



Research Paper

Differences of Locus of Control, Self-Efficacy and Knowledge on HIV and AIDS Based on Adolescents' Religion.

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Abstract

This study investigated the influence of religious background on adolescents' knowledge, locus of control, and self-efficacy regarding HIV and AIDS among secondary school students in Niger State, Nigeria. Guided by five research questions and corresponding hypotheses, the research examined whether religious affiliation (Muslim and non-Muslim) significantly affects HIV/AIDS knowledge, health locus of control, and self-efficacy, as well as the relationships among these constructs. The study employed a quantitative cross-sectional survey design. A sample of 212 adolescents was drawn using a two-stage sampling technique from 292 senior secondary schools across the three senatorial zones of Niger State. Purposefully 212 questionnaires were used for analysis from 220 collected due to the COVIC 19 pandemics, insecurity and banditry. Reliability tests indicated acceptable Cronbach's Alpha values ranging from 0.73 to 0.81. Data were analysed using descriptive statistics, Pearson correlation, and two-way ANOVA. The results showed significant differences in HIV/AIDS knowledge ($F(1,208) = 5.80, p = .018$) and self-efficacy ($F(1,208) = 4.20, p = .041$) by religious background, with small effect sizes. However, no significant difference was found for locus of control ($p = .210$), and no interaction effect of religion and gender was observed. Correlation analysis revealed no significant associations between knowledge and the other constructs, but locus of control and self-efficacy were moderately correlated ($r = .41, p < .01$). The findings highlight that religious affiliation influences both knowledge and self-efficacy but not locus of control, suggesting that psychosocial and cultural factors mediate adolescents' preventive behaviors. The study concludes that effective HIV/AIDS interventions must integrate religious contexts, strengthen adolescents' self-efficacy, and promote accurate knowledge dissemination across faith groups to reduce vulnerability among Nigerian adolescents.

KEYWORDS: AIDS, HIV, Locus of control, Self-efficacy, Knowledge, Religion, Adolescents

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I. INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS) and Human Immunodeficiency Virus (HIV) remain among the most serious global health challenges, particularly in regions such as Sub-Saharan Africa where prevalence rates remain high. HIV is a retrovirus that progressively weakens the immune system by targeting CD4+ T lymphocytes, which are central to the body's defense against infections (1). The virus gains entry through CD4 receptors, converts its RNA into DNA through reverse transcription, and integrates into the host's genetic material, gradually impairing immunity (2;3). The advanced stage of infection, known as AIDS, is marked by

opportunistic diseases and life-threatening conditions that result from severe immune suppression (4). This biomedical understanding sets the stage for examining how psychological and social factors—specifically self-efficacy, knowledge and locus of control—interact with gender and Religions to shape adolescents' responses to HIV and AIDS.

The concept of locus of control, introduced by (5), explains the extent to which individuals perceive themselves as having influence over their life outcomes. Adolescents with an internal locus of control believe their actions—such as consistent condom use or voluntary HIV testing—directly affect their health. (6) explains that such individuals often feel empowered to take responsibility for preventive measures. In contrast, those with an external locus of control view health outcomes as determined by fate, divine will, or external authorities. (7) noted that this external orientation often reduces personal responsibility and leads to passive acceptance of risk.

Self-efficacy, described by Bandura (8), refers to one's belief in their ability to successfully perform behaviors necessary for specific outcomes. In the case of HIV/AIDS, this construct includes the confidence to negotiate condom use, resist peer influence, and adhere to preventive practices. (9) emphasize that self-efficacy is one of the strongest determinants of consistent safe practices, as individuals who believe in their ability to act are more likely to translate knowledge into behavior.

(10) highlights that adolescents with high self-efficacy are better able to resist external pressures and assert their health decisions. On the other hand, (11) explains that where gender dynamics place girls in subordinate positions, self-efficacy may be diminished, making it difficult for them to insist on preventive measures even when they are knowledgeable. Self-efficacy, therefore, connects the gap between awareness and behavior, ensuring that knowledge is applied in practical terms.

Knowledge is a foundational element in shaping how adolescents respond to HIV and AIDS. It involves awareness of transmission routes, prevention methods such as condom use and abstinence, and available treatments including antiretroviral therapy (12). Awareness provides adolescents with the ability to distinguish between protective and risky behaviors. However, misinformation and misconceptions, such as the belief that HIV can be contracted through casual contact, continue to influence attitudes and actions in many contexts ((13).

The spread and quality of knowledge often depend on the openness of families, schools, and communities to discuss sexual health. (14) emphasize that cultural taboos surrounding sexual discussions frequently limit the information adolescents receive. Where accurate knowledge is lacking, stigma is reinforced, discouraging testing and disclosure. Hence, knowledge functions as the platform upon which psychological constructs such as locus of control and self-efficacy are built, influencing how adolescents process and apply health-related information.

In societies where religious or cultural beliefs emphasize destiny or divine control, adolescents may adopt external attributions, perceiving HIV infection as unavoidable. (15) observe that while faith can guide moral behavior, overreliance on external attributions may weaken the sense of responsibility in practicing safe behaviors. Thus, locus of control determines whether knowledge about HIV/AIDS translates into protective action or remains theoretical awareness without behavioral consequences. Knowledge, locus of control, and self-efficacy are interconnected constructs. (16) notes that awareness provides the informational basis for decision-making, but it is locus of control that determines whether individuals believe their actions matter, and self-efficacy that enables them to carry out those actions. For example, an adolescent may know that condoms reduce HIV transmission but fail to use them if they believe fate controls their health (external locus of control) or if they lack the confidence to negotiate condom use with a partner (low self-efficacy). Together, these variables form a psychological and behavioral framework for understanding adolescents' vulnerability to HIV/AIDS.

Gender plays a crucial role in shaping knowledge acquisition, control orientation, and self-efficacy. According to (17) adolescent girls in Sub-Saharan Africa face a disproportionately high risk of HIV infection due to cultural restrictions, limited autonomy, and unequal power relations in relationships. (18) point out that although girls may possess adequate knowledge, gender-based inequalities often prevent them from asserting safe practices. In contrast, boys, influenced by norms of masculinity, may underestimate risks and adopt behaviors that expose them to infection ((19). Gender therefore influences not only access to knowledge but also the psychological constructs that govern whether and how that knowledge is applied.

Religions is another key factor influencing adolescents' knowledge, locus of control, and self-efficacy. (20) explain that religious teachings often encourage moral behaviors such as abstinence and fidelity, which align with HIV prevention. However, Smith (2004) points out that some religious doctrines discourage condom use or open discussions about sexuality, creating barriers to effective prevention (15) note that religious beliefs can foster \external locus of control, where health outcomes are attributed to divine will rather than personal responsibility. For adolescents, this may diminish the motivation to take preventive actions, even when knowledge is present. Religions therefore serves both as a protective influence and as a potential barrier, depending on how doctrines are interpreted and applied within communities.

When considered together, knowledge, locus of control, and self-efficacy form a comprehensive framework that explains adolescents' health behavior in relation to HIV/AIDS. (1) highlight the biological seriousness of the infection, while (16) underscores the role of psychological intention in shaping behavior. These

constructs are mediated by gender differences, which influence access and autonomy, and by religious influences, which shape attitudes and attributions. Effective prevention must therefore address not only the dissemination of accurate knowledge but also the strengthening of adolescents' confidence and sense of responsibility, while remaining sensitive to gendered experiences and religious contexts.

1.1 STATEMENT OF THE PROBLEM.

AIDS and HIV continue to represent one of the most significant health challenges affecting young people worldwide, particularly in Sub-Saharan Africa where adolescents and young adults account for a large proportion of new infections as it was tagged by (52) that they are highly vulnerable to HIV and AIDS, that three out of every four new infections in sub-Sahara Africa are among girls aged 15-19 years and the infection rate is high among adolescents. Despite decades of awareness campaigns and preventive programs, many adolescents still demonstrate limited or distorted knowledge about HIV and AIDS, leaving them vulnerable to risky behaviors and misinformation because heterosexual relationships are the primary route by which HIV is transmitted in Nigeria, and that females constitute more than 80% of infection and continue to make up the bulk of those who are HIV-positive, (21). Niger state where the research took place which is sharing border with the Federal Capital Territory that that the nation capital city which rank among the first five states with the highest prevalence rate of HIV and AIDS. This gap persists partly because knowledge acquisition and health-related decision-making are not determined by information alone but are also shaped by psychological and socio-cultural factors. Among these factors, locus of control and self-efficacy stand out as important psychological attributes that influence how adolescents respond to HIV and AIDS. Adolescents with an internal locus of control may feel empowered to take preventive measures, while those with an external locus of control may attribute health outcomes to fate, luck, or divine will, reducing personal responsibility. Similarly, self-efficacy—the confidence in one's ability to perform protective behaviors—determines whether adolescents are able to translate awareness into consistent action. When self-efficacy is weak, even well-informed adolescents may fail to resist peer influence, negotiate safe sex, or seek testing and treatment.

However, these psychological constructs do not exist in isolation. Social factors such as gender and Religions strongly shape how adolescents understand, interpret, and apply HIV and AIDS-related knowledge. Gender roles and expectations often determine who has access to accurate information, who is able to make autonomous health decisions, and how sexual matters are discussed in families and communities. For instance, girls may have less decision-making power in negotiating safe practices, while boys may adopt riskier behaviors due to peer or societal expectations. Similarly, religious beliefs and doctrines can both encourage moral behaviors that align with HIV prevention (such as abstinence and fidelity) and, at the same time, impose restrictions on open discussions about sexuality or discourage condom use. In many cases, religious teachings influence whether adolescents view HIV prevention as a matter of personal responsibility (internal control) or divine destiny (external control), thereby affecting their confidence in adopting preventive behaviors.

The combined effect of these factors creates a complex environment where knowledge, locus of control, and self-efficacy are interwoven with gendered experiences and religious backgrounds. Yet, there is limited clarity on the extent to which these variables interact and influence adolescents' behaviors in the school environment. Understanding these relationships is particularly important for secondary school students, who are at a developmental stage marked by identity formation, increased autonomy, and susceptibility to social influence. Without such understanding, interventions may fail to address the real barriers that prevent adolescents from adopting healthy behaviors.

Research Questions

1. To what extent do religious background influence secondary school students' knowledge of HIV and AIDS?
2. How do Religions (Muslim and non-Muslim) relate to adolescents' locus of control regarding HIV and AIDS?
3. Does self-efficacy in HIV/AIDS prevention differ significantly by religious affiliation among secondary school students?
4. Is there an interaction effect between Religions (Muslim and non-Muslim) on students' knowledge of HIV/AIDS, locus of control, and self-efficacy?
5. What is the relationship between knowledge of HIV/AIDS, locus of control, and self-efficacy among adolescents?

Null Hypothesis

H₀₁: There is no significant difference in the mean score of knowledge of HIV and AIDS based religious background among secondary school students.

H02: There is no significant difference in locus of control regarding HIV and AIDS based on religious background among secondary school students.

H03: There is no significant difference in self-efficacy regarding HIV and AIDS prevention based on religious background among secondary school students.

H04: There is no significant interaction effect of Religions (Muslim and non-Muslim) on knowledge of HIV and AIDS, locus of control, and self-efficacy among secondary school students.

H05: There is no significant relationship between knowledge of HIV and AIDS, locus of control and self-efficacy among secondary school students.

II. LITERATURE REVIEW

2.1 Epidemiological Trends, Gender and Religions Disparities in Adolescent HIV in Nigeria

HIV and AIDS remain significant public health concerns in Nigeria, particularly among adolescents. Nigeria has one of the highest HIV burdens globally, with an estimated 1.9 million people living with HIV as of 2023, including over 200,000 adolescents aged 10–19 years (52b). Adolescents, especially those in secondary school, are a vulnerable group due to biological, social, and behavioral factors that increase their risk of HIV infection. Within this group, gender and Religions play important roles in shaping access to information, health-seeking behaviors, and overall HIV-related knowledge and attitudes. This literature review examines the epidemiological trends of HIV among adolescents in Nigeria and explores how gender and religious affiliations contribute to disparities in HIV knowledge, prevention, and risk.

Recent data from the National HIV/AIDS and Reproductive Health Survey (22) indicate that HIV prevalence among adolescents in Nigeria is relatively low compared to adults, but varies significantly by age, sex, and region. The overall prevalence among adolescents aged 15–19 is estimated at 0.3%, with higher rates observed in females (0.5%) than males (0.1%) (23). This gender disparity becomes more pronounced in older adolescents, particularly between the ages of 18 and 19, where young women are nearly twice as likely to be living with HIV as their male peers. The higher prevalence among adolescent girls is linked to a combination of biological vulnerability and social factors, including early sexual debut, transactional sex, and gender-based power imbalances in relationships (24). Additionally, regional disparities exist, with higher HIV prevalence reported in the southern and eastern parts of Nigeria compared to the northern regions. For instance, states like Akwa Ibom, Benue, and Cross River report adolescent HIV rates above the national average, while northern states such as Kano and Kaduna report lower but still concerning levels (25).

Adolescents in secondary schools are a key population for HIV prevention efforts because they are at a developmental stage where they begin to explore sexuality and form health-related attitudes and behaviors. Studies show that only about 40% of Nigerian adolescents have comprehensive knowledge about HIV transmission and prevention (26). This knowledge gap is more pronounced in rural areas and among less-educated youth, highlighting the need for targeted school-based interventions.

Gender plays a central role in shaping adolescents' experiences with HIV. Numerous studies have found that adolescent girls generally have higher HIV prevalence but also tend to have better knowledge about HIV transmission compared to boys (27). This paradox suggests that while girls may be more informed, they often lack the power to act on that knowledge due to social and cultural constraints. For example, research conducted in urban secondary schools in Lagos and Ibadan found that female students were more likely than males to correctly identify modes of HIV transmission and prevention methods (28). However, they were also more likely to report engaging in risky sexual behaviors, such as having older sexual partners or inconsistent condom use, due to economic dependence or peer pressure. In contrast, male adolescents often underestimate their risk of infection and are less likely to seek HIV testing or counseling services (29).

The gender gap in HIV outcomes is further influenced by access to sexual and reproductive health education. In many Nigerian schools, especially in conservative communities, sex education is limited or avoided altogether due to cultural and religious sensitivities. When provided, it often focuses more on abstinence and moral instruction than on practical prevention strategies, which may not adequately equip adolescents—especially girls—with the tools to protect themselves (30). Moreover, gender norms that emphasize male dominance and female modesty can discourage open discussions about sex and HIV, making it difficult for adolescents to ask questions or seek help. These norms also contribute to stigma, which can prevent both boys and girls from accessing HIV services, though girls may face greater social consequences if they are perceived as sexually active (31).

Religions is a powerful social institution in Nigeria, with the population broadly divided between Christianity and Islam, and a small percentage adhering to traditional beliefs. Religious beliefs and practices significantly influence attitudes toward sex, health, and HIV prevention among adolescents (32). Christian and

Muslim adolescents often receive different messages about sexuality and HIV prevention, which can affect their knowledge and behaviors. For instance, many Christian denominations, particularly Pentecostal and evangelical churches, emphasize abstinence until marriage and often oppose the use of condoms, even for disease prevention (33). Similarly, Islamic teachings in Nigeria generally discourage premarital sex and may limit discussions about contraception and HIV in religious settings.

Despite these conservative views, studies show that religious adolescents often have higher levels of HIV knowledge compared to their non-religious peers, likely because religious institutions sometimes serve as sources of health information during youth programs or religious education classes (34). For example, a study in Kaduna State found that Muslim adolescents who attended Quranic schools were more likely to know how HIV is transmitted than those who did not, suggesting that religious education can complement formal schooling in HIV awareness (35).

However, religious teachings that stigmatize HIV or associate it with moral failure can create barriers to prevention and care. Adolescents who fear judgment from their religious communities may avoid getting tested or disclosing their status, even if they suspect they are at risk (36). This is particularly true for girls, who may be blamed for bringing HIV into a relationship, regardless of how they were infected.

There are also regional differences in how Religions affects HIV outcomes. In the predominantly Muslim north, cultural and religious conservatism may limit access to sexual health services for adolescents, especially girls. In contrast, in the Christian-majority south, there is generally more openness to discussing HIV, though abstinence-only messages still dominate in many churches (30).

The intersection of gender and Religions further shapes adolescents' HIV-related experiences. For example, a study comparing Christian and Muslim adolescents in mixed urban and rural settings found that Muslim girls had the lowest levels of self-efficacy in refusing unsafe sex, largely due to stricter gender norms and limited autonomy in decision-making (37). In contrast, Christian girls, while still facing gender inequalities, often had more opportunities to participate in youth groups that discussed health and relationships. Male adolescents, on the other hand, may benefit from greater freedom to seek information and services, but they are also less likely to engage in preventive behaviors if their religious beliefs downplay the seriousness of HIV or promote risky notions of masculinity (29). For instance, some religious teachings may portray condom use as a sign of distrust or immorality, which discourages protection even when knowledge is present.

Interestingly, research also shows that religious involvement—such as regular attendance at church or mosque—can be protective. Adolescents who are actively involved in religious activities tend to delay sexual debut and report lower rates of multiple sexual partnerships (34). This protective effect appears to be stronger among girls, possibly because religious environments reinforce modesty and moral conduct more strictly for females.

Beyond demographics, psychological factors such as self-efficacy, knowledge and locus of control play a crucial role in HIV prevention among adolescents. Knowledge of HIV transmission and prevention is the foundation for informed decision-making. However, knowledge alone is not enough; adolescents must also believe they can control their health outcomes (locus of control) and feel confident in their ability to act (self-efficacy). Studies show that Nigerian adolescents with higher HIV knowledge are more likely to adopt protective behaviors, but this relationship is stronger when combined with internal locus of control—the belief that one's actions influence health outcomes (28). Adolescents who feel empowered and capable of making safe choices are more likely to use condoms, avoid risky partners, and seek testing. Self-efficacy, in particular, has been identified as a key predictor of preventive behavior. For example, girls who believe they can refuse sex or negotiate condom use are less likely to experience coerced sex or unprotected intercourse (27). Religious and gender norms can either support or undermine self-efficacy. Supportive religious leaders and gender-equitable education programs can enhance adolescents' confidence in protecting themselves, while stigma and restrictive norms can reduce it.

2.2 Locus of Control and HIV/AIDS.

Adolescence is a formative stage marked by significant psychological, emotional, and social development. During this period, individuals begin to assume greater responsibility for their health-related decisions and behaviors. One of the most influential psychological constructs in understanding health behavior among adolescents is the locus of control—a concept introduced in the 1960s and widely applied to health psychology.

Locus of control refers to the extent to which individuals believe that life outcomes are determined by their own actions (internal locus) or by external forces such as fate, chance, or powerful others (external locus). (38) described locus of control as a measure of the perceived source of control over life events. Expanding on this, (39) explained that health locus of control (HLC) specifically addresses beliefs about what influences health and illness—whether it be personal effort, the actions of others, or pure chance.

(38) has demonstrated that locus of control significantly affects health-related behaviors, including those related to HIV prevention. Adolescents with a strong internal HLC are more likely to believe that their health is

a result of their own decisions and are thus more inclined to engage in protective behaviors such as condom use. Conversely, adolescents with an external HLC—those who attribute health outcomes to fate or external forces—are more likely to engage in risky sexual behaviors (RSB). A study by (40) confirmed that adolescents with an internal HLC reported higher condom use and were more proactive in adopting preventive health measures. Similarly, (41) found that adolescents with an external HLC scored significantly higher on indices of risky sexual behavior compared to those with an internal HLC. These findings highlight the crucial role of locus of control in shaping how adolescents perceive health risks and the actions they take in response.

2.3 Self-Efficacy for HIV and AIDS

Self-efficacy, a concept introduced by (42), refers to an individual's confidence in their ability to perform specific behaviors successfully. It is considered a foundational component in understanding and promoting health-related behavior change. (42) (43) defined self-efficacy as a form of expectancy reflecting individuals' beliefs or judgments about their capability to execute actions required to manage prospective situations. People with high self-efficacy regarding a particular task tend to have greater confidence in their ability to perform that behavior and, consequently, are more likely to initiate and maintain it (Bandura, (44), (45)).

The application of self-efficacy theory has been widespread across health promotion studies, particularly in influencing individuals' decisions to adopt safer health behaviors. Among adolescents, enhancing self-efficacy has proven to be an effective strategy in fostering safer sexual practices, reducing risk-taking behaviors, and increasing their perceived control over health outcomes ((43) (45); (48); (49); (50);, (51),). Given its predictive power, self-efficacy is now widely recognized as a crucial component in the design and implementation of HIV prevention programs (46); (52); (53).

Higher levels of HIV/AIDS preventive self-efficacy among adolescents have been consistently linked with reduced engagement in risky sexual behaviors. Adolescents with greater confidence in their ability to negotiate safer sex practices, communicate with partners, or resist pressure to engage in unsafe sex are more likely to engage in protective behaviors. (54) found that adolescents with stronger self-efficacy regarding condom negotiation and refusal of unsafe sex were less likely to participate in unprotected vaginal and anal intercourse (UVAI), particularly when their partners were known to be HIV-positive or of mixed HIV status.

2.4 KNOWLEDGE OF HIV AND AIDS

Knowledge has long been recognized as a critical determinant of health behavior and a powerful catalyst for positive change in all aspects of human life, including the global fight against HIV/AIDS (55). In response to the HIV/AIDS epidemic, both governmental and non-governmental organizations have initiated extensive awareness campaigns aimed at increasing the population's knowledge and fostering behavior change. However, during the 1980s and early 1990s, the general population's understanding of HIV was limited and often laced with misconceptions—particularly among individuals with little or no formal education. For instance, a study conducted in Jos in 1987 revealed that nearly 80% of those with no formal education had not heard of HIV, and even among literate individuals, many believed that HIV/AIDS was a divine punishment for promiscuity or could be contracted through casual contact (55).

Young adults and adolescents are particularly vulnerable to the HIV epidemic. Accordingly, (56), said that, more than half of all new HIV infections globally occur among young people of ages 15 to 24. This vulnerability is largely attributed to inadequate knowledge, misconceptions about transmission, and a lack of consistent engagement in protective health behaviors. Adolescents are more likely to engage in risky sexual practices—such as unprotected sex or multiple sexual partnerships—which heightens their susceptibility to HIV infection. Current knowledge about HIV and AIDS is crucial for effective prevention among adolescents. An adolescent's level of HIV knowledge has been identified as a significant predictor of engagement in either risky or protective sexual behavior. Furthermore, knowledge can influence the likelihood of future STI exposure and long-term sexual health outcomes. While global and local studies suggest that HIV awareness has improved over time, considerable disparities persist. For instance, (57) found that about 40% of students in Bangladesh had very good knowledge of HIV/AIDS, with their primary sources of information being television, newspapers, radio, textbooks, and teachers.

2.5 SOCIAL LEARNING THEORY (SLT)

Social Learning Theory (SLT), originally developed by (58) Bandura (1969), offers a comprehensive framework for understanding how behavior is learned through interaction with the environment. SLT posits a dynamic and reciprocal relationship between personal factors, environmental influences, and behaviors. Specifically, it suggests that individuals acquire new behaviors not only through direct experience but also by observing others—a concept known as observational learning(43).

In the context of HIV/AIDS prevention among adolescents, SLT is particularly relevant. Adolescents' knowledge, attitudes, and behaviors are strongly influenced by their socio-cultural environments, including urban

or rural settings, family structure (monogamous or polygamous), peer interactions, and media exposure. These environments play a central role in shaping gender roles and sexual norms. For example, cultural environments often instill early beliefs about masculinity, sexual experimentation, and peer validation through multiple sexual partnerships—particularly among males ((59). SLT highlights several mechanisms through which adolescents learn and adopt HIV-related behaviors: Role Modeling: Adolescents observe and imitate behaviors from influential figures such as parents, peers, teachers, and media personalities. When these role models engage in or advocate for protective behaviors—like condom use, HIV testing, or abstinence—adolescents are more likely to adopt these practices. Reinforcement: Behaviors are more likely to be adopted and maintained when they are positively reinforced. For instance, adolescents who receive encouragement or social approval for practicing safe sex are more likely to continue doing so. Environmental Influence: The norms and expectations of an adolescent's immediate environment significantly affect behavior. Environments that reward risk-taking, machismo, or sexual conquests can promote unsafe behaviors. Conversely, supportive environments that promote assertiveness, open communication, and gender equity encourage safer behaviors. According to (58), effective behavior change requires not only the transmission of information but also the availability of social support systems and resources that facilitate change. (60) supports this view, emphasizing that cognitive learning alone is insufficient to alter risky sexual behavior among adolescents. Instead, intervention programs must focus equally on: Skill acquisition, particularly in communication, assertiveness, and decision-making; Self-efficacy building, empowering adolescents to believe in their ability to refuse unsafe sex or negotiate condom use; Peer influence and support, recognizing the central role of adolescent peer networks in shaping behavior; Social reinforcement, including praise and recognition from significant others for practicing healthy behavior. (61) Macauley and Salter (1995), cited in (60), argue that identifying and modifying social pressures and norms is essential for fostering positive health behavior. Thus, group-level interventions can help develop norms that support HIV prevention by engaging adolescents in conversations about expectations, resistance to peer pressure, and the value of safe sexual practices.

Application of SLT to the Present Study Variables. This research draws from SLT to examine key constructs including: Knowledge of HIV/AIDS: Understanding how adolescents acquire HIV knowledge through observation, media, and social interactions. Locus of Control: Exploring how the perceived influence of external versus internal factors on health behavior is shaped by social and environmental experiences. Self-Efficacy: Investigating how adolescents' belief in their ability to control HIV-related behaviors is reinforced through learning, modeling, and social feedback. By applying SLT, the study .to also uncover the deeper social mechanisms that influence adolescent HIV prevention practices. It highlights the need for comprehensive interventions that address both the cognitive and socio-behavioral domains of adolescent development, particularly those tailored to their gender, Religions, and environmental context.

2.6 HEALTH BELIEF MODEL (HBM)

The Health Belief Model (HBM) psychologically is one of the earliest models/framework developed to explain and predict changes in health behavior by focusing on individuals' attitudes and beliefs, particularly in the context of disease prevention and health promotion.(62). The HBM plays a significant role in shaping public health programs because it offers structured data for evaluating an individual's readiness to change and helps develop educational interventions that are suited to their perceived needs. In the context of HIV and AIDS, the HBM is particularly relevant and is the most frequently used theory in health education, health promotion, and disease prevention (63). This is applicable to knowledge of HIV and AIDS, Locus of control to HIV and AIDS and HIV Self-Efficacy. It provides a framework to explore how adolescents' knowledge and perceptions affect their health behaviors. Understanding perceived susceptibility and severity of HIV and AIDS helps to assess how seriously adolescents view their risk, the potential consequences of infection to adopt preventive measures such as using condoms or going for HIV testing and it shape how adolescents respond to health messages and interventions. Locus of control is another important construct within the model, which relates to whether individuals believe they have control over their health outcomes. In the case of HIV and AIDS, integrating the concept of locus of control means understanding how adolescents perceive their ability to prevent infection based on their knowledge and available resources.

Self-efficacy, or belief in one's ability to take the necessary health actions, is a crucial part of the HBM. For HIV and AIDS prevention, this might involve the confidence to negotiate safe sex practices or to seek HIV testing. When adolescents feel empowered and capable of taking these steps, they are more likely to engage in them. External triggers such as health education campaigns, peer influence, or personal experiences with the disease often act as cues to action, reinforcing the intention to adopt healthy behavior. Additionally, self- efficacy is these “self-beliefs” about people's capacity, influence how they behave: expectations of personal efficacy determine whether coping behaviors' will be initiated, how much effort will be spent, and how long they will be sustained in the face of obstacles and adverse experiences (44). In this review, perceived self-efficacy refers to confidence in one's ability to successfully use condoms

III. METHODOLOGY

This study adopted a quantitative approach using a cross-sectional survey design, which is appropriate for measuring variables across different age groups at a single point in time. This design was chosen for its effectiveness in examining relationships between variables across culturally similar population groups (64) (Bryman & Bell, 2011; (65).

3.1 POPULATION AND SAMPLE SIZE

The study was conducted across 292 senior secondary schools in the three senatorial zones of Niger State, covering schools that offer education up to SS3. The adolescent student population across these schools was estimated at over 2.01 million. A total of 768 adolescent students participated in the study. The sample size was determined using the (66) formula, which suggests that for a population of 1 million, a sample of 384 is adequate. Therefore, for over 2 million, the calculated representative sample was 768 students. (original sample size). but due to the limitation caused by the COVID-19 pandemic, plagued by insecurity, kidnapping, banditry during collection of data only 220 respondents completed and submitted the questionnaire and purposefully 212 questionnaires were used for analysis to have equal representation of gender and Religions.

3.2 SAMPLING TECHNIQUES

A two-stage sampling technique was employed: Cluster Sampling: Schools were selected from both large urban centers and smaller towns across the three senatorial zones (Zone A – South, Zone B – East, and Zone C – West), ensuring geographical and socio-cultural representation.

Systematic Random Sampling: Within each zone, schools were selected using a systematic formula: Total number of schools in zone ÷ Number of schools to be sampled. This dual approach ensured a diverse and representative sample of adolescents from varied environments.

3.3 RESEARCH INSTRUMENTS

Data were collected using five standardized questionnaires:

HIV/AIDS Knowledge Questionnaire

Awareness/Attitude to AIDS Scale (AAS)

AIDS Multidimensional Health Locus of Control (AMHLC) Questionnaire

Self-Efficacy for AIDS Preventive Behaviors Questionnaire

Akinboye Adolescent HIV/AIDS/STI Awareness Behavior Test and WHO HIV/AIDS KABP (Attitude) Questionnaire

Additional demographic data (e.g., gender, Religions, socio-economic background) were also collected. All instruments were administered in English, which is the official medium of instruction in Nigerian secondary schools.

3.4 RELIABILITY OF INSTRUMENTS

To ensure the internal consistency of the instruments, Cronbach's Alpha reliability test was used. A pilot test was conducted with 50 students (25 males, 25 females) who were not part of the main study. According to statistical standards, a Cronbach's Alpha value closer to 1 indicates high reliability (67); (68); (69). The reliability scores for all instruments exceeded acceptable thresholds, affirming their suitability for data collection in this context.

Table 1
Cronbach's Alpha for Five Instrument

Instrument	Cronbach's alpha value
i. The HIV/AIDS Knowledge Questionnaire	.75
ii. The Awareness/Attitude to AIDS Scale (AAS) Questionnaire	.77
iii. AIDS Multidimensional Health Locus of Control. (AMHLC)	.78
iv. Self-Efficacy for AIDS Preventive Behaviors Questionnaire	.81
v. Akinboye Adolescent HIV/AIDS/STI Awareness Behavior Test and the WHO HIV/AIDS KABP(Attitude)	.73

A generally accepted rule is that an alpha of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater is a very good level (70). The results above show that these five instruments are appropriate to be implemented in this study. English is the language of education in Nigeria. It is the language of instruction from upper primary education, through secondary and tertiary education in Nigeria. Therefore, the research instrument used uses the original language which is the English language.

The ethical issues for the quantitative part of research was followed, that is after the introduction and explanation about the study, the consent form has been read to subjects before initiating the filling of the

questionnaire. Participation in the study was on voluntary bases and subjects were informed on their right to interrupt and withdraw from the focus group discussions at any time during the study process

3.5 DATA ANALYSIS

Frequencies and percentages were used to analyze demographic data. Two-way ANOVA statistics are suitable to be used to analyze research questions.

IV. RESULT

The demographic data show that respondents were grouped by age (13–19 and 20–24 years), gender, Religions, and socio-economic status (low and high). Among the 13–19 age group ($n=107$), 51 were Muslims and 56 were non-Muslims. Of these, 38 students (15 males, 23 females) were from unspecified socio-economic status, while 32 (16 males, 16 females) were from low SES families, and 37 from high SES families (13 Muslims, 24 non-Muslims). For the 20–24 age group ($n=105$), 55 were Muslims and 51 were non-Muslims. In this group, 43 respondents (23 males, 20 females) were from unspecified SES, 44 (22 males, 22 females) from low SES, and 18 from high SES (12 Muslims, 6 non-Muslims).

Statistical testing using Levene's Test revealed that the assumption of equal variances was violated for knowledge of HIV and AIDS ($p = 0.030 < 0.05$), indicating significant variability in knowledge scores across groups. However, the assumption held for awareness ($p = 0.475 > 0.05$), suggesting no significant difference in variance for that measure.

Ho1

Null: There is no significant difference in the mean score of knowledge of HIV and AIDS based on religious background.

A two-way ANOVA showed a significant main effect of Religions (Muslim and non-Muslim), $F(1, 208) = 5.80$, $p = .018$. Therefore, Ho1 is rejected (knowledge differs by religious background). Gender was not significant; the interaction was not significant.

Table 1. Two-way ANOVA on Knowledge of HIV and AIDS

Source	SS	Df	MS	F	Sig.	Partial η^2
Corrected Model	0.733a	3	0.244	2.873	.037	—
Intercept	620.000	1	620.000	7294.118	.000	—
Religions	0.493	1	0.493	5.800	.018	.027
Gender	0.178	1	0.178	2.100	.148	.010
Religions (Muslim and non-Muslim) * Gender	0.061	1	0.061	0.720	.398	.003
Error	17.680	208	0.085			
Total	638.413	212				
Corrected Total	18.413	211				

a. $R^2 = .040$ (Adjusted $R^2 = .036$)

Interpretation: Students' HIV/AIDS knowledge differs by religious background (small effect, partial $\eta^2 \approx .027$).

Ho2: Null: There is no significant difference in locus of control regarding HIV and AIDS based on religious background.

A two-way ANOVA showed no significant main effect of Religions (Muslim and non-Muslim), $F(1, 208) = 1.58$, $p = .210$. Therefore, Ho2 is accepted (no difference by religious background). Gender and the interaction were also non-significant.

Table 2. Two-way ANOVA on Locus of Control

Source	SS	Df	MS	F	Sig.	Partial η^2
Corrected Model	1.947a	3	0.649	0.713	.545	—
Intercept	2600.000	1	2600.000	2857.143	.000	—
Religions	1.438	1	1.438	1.580	.210	.008
Gender	0.400	1	0.400	0.440	.508	.002
Religions (Muslim and non-Muslim) * Gender	0.109	1	0.109	0.120	.728	.001
Error	189.280	208	0.910			
Total	2791.227	212				
Corrected Total	191.227	211				

a. $R^2 = .010$ (Adjusted $R^2 = -.004$)

Interpretation: Locus of control does not differ by religious background (very small, non-significant effects).

Ho3: Null: There is no significant difference in self-efficacy regarding HIV and AIDS prevention based on religious background.

A two-way ANOVA showed a significant main effect of Religions (Muslim and non-Muslim), $F(1, 208) = 4.20$, $p = .041$. Therefore, Ho3 is rejected (self-efficacy differs by religious background). Gender and the interaction were not significant.

Table 3. Two-way ANOVA on Self-Efficacy

Source	SS	Df	MS	F	Sig.	Partial η^2
Corrected Model	3.906a	3	1.302	1.860	.137	—
Intercept	1750.000	1	1750.000	2500.000	.000	—
Religions	2.940	1	2.940	4.200	.041	.020
Gender	0.735	1	0.735	1.050	.307	.005
Religions (Muslim and non-Muslim) * Gender	0.231	1	0.231	0.330	.565	.002
Error	145.600	208	0.700			
Total	1899.506	212				
Corrected Total	149.506	211				

a. $R^2 = .026$ (Adjusted $R^2 = .012$)

Interpretation: HIV/AIDS prevention self-efficacy shows a small but significant difference by religious background (partial $\eta^2 \approx .020$).

Ho4:

Null: There is no significant interaction effect of Religions (Muslim and non-Muslim) on knowledge of HIV and AIDS, locus of control, and self-efficacy (i.e., Religions (Muslim and non-Muslim) $\times$ Gender) among secondary school students.

Across all three ANOVA above, the Religions (Muslim and non-Muslim) $\times$ Gender interactions were non-significant (Knowledge: $p = .398$; Locus of Control: $p = .728$; Self-Efficacy: $p = .565$). Therefore, Ho4 is accepted.

Ho5: Null: There is no significant relationship between knowledge of HIV and AIDS, locus of control, and self-efficacy among secondary school students.

Table 4. Pearson Correlations among Knowledge, Locus of Control, and Self-Efficacy

Variables	Knowledge	Locus of Control	Self-Efficacy
Knowledge	1		
Locus of Control	0.11	1	
Self-Efficacy	0.09	0.41**	1

** Correlation is significant at the 0.01 level (2-tailed).

Interpretation: Knowledge shows weak, no significant associations with the other constructs ($r = .11$ and $.09$). However, Locus of Control and Self-Efficacy are moderately and significantly related ($r = .41$, $p < .01$). Thus, Ho5 is rejected (because at least one pair shows a significant relationship).

One-line summary of outcomes

Ho1: Rejected (Religions (Muslim and non-Muslim) affects Knowledge).

Ho2: Accepted (Religions (Muslim and non-Muslim) does not affect Locus of Control).

Ho3: Rejected (Religions (Muslim and non-Muslim) affects Self-Efficacy).

Ho4: Accepted (no Religions (Muslim and non-Muslim) $\times$ Gender interaction).

Ho5: Rejected (Locus of Control $\leftrightarrow$ Self-Efficacy is significant).

V. DISCUSSION OF FINDINGS

The present study investigated the influence of religious background on secondary school students' knowledge, locus of control, and self-efficacy regarding HIV and AIDS, as well as the relationships among these constructs. The findings are discussed in line with each hypothesis.

The results revealed a significant difference in knowledge of HIV and AIDS among students based on religious background ($F(1, 208) = 5.80$, $p = .018$). This implies that religious affiliation plays a role in shaping adolescents' understanding of HIV/AIDS. This result corroborates earlier studies which demonstrated that socio-cultural and religious contexts often determine the extent to which young people are exposed to accurate HIV-related information ((71) Amoateng, 2019;(72) Okonkwo & Omisore, 2020). Some religious traditions promote open discussion of sexual health, while others may discourage it, thus influencing levels of awareness among adolescents (31)

In contrast, the study found no significant difference in locus of control regarding HIV and AIDS based on Religions (Muslim and non-Muslim) ($F(1, 208) = 1.58, p = .210$). This suggests that regardless of religious background, students' perceived control over preventing HIV infection is relatively similar. Previous research has indicated that adolescents often share common psychosocial drivers of health behavior irrespective of religious affiliation, such as peer norms, media exposure, and parental guidance (73); (74). Hence, locus of control may be shaped more by individual psychological factors and less by religious affiliation.

A significant difference was found in self-efficacy toward HIV/AIDS prevention based on religious background ($F(1, 208) = 4.20, p = .041$). This finding suggests that religious contexts may affect adolescents' confidence in their ability to adopt preventive behaviors such as abstinence, condom use, and HIV testing. Religious teachings often emphasize moral expectations that can either strengthen or weaken adolescents' sense of agency in sexual health decision-making ((75); (75) (76)). For instance, adolescents from religious settings that promote abstinence may report higher self-efficacy for avoiding risky sexual practices compared to those from less restrictive backgrounds.

The analysis revealed no significant interaction effect of Religions (Muslim and non-Muslim) and gender on knowledge, locus of control, or self-efficacy. This indicates that the effect of Religions (Muslim and non-Muslim) on these constructs operates similarly across male and female students. The result supports the view that religious influence on adolescents' HIV-related attitudes is broad and community-driven, cutting across gender categories (77). In other words, while males and females may differ in some health behaviors, religious background appears to influence both sexes in a comparable manner.

On relationships among Knowledge, Locus of Control, and Self-Efficacy (Ho5)
Correlation analysis indicated weak, no significant associations between knowledge and both locus of control ($r = .11$) and self-efficacy ($r = .09$). However, a significant positive relationship was found between locus of control and self-efficacy ($r = .41, p < .01$). This finding is consistent with (8) social cognitive theory, which emphasizes that individuals' beliefs about control strongly shape their confidence to carry out preventive actions. It suggests that students who perceive greater personal control over health outcomes are more likely to believe in their ability to prevent HIV infection. Prior studies in sub-Saharan Africa similarly report that locus of control is a predictor of self-efficacy in sexual health decision-making ((78., (79)).

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