk of transmitting the virus to their babies (World Health Organization, 2016). However, gaps in maternal healthcare services and late diagnosis continue to sustain this mode of transmission in some regions. Beyond these biomedical and behavioral measures, addressing structural factors is fundamental to sustainable prevention. Poverty, low levels of education, gender inequality, and weak healthcare systems increase vulnerability to HIV infection (Mark, 2024). For example, individuals in economically disadvantaged situations may engage in risky behaviors for survival, while lack of education limits awareness of preventive methods. Therefore, strengthening health systems, improving access to education, and empowering vulnerable populations are essential components of an effective prevention strategy.

Despite the established HIV/AIDS prevention methods, adolescents or younger population are largely vulnerable or susceptible to the virus. This may be possibly due to the lack of awareness of the consequences of the virus. The consequences of HIV and its advanced stage, AIDS, on adolescents and younger populations are profound, extending beyond health to affect education, psychology and socio-economic development. Zgambo et al. (2018) maintained that this age group is particularly vulnerable due to a combination of biological susceptibility, limited access to accurate information and education, as well as social pressures that influence risky behaviors. From a health perspective, HIV infection weakens the immune system, making adolescents more susceptible to opportunistic infections such as tuberculosis and other communicable diseases. Because young people often delay testing due to fear, stigma, or lack of awareness, many cases are diagnosed late, leading to faster disease progression and complications (Collins et al., 2022). Additionally, adolescents living with HIV may struggle with adherence to antiretroviral therapy (ART), influenced by factors such as denial, peer pressure and inadequate support systems, which further worsens health outcomes. On the Psychological angle, the impact of HIV/AIDS is equally severe. Adolescents living with HIV often face stigma, discrimination, and social isolation, which can lead to anxiety, depression, and low self-esteem (Madiba et al., 2021). This is because the fear of disclosure and rejection may prevent them from forming meaningful relationships or seeking necessary support. Even those not infected but affected by HIV/AIDS within their families may experience trauma, grief, and emotional instability, which can influence behavior and decision-making during a critical developmental stage.

Also, HIV/AIDS disrupts family structures and community dynamics. Shawar and Shiffman (2023) maintained that the loss of parents or guardians creates a growing population of orphans and vulnerable children who may lack adequate care and guidance. This absence of support increases the likelihood of exploitation, child labor, and engagement in high-risk behaviors, including early sexual activity and substance abuse. In some cases, adolescents may resort to transactional sex as a means of

survival, thereby increasing their risk of infection and perpetuating the cycle. More so, in the economic part, the effects are long-term and far-reaching. Saeed and Ayuwat (2021) reported that families affected by HIV/AIDS often face increased healthcare costs and reduced income due to illness or death of breadwinners. As a result, adolescents in such households may be forced into the labor market at an early age, sacrificing education and skill development. This not only limits individual potential but also reduces the overall productivity of the community and future workforce.

Furthermore, HIV/AIDS has damaging implications in the education field. According to Kasande. (2022), adolescents affected by the disease either as patients or as caregivers to infected family members often experience disruptions in schooling. This is because frequent illness, medical appointments, and emotional distress can lead to absenteeism, poor academic performance, and in some cases, complete dropout. For those who lose parents to AIDS, the burden of economic survival may force them out of school prematurely, limiting their future opportunities and reinforcing cycles of poverty (Mhlungu, 2017). Also, the consequences of HIV/AIDS among adolescents are intensified by structural issues such as poverty, inadequate healthcare services, and limited access to youth-friendly sexual and reproductive health education (Mark, 2024). Furthermore, weak institutional support systems fail to provide the comprehensive care and protection that adolescents or younger population need. This vulnerable younger population are particularly those who are or occupy the helm of the secondary school education. Despite these consequences of the virus and the havoc it can rake, younger population such as those in the secondary school education are largely affected by the virus (Nubed & Akoachere, 2016; Zinyemba et al. 2020). Perhaps, the reason may be due poor design and integration of HIV/AIDS education in the Nigerian secondary school curriculum.

The design and integration of comprehensive HIV/AIDS education into secondary school curricula is widely recognized as a critical strategy for prevention, yet in Nigeria its implementation remains inconsistent, fragmented and often ineffective. Despite policy frameworks that acknowledge the importance of sexuality education, the actual delivery within schools falls short of equipping students with the knowledge and skills required to make informed health decisions (Ollis & Harrison, 2016). This gap has significant implications for the continued spread of HIV and the persistence of AIDS among young people such as secondary school students. Ojedokun et al. (2021) stressed that a major issue lies in the limited scope and depth of HIV/AIDS content within the curriculum. In many cases, the topic is embedded superficially within broader subjects such as biology or health education, without dedicated time or structured modules (Sharma, 2016). As a result, students receive fragmented information that emphasizes basic definitions rather than practical knowledge about prevention, testing and stigma reduction. This shallow design and integration fail to address the behavioral and social dimensions of HIV transmission, leaving students inadequately prepared to navigate real-life situations.

Research studies strongly argue that HIV/AIDS education is poorly designed and integrated within the secondary school curriculum. For instance, Eneji et al. (2022) found that students' awareness of HIV/AIDS largely stems from informal sources rather than structured classroom instruction, indicating gaps in curriculum delivery. Similarly, Igbokwe et al. (2020) identified significant weaknesses in the implementation of the Family Life and HIV Education

(FLHE) programme, noting that poor instructional delivery, inadequate teacher preparation, and lack of monitoring undermine its effectiveness. These findings suggest that although HIV/AIDS education may exist on paper, it is not meaningfully designed and integrated into teaching practice, thereby limiting its impact on students' knowledge and behavior. On the other hand, some studies present a more optimistic perspective, arguing that HIV/AIDS education can be effective when properly implemented. For example, Ezelote et al. (2024) demonstrated that peer-led school interventions significantly improved students' knowledge of HIV/AIDS, highlighting the potential of structured educational programmes. Likewise, Amaugo (2014), in a systematic review, concluded that school-based HIV/AIDS education programmes in Nigeria can positively influence students' awareness and attitudes. These studies indicate that the curriculum itself is not entirely deficient but rather that its success depends heavily on the mode and consistency of implementation. Contradictory findings like this call for further investigation. Furthermore, cultural and religious sensitivities significantly constrain curriculum delivery. Tohit and Haque (2024) noted that discussions around sexuality, condom use, and reproductive health are often considered taboo in many Nigerian communities. Consequently, educators may deliberately skip or dilute critical aspects of HIV/AIDS education to avoid controversy. This avoidance not only limits the effectiveness of instruction but also reinforces silence and misinformation among adolescents, who may then rely on unreliable sources such as peers or social media for information.

The consequences of this poor design and integration are far-reaching. Cort et al. (2023) noted that adolescents remain vulnerable to misinformation, risky behaviors, and stigma associated with HIV/AIDS. As a result, without accurate and comprehensive education, efforts to reduce infection rates among young people are significantly undermined. Moreover, the failure to normalize discussions around HIV/AIDS perpetuates discrimination against those living with the virus, discouraging testing and treatment (Waldmann et al., 2025). Thus, the poor design and integration of HIV/AIDS education in the Nigerian secondary school curriculum reflects a complex interplay of curricular limitations, cultural barriers and weak policy enforcement. These challenges collectively hinder the ability of the education system to serve as an effective tool for HIV prevention. Without addressing these systemic issues, the potential of school-based education to combat HIV/AIDS among students at this adolescent stage remains largely unrealized. Consequently, this has implications for curriculum development in Nigerian secondary schools.

The poor design and integration of HIV/AIDS education has significant implications for curriculum development in secondary schools in Nigeria. This is because it highlights fundamental gaps in how curricula are designed, implemented and evaluated, particularly in addressing contemporary health and social issues affecting adolescents. Sharma (2016) stressed that a key implication is the need for a more comprehensive and structured inclusion of HIV/AIDS education as a distinct and compulsory component of the curriculum rather than as a peripheral topic embedded within other subjects. Curriculum developers must recognize that effective HIV/AIDS education goes beyond theoretical knowledge to include behavioral change, life skills, and value reorientation (Sharma, 2016; Murwira, 2020). This necessitates a shift from content-heavy curricula to competency-based frameworks that emphasize critical thinking, decision-making, and

communication skills. Hence, without this shift, students may understand the concept of HIV/AIDS but remain ill-equipped to apply preventive measures in real-life situations.

Another implication is the need for cultural sensitivity without compromising educational accuracy. Suresh (2024) posited that while societal values and beliefs must be considered, curriculum development should ensure that essential topics such as safe sexual practices, stigma reduction, and testing are not excluded or diluted. This requires a balanced approach that integrates scientific accuracy with culturally appropriate teaching strategies, ensuring acceptability while maintaining effectiveness. Teacher preparation also becomes a central concern for curriculum development. Stronge (2018). Maintained that a well-designed curriculum must be supported by adequate teacher training programs that equip educators with both subject knowledge and pedagogical skills to handle sensitive topics confidently. This is because, without this, even the most comprehensive curriculum will fail at the implementation stage. Therefore, curriculum planning must be aligned with teacher capacity-building initiatives. Furthermore, the issue shows the importance of incorporating interactive and learner-centered teaching methods into the curriculum. Traditional lecture-based approaches are insufficient for topics like HIV/AIDS that require discussion, reflection, and attitude change (Zhang et al., 2019). Curriculum developers must therefore include guidelines for participatory methods such as group discussions, role-playing, and peer education.

Finally, the inconsistency in current design and integration points to the need for stronger monitoring and evaluation mechanisms within curriculum development processes. Clear standards, assessment strategies, and accountability frameworks must be established to ensure uniform delivery across secondary schools. Thus, the challenges surrounding HIV/AIDS education reveal critical weaknesses in curriculum design and integration in Nigerian secondary schools. Addressing these implications is essential for developing a responsive, inclusive, and effective curriculum capable of creating the awareness of the consequences of HIV/AIDS and meeting the health and developmental needs of adolescents, in this case, secondary school students. Consequently, this study examined the awareness of the consequences of HIV/AIDS and its implications for curriculum development in Nigerian secondary schools. The following research questions guided the study:

1. What is the extent to which secondary school students in Nigeria are aware of the consequences of HIV/AIDS?
2. To what extent does exposure to HIV/AIDS education influence students' preventive behaviours?
3. To what extent is HIV/AIDS-related content in the Nigerian secondary school curriculum perceived as adequate by students and teachers?

Methods

The study adopted analytical survey research design. The population of the study comprised all 129,000 senior secondary school (II) students and 25,976 teachers from 1,098 public secondary schools in South-East, Nigeria. The distribution of SSII student and teacher population is as follows; Abia state with 16,722 students and 4,000 teachers in 170 schools; Anambra state with 27,421 students and 5,200 teachers in 230 schools; Ebonyi state with 18,000 students with 3,800 teachers in 180 schools; Enugu State with 32,000 students with

6,200 teachers in 250 schools and Imo state with 35,000 students with 6,800 teachers in 268 public secondary schools. Using the Taro Yamane's formular, a sample size of 399 SSII students and 394 teachers from 113 public secondary schools were selected through stratified random sampling using multistage cluster sampling procedure. The instrument for data collection was HIV/AIDS Awareness and Education Questionnaire (HAEQ). It was made up of two sections; A and B. Section A collected demographic data of the respondents such as the category of respondents (students or teachers) and section B was divided into three clusters and each elicited information based on the specific purposes of the study. It was rated on a four-point Likert scale with response options of Strongly Agree = (SA), Agree = (A), Disagree = (D) and Strongly Disagree (SD). Each of the response options is categorised with value of 4, 3, 2 and 1 respectively (Appendix A, page 19). The instrument was face validated by three experts; two from research, measurement and evaluation, and one from public health, University of Nigeria, Nsukka. In order to ensure the internal consistency reliability of the instruments, 40 copies of were HIV/AIDS Awareness and Education Questionnaire (HAEQ) was trial tested on 40 students and 40 teachers in South-South which is not part of the zone under study but shares similar characteristics with the Area under study. The internal consistency of the HAEQ was obtained using Cronbach alpha method of estimating reliability for instruments that are polytomously scored. The reliability indices obtained for clusters (A-C) for HAEQ were 0.72, 0.77, 0.86, and overall index was 0.83 for students (Appendix B, Page 20), and 0.92, 0.89, 0.89 and overall index was 0.93 for teachers.

Face-to-face method of data collection was used. The instrument was administered to the students and teachers and retrieved on the spot to ensure high turnover rate. The data collected were analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistics of mean and standard deviation were used to answer the research questions. Since the scale used 4-point Likert scale, a cluster mean score of 3.50 – 4.00 = Very High Extent (VHE); 2.50 – 3.49 = High Extent (HE); 1.50 – 2.49 = Low Extent (LE) and 1.00 – 1.49 = Very Low Extent (VLE). These criteria served as the benchmark for answering the research questions, whereas the hypothesis was tested using independent sample t-test at 0.05 level of significance. The decision rule for testing the hypotheses was to reject the null hypothesis if the associated probability value of the test statistic is equal to or less than 0.05 level of significance, otherwise do not reject the hypothesis.

Results

Table 1: Mean and standard deviation on the extent secondary school students in Nigeria are aware of the consequences of HIV/AIDS

S/N	Item Statement	Students				Teachers			
		N	Mean	SD	Decision	N	Mean	SD	Decision
1	Students are aware that HIV/AIDS weakens the body's immune system.	399	1.61	.48	LE	394	1.65	.47	LE
2	Students understand that untreated HIV	399	1.38	.48	VLE	394	1.55	.49	LE

	can lead to serious health complications.								
3	Students are aware that HIV/AIDS can negatively affect academic performance.	399	1.20	.40	VLE	394	1.30	.46	VLE
4	Students understand that HIV/AIDS can lead to social stigma and discrimination.	399	1.94	.63	HE	394	2.06	.68	HE
5	Students are aware that HIV/AIDS can result in emotional and psychological problems.	399	1.59	.49	LE	394	1.63	.48	LE
6	Students understand that HIV/AIDS can affect family income and well-being.	399	1.50	.50	LE	394	1.55	.50	LE
Cluster Mean		399	1.53	.49	LE	394	1.62	0.51	LE

The result in table 1 shows the mean and standard deviation on the extent to which secondary school students in Nigeria are aware of the consequences of HIV/AIDS. The result shows a cluster mean of 1.53 with a standard deviation of 0.49 for students. Since the cluster mean (1.53) falls within the range of 1.50 – 2.49, this means that there is a low extent to which secondary school students in Nigeria are aware of the consequences of HIV/AIDS as reported by students. This was also collaborated by teachers as the result equally showed a cluster mean of 1.62 and standard deviation of 0.51 was obtained for the extent secondary school students in Nigeria are aware of the consequences of HIV/AIDS. Since the cluster mean (1.62) falls within the range of 1.50 – 2.49 criterion, it implies that there is a low extent to which secondary school students in Nigeria are aware of the consequences of HIV/AIDS as reported by teachers. Hence, both students and teachers reported that there is a low extent to which secondary school students in Nigeria are aware of the consequences of HIV/AIDS.

Table 2: Mean and Standard deviation on the extent exposure to HIV/AIDS education influence students' preventive behaviours

S/N	Item Statement	Students				Teachers			
		N	Mean	SD	Decision	N	Mean	SD	Decision
7	HIV/AIDS education encourages students to avoid risky sexual behaviours.	399	2.64	1.04	HE	394	3.50	.50	VHE

8	Exposure to HIV/AIDS education increases students' willingness to use preventive measures.	399	2.71	1.04	HE	394	3.49	.57	HE
9	HIV/AIDS education helps students make informed decisions about their health.	399	2.91	.99	HE	394	3.55	.54	VHE
10	Students who receive HIV/AIDS education are more likely to avoid sharing sharp objects.	399	2.89	1.03	HE	394	3.30	.71	HE
11	HIV/AIDS education promotes regular HIV testing among students.	399	2.88	.97	HE	394	3.19	.79	HE
12	Exposure to HIV/AIDS education improves students' attitudes toward people living with HIV/AIDS.	399	3.00	.88	HE	394	3.44	.63	HE
Cluster Mean		399	2.83	.99	HE	394	3.41	.62	HE

The result in table 2 shows the mean and standard deviation on the extent to which exposure to HIV/AIDS education influence students' preventive behaviours. The result shows a cluster mean of 2.83 with a standard deviation of 0.99 for students. Since the cluster mean (2.83) falls within the range of 2.50 – 3.49, this means that there is a high extent to which exposure to HIV/AIDS education influence students' preventive behaviours as reported by students. This was also collaborated by teachers as the result equally showed a cluster mean of 3.41 and standard deviation of 0.62 was obtained. Since the cluster mean (3.41) falls within the range of 2.50 – 3.49 criterion, it implies that there is a high extent to which the exposure of students to HIV/AIDS education influences their preventive behaviours as reported by teachers. Therefore, both students and teachers reported high extent to which the exposure of students to HIV/AIDS education influences their preventive behaviours.

Table 3: Mean and Standard Deviation the extent to which HIV/AIDS-related content in the Nigerian secondary school curriculum is perceived as adequate by students and teachers

S/N	Item Statement	Students				Teachers			
		N	Mean	SD	Decision	N	Mean	SD	Decision

13	HIV/AIDS topics are adequately covered in the secondary school curriculum.	399	1.69	.46	LE	394	1.65	.47	LE
14	The curriculum provides sufficient information on the causes and transmission of HIV/AIDS.	399	1.59	.49	LE	394	1.55	.49	LE
15	The curriculum adequately addresses methods of preventing HIV/AIDS.	399	1.30	.45	VLE	394	1.30	.46	VLE
16	HIV/AIDS-related lessons are regularly taught in schools.	399	2.08	.65	LE	394	2.06	.68	LE
17	The curriculum provides enough instructional materials on HIV/AIDS education.	399	1.67	.46	LE	394	1.63	.48	LE
18	Teachers are adequately prepared to teach HIV/AIDS-related topics in schools.	399	1.59	.49	LE	394	1.51	.50	LE
Cluster Mean		399	1.65	.50	LE	394	1.61	.51	LE

The result in table 3 shows the mean and standard deviation on the extent to which the HIV/AIDS-related content in the Nigerian secondary school curriculum is perceived as adequate by students and teachers. The result shows a cluster mean of 1.65 with a standard deviation of 0.50 for students. Since the cluster mean (1.65) falls within the range of 1.50 – 2.49, this means that there is a low extent to which the HIV/AIDS-related content in the Nigerian secondary school curriculum is perceived as adequate by students. This was also collaborated by teachers as the result equally showed a cluster mean of 1.61 and standard deviation of 0.51 was obtained. Since the cluster mean (1.61) falls within the range of 1.50 – 2.49 criterion, it implies that there is equally a low extent to which the HIV/AIDS-related content in the Nigerian secondary school curriculum is perceived as adequate by teachers. This means that both students and teachers see the HIV/AIDS-related content in the Nigerian secondary school curriculum as inadequate.

Table 4: t-test analysis of the difference between students and teachers' perception of the adequacy of HIV/AIDS-related content in the Nigerian secondary school curriculum

Category	N	$\bar{X}$	SD	Df	t-value	Sig.(2-tailed)
Students	399	9.94	2.63	791	1.124	.261
Teachers	394	9.73	2.71			

The result in table 4 shows the t-test analysis for the difference between students and teachers' perception of the adequacy of HIV/AIDS-related content in the Nigerian secondary school curriculum. The result shows that the t-value of 1.124 with an associated probability value of 0.261 was obtained at 791 degrees of freedom. Since the probability value of 0.261 is greater than 0.05 level of significance, the null hypothesis is not rejected. Hence, there is no significant difference in students and teachers' perception of the adequacy of HIV/AIDS-related content in the Nigerian secondary school curriculum. This implies that both students and teachers are in agreement that the HIV/AIDS-related content in the Nigerian secondary school curriculum is inadequate.

Discussion

The findings of the study revealed that both students and teachers reported a low extent of awareness among secondary school students in Nigeria regarding the consequences of Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome. This result is possible because this outcome may be attributed to several educational, cultural, and institutional factors that limit effective dissemination of HIV/AIDS-related knowledge among adolescents. One possible explanation is the inadequate integration and implementation of HIV/AIDS education within the secondary school curriculum. Although HIV/AIDS-related topics may exist in subjects such as biology or health education, they are often treated superficially without sufficient emphasis on the long-term physical, emotional, social and economic consequences of the disease. As a result, students may possess only basic awareness without deeper understanding. Another contributing factor is the persistence of cultural and religious sensitivities surrounding discussions of sexuality and reproductive health. In many communities, open conversations about HIV/AIDS are considered inappropriate, causing teachers and parents to avoid detailed discussions of the topic. This creates an environment where students receive limited and sometimes inaccurate information about the disease and its consequences. More so, inadequate teacher preparation may also explain the low awareness level. Some teachers may lack the training, confidence, or instructional materials needed to effectively teach HIV/AIDS-related content. Consequently, classroom instruction may fail to engage students meaningfully or correct existing misconceptions. Furthermore, limited access to reliable health information and overreliance on peers or social media may expose students to misinformation. Combined with weak awareness campaigns and insufficient school-based interventions, these factors contribute to the low level of awareness reported by respondents in the study. This finding lend support to the work of Eneji et al (2022) who found that although students had some awareness of HIV/AIDS, many lacked adequate and detailed information due to limited access to reliable educational sources and poor parental and school-based education. It also laid credence to the work of Idoko (2021) who reported that students' awareness of HIV/AIDS was negatively affected by inadequate sex education, poor communication channels, and difficulty understanding HIV/AIDS-related terminologies. More so, the finding supported the work of Olorukooba et al (2023) who observed that despite

general awareness of HIV/AIDS among senior secondary school students, substantial gaps still existed in students' comprehensive knowledge and understanding of the disease and its implications.

The findings of the study also revealed that both students and teachers reported a high extent to which exposure to Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome education influences students' preventive behaviours in Nigeria. This finding is possible because it may be attributed to the increasing role of school-based health education in shaping students' knowledge, attitudes, and decision-making regarding risky behaviours associated with HIV/AIDS. One possible explanation is that HIV/AIDS education provides students with accurate information about the causes, transmission, consequences, and prevention of the disease. Through classroom instruction, seminars, awareness campaigns, and peer education programmes, students become more informed about the dangers of unsafe sexual practices, sharing of sharp objects, and other risky behaviours. This increased awareness can encourage students to adopt safer and more responsible behaviours. Another reason may be the influence of behavioural and moral education embedded within HIV/AIDS instructional programmes. Many HIV/AIDS education initiatives emphasize self-discipline, abstinence, responsible relationships, and respect for personal health. Such teachings can positively shape students' attitudes and encourage them to avoid behaviours that may expose them to infection. The outcome may also be due to the growing use of media and public health campaigns that complement school-based HIV/AIDS education. Students are frequently exposed to messages promoting preventive practices such as condom use, HIV testing, and stigma reduction through television, radio, social media, and community outreach programmes. The combination of school instruction and public sensitization efforts may reinforce positive behavioural change. Furthermore, interactive teaching approaches such as group discussions, peer counselling, and role-playing may enhance students' understanding and personal acceptance of preventive measures, thereby increasing the influence of HIV/AIDS education on their behaviours. This finding lend support to the work of Maduakolam et al (2022) who found that structured HIV/AIDS health education significantly reduced risky sexual behaviours among adolescents in Nigerian secondary schools. The study revealed that students exposed to health education demonstrated safer behavioural practices compared to those in the control group. It also laid credence to the work of Ezelote et al (2024) who reported that peer health education intervention greatly improved students' knowledge of HIV/AIDS prevention and encouraged positive behavioural change among secondary school adolescents in Imo State, Nigeria. More so, the finding supported the work of Chinwe (2024) who found that awareness programmes and HIV/AIDS education positively influenced preventive practices such as abstinence, condom use, and regular health checks among secondary school students in Edo State.

The findings of the study also revealed that both students and teachers perceived the HIV/AIDS-related content in the secondary school curriculum in Nigeria as inadequate. The finding also showed that there was no significant difference between the perceptions of students and teachers regarding the inadequacy of the curriculum content. This result could be possible because this outcome may be attributed to the shared experiences of both groups within the same educational environment and the observable limitations in the integration and implementation of HIV/AIDS education in schools. One possible explanation

is that HIV/AIDS-related topics are often insufficiently covered within the curriculum. In many schools, the content is embedded within broader subjects such as biology or health education without detailed emphasis on prevention, behavioural change, stigma reduction, and the socio-economic consequences of the disease. As a result, both teachers and students may perceive the content as lacking depth and relevance to contemporary realities. Another reason may be the shortage of instructional materials and inadequate teacher training. Teachers who lack specialized training or updated teaching resources may struggle to effectively deliver HIV/AIDS-related lessons. Consequently, students receive limited information, leading both groups to develop similar perceptions about the inadequacy of the curriculum content. The absence of significant difference between students' and teachers' perceptions may also suggest consensus arising from direct classroom experiences. Since both teachers and students interact with the same curriculum structure, teaching methods, and learning materials, they are likely to observe similar deficiencies in content coverage and instructional quality. Finally, cultural and religious sensitivities surrounding sexuality education may discourage comprehensive classroom discussions on HIV/AIDS, thereby limiting the effectiveness and adequacy of curriculum integration as well as implementation in many secondary schools. This finding lend support to the work of Igbokwe, Ogbonna, Ezegbe, Nnadi and Eseadi (2020) who observed that although the Family Life and HIV Education (FLHE) curriculum was introduced to address HIV/AIDS issues in schools, its integration as well as implementation has been weakened by inadequate instructional materials, insufficient teacher preparation, and poor coordination. It also laid credence to a qualitative study by NPC and UNICEF (2016), on the implementation of Family Life and HIV/AIDS Education in Nigerian schools found that both teachers and students identified major challenges such as inadequate personnel, limited information materials, and inconsistencies in curriculum delivery across schools and states. More so, this finding lend support to the work Maria-Lauretta et al (2025) who reported that despite the existence of HIV-related educational content, many secondary school students still demonstrated inadequate HIV knowledge, suggesting deficiencies in curriculum adequacy and effectiveness.

Conclusion

Secondary school students in Nigeria possess low awareness of the consequences of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome, despite the positive influence of HIV/AIDS education on preventive behaviours. It was also shown that HIV/AIDS-related content in the secondary school curriculum is perceived as inadequate by both students and teachers. These outcomes indicate the need for more comprehensive and effectively integrated as well as implemented HIV/AIDS education within Nigerian secondary schools. The Federal and State Ministries of Education in Nigeria should strengthen the integration of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome education into the secondary school curriculum by providing more comprehensive and up-to-date content on the causes, consequences, prevention, and management of the disease. Schools should organize regular HIV/AIDS awareness programmes, seminars, peer education activities, and health campaigns to improve students' awareness of the consequences of HIV/AIDS and encourage positive preventive behaviours among adolescents. Government and educational stakeholders

should provide adequate instructional materials and continuous professional training for teachers to enhance effective teaching and implementation of HIV/AIDS-related content in secondary schools.

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