

Self Esteem, Anxiety and Gender as Predictors of Attitude towards Voluntary Counselling and Testing of HIV/AIDS among Nigeria Undergraduates

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Abstract. The study examined self-esteem, anxiety and gender as predictors of attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. The study utilizes purposive sampling technique to select 200 undergraduates. Self-esteem Scale (SS), Anxiety Scale (AS) and HIV/AIDS Voluntary Counseling and Testing Attitude Scale (HVCTS) were used for the study. The study adopted a predictive design and multiple linear regression analysis was used for data analysis. The result showed that the ages of the participants ranged from 17 to 28 years, with a mean age of 23. It equally showed that self-esteem had a mean score 24.50, anxiety had a mean score of 23.25, gender had a mean score of 14.10 and HIV/AIDS Voluntary Counseling and Testing had a mean score of 33.48. Furthermore, it showed that anxiety significantly predicted attitude of undergraduates towards voluntary counseling and testing of HIV/AIDS ($t=0.030$, $p<.05$), self-esteem significantly predicted attitude of undergraduates towards voluntary counseling and testing of HIV/AIDS ($t=0.010$, $p<.05$) but gender did not significantly predict attitude of undergraduates towards voluntary counseling and testing of HIV/AIDS ($t=0.082$, $p<.05$). The finding showed that self-esteem and anxiety significantly predicted the attitude of undergraduates towards voluntary counseling and testing of HIV/AIDS but gender of the undergraduates did not predict attitude towards voluntary counseling and testing of HIV/AIDS.

Keywords: Self-esteem, Anxiety, Gender, Attitude, Voluntary Counselling and Testing of HIV/AIDS, Undergraduates

Introduction

Human Immunodeficiency Virus (HIV) counselling and testing has been identified as the key entry point to care, treatment and support services according to United State Agency for International Development (USAID, 2014). It is the entry point whereby people learn whether they are infected with HIV or not, and are helped to understand the implications of their HIV status and make informed choices for the future (USAID, 2014). Voluntary HIV counselling and testing (VCT) was acknowledged as an efficacious and pivotal strategy for both HIV and AIDS prevention and care (USAID, 2014).

Sub-Saharan Africa with just 10% of the world's population has the greatest burden of disease which is 68%. In the year 2009, about 1.8 million adults and children were infected, contributing to a total of 22.5 million people living with HIV in the region. Women are particularly affected with South African accounting for about 40% of the global women living with the disease. More than 90% of the children infected are babies born to women with HIV, who acquire the virus during pregnancy, labour, delivery or through breast milk (UNAIDS, 2010).

The first case in Nigeria was reported in 1986 and since then, it has rapidly spread to every community in the country, reaching exponential levels with a national estimate of

HIV/AIDS prevalence rate of 3.7% in 2011, this translated to an estimated 3.4 million people living with HIV/AIDS in Nigeria as at the end of 2011 (UNAIDS, 2011).

Although substantial effort is in place to control the spread of the virus, the transmission is still on going with devastating effects on communities, countries and the world at large, there is therefore the need for concerted efforts towards tackling this menace. Over the past decade, the rapid expansion of antiretroviral treatment (ART) in Africa and Asia has dramatically reduced HIV-related morbidity and mortality, and transformed HIV into a chronic illness (WHO, 2011).

Global health initiatives such as the United States (US) President's Emergency Program for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) have responded to the HIV pandemic by expanding the provision of ART to the increasing number of affected patients (UNAIDS, 2008). This has resulted in the expansion of treatment and prevention programs that have increased ART access to previously un-served and underserved populations. Nigeria is one of the target countries for these international programs and is also a country with strong local political support for these initiatives (UNAIDS, 2008).

The development and widespread use of antiretroviral therapy (ART) as the treatment of choice in HIV has significantly improved the health condition of HIV positive individuals who could have untimely death. The ART however, has transformed the perception of HIV/AIDS from a fatal incurable disease to a manageable chronic illness. This causes improvement in immunologic status and reduction in the viral load (Erb, 2000) which consequently reduce the incidence of hospitalization and mortality (Paterson, 2000).

Antiretroviral treatment (ART) aims to provide relief to HIV-infected individuals by reducing the likelihood of opportunistic infections rather than curing the disease. Since 1996 the introduction of ART has significantly improved the lifespan and quality of life for people living with HIV (PLWH) (Amico, 2005). Better ART has led to a reduction in disease progression, but around 25% of new HIV cases are regimen resistant (DoH, 2001). Hence, HIV is still a life threatening and lifelong infection. Again, the spread of these diseases continue to spread unabated possibly due to poor attendance to Voluntary Counselling and Testing (VCT).

Although the general knowledge of HIV awareness is reported as high (90%) across various studies (Nzioka and Ramos, 2018; Mbugua, 2014), there has been only 20% reduction in sexual risk behaviour among the populations at risk. This calls for initiatives to reduce the trend of HIV infection among the populace. Despite various attempts to tilt the trend of HIV prevalence by the governments around the world, there is still need to worry about the disease because no cure has yet been found.

HIV is still perceived as a huge national and global challenge and is still being viewed as a defining public health crisis of our time (Yahaya, Jimoh, & Balogun, 2014). In the early 1990s, the World Health Organization (WHO) projected that by the year 2000, about 26 million individuals would be infected worldwide, with about 90% coming from low-income countries (Yahaya *et al.*, 2014). This projection sadly became an undeniable truth, as many searches into the literature showed a rapid increase in HIV prevalence in low-income countries. This further confirmed the WHO projection (Yahaya *et al.*, 2014), with Nigeria conspicuously occupying the second position in the list of countries with the greatest disease prevalence and number of AIDS-related deaths (National Agency for the Control of AIDS (NACA), 2014).

Approximately 2.0 million people were infected with HIV globally in 2014, the lowest incidence since the year 1990 (WHO, 2015). Africa as a continent and Nigeria as a country have made giant strides in slowing the spread of the disease and in the reduction of disease mortality (WHO, 2015). Current estimates reveal a 41% reduction in the number of new infections in Africa between the years 2000 and 2014 (WHO, 2015). However, there is a need to further reduce the spread of HIV (NACA, 2014; Yahaya *et al.*, 2014). While it can be said

that substantial gains have been made in the high-income countries to slow down the mortality of this dreaded disease, the same cannot be said of low-and middle-income countries (LMIC) like Nigeria (NACA, 2014). Moreover, as the pace of globalization and immigration continues to increase, the burden of HIV illness will require further attention.

HIV is a long-term killer disease. It wipes the family and country's human economic resources, especially the youth who are the nation's future development reservoir (Yahaya *et al.*, 2014). The United Nations General Assembly Special Session on HIV and AIDS Declaration of Commitment had agreed to reduce HIV infection rates among 15-24 year-olds globally by 25% by the year 2015 (UNGASS, 2011). The UNGASS declaration called for vastly expanded access to information and education, especially youth-specific HIV and AIDS education which is necessary to develop life skills required to reduce risk and vulnerability to HIV infection. The realization of this ambitious initiative is not forthcoming as cited in the prevalence rates of the disease recently.

According to the Joint United Nations Programme on HIV/ AIDS (UNAIDS) (2010), nearly 12 million young people, aged 15 to 24 in the world are living with HIV and AIDS, and more than 7,000 young people become infected with HIV every day (Boswell & Baggaley 2012). Young people have limited access to information and services. In 2008, an estimated 45% of new infections occurred globally among young people aged between 15 and 24 years (UNAIDS 2008). In 2010, young girls and young women aged 15-24 years were more vulnerable to HIV infection than older men and women (UNAIDS 2010). According to Lyons (2015), 60% of these young people are adolescents between 14 and 19 years of age.

While a definition of youth can vary widely, we have used an age definition that is widely used and allows for appropriate comparisons to be made. Specifically, youth refers to young people between 9 and 24 years of age (Breinbauer & Maddaleno, 2015). Youth account for 45% of all new infections of HIV globally, with almost 90% of this number living in sub-Saharan Africa (UNAIDS, 2018). The most critical finding has been that relative to 2002, when the prevalence of HIV among 15-24-year-olds was 12.0%, in 2005, the overall prevalence for 15-24-year-olds in South.

The majority of this youth are university students, they are at risk of HIV infection due to their involvement in unsafe sex (Boswell & Baggaley 2012). HIV infection from the unsafe injection of drugs, exposure to contaminated blood products or unsterilized skin-piercing procedures also put youth at risk (Boswell & Baggaley 2012). Moreover, youth were particularly vulnerable to HIV due to the strong influence of peer pressure and the development of their sexual and social identities that often led to experimentation (Federal Ministry of Health (FMOH) and Federal HIV/AIDS Prevention and Control Office (HAPCO) 2017). Counselling for safe sexual practices for youth is vital before initiation of sexual relations (FMOH and Federal HAPCO 2017). Youth counselling also helps to delay their sexual debut and increase the practice of abstinence (FMOH and Federal HAPCO 2017).

One of the strategies employed by some LMIC, such as Zambia and Zimbabwe, to help combat HIV was to encourage people, especially those living in rural areas, to be counselled and tested (Osborn & Obermeyer, 2016; Yahaya *et al.*, 2014). The uptake of HIV testing and counselling is crucial for any progress to be made in the prevention and management of the disease (Matovu & Makumbi, 2017; Yahaya *et al.*, 2014). When infected patients are diagnosed early, they are more likely to use the management program and subsequently reduce the likelihood of spreading the disease in their communities. In other words, the earlier individuals undergo testing and counselling, the better their chances of experiencing a better quality and length of life (Matovu & Makumbi, 2017).

Katibi and Adegoke (2013) studied university students in north central Nigeria and revealed a rising number of infections among this group. Even though there was a high level of disease awareness among the youth, very few actively sought voluntary HIV counselling

and testing (VCT) services. Some of the reasons for the low uptake included accessibility, knowledge and the awareness level of VCT, fear, and stigma. Interestingly, very few studies have been done to examine psychological factors that determine the attitude of youth towards voluntary HIV counselling and testing. Even though various authors have shown that increasing VCT services is one of the most critical pathways to reducing HIV prevalence, little is known about the psychological factors that make youth seek HIV counselling and testing (Matovu & Makumbi, 2017; Yahaya et al., 2014). Some of these psychological factors may include anxiety, self-esteem and gender.

According to Mary (2010), anxiety is a vague apprehension or uneasiness (which cannot be explained) and a high level of emotionality. It is characterized by feelings of uncertainty and helplessness. Seligman, (2001) defined it as a physiological state characterized by cognitive, somatic, emotional and behavioural components which combine to create sweating, dizziness, head-aches, racing heartbeats, nausea, fidgeting, drumming on a desk, fear, apprehension and worry. Furthermore, Spilberger and Sarason (2009) saw anxiety as a situation specific trait that refers to the emotional states and worry conditions that are experienced during some situations such as HIV counselling and testing. University students who experience high anxiety will most likely withdraw from seeking HIV counselling and testing services.

Another factor that predisposes university students from seeking HIV counselling and testing services is self-esteem. Self-esteem is a subjective personal valuation. It shows a cognitive attitude and emotional feeling about one's own ability, significance, and worth (Kwon, Kang & Kim 2018). Self-esteem is related to feelings and thinking of one individual about his own value and competencies, which reflect a positive or negative attitude about himself. Self-esteem is crucial and is a cornerstone of a positive attitude towards living. It is very important because it affects how one thinks, acts and even how a person relates to other people. Low self-esteem means poor confidence and that also causes negative thoughts which mean that the individual is likely to give up easily rather than face challenges. Self-esteem is considered one of the factors that predisposes youths from seeking HIV counselling and testing services behavior. People with low self-esteem will most likely withdraw from seeking HIV counselling and testing services because they exhibit poor confidence and negative thoughts about themselves.

Turning to gender, Myers (2002) defined gender as the characteristics, whether biological or socially influenced, by which people define male or female. Interest in the impact of gender on VCT has attracted mixed reports. While some proposed that males withdraw more from seeking HIV counselling and testing services, others argue that the reverse is the case, and still others say that the difference in seeking HIV counselling and testing services between the two is insignificant. By and large, this research is targeted at uncovering the roles played by anxiety, self-esteem and gender in voluntary HIV counselling and testing services among undergraduate students.

Theoretical Framework

Health Belief Model

The Health belief model, developed in the 1950s by Hochbaum, Rosenstock and Kegels, holds that health behaviour is a function of an individual's socio-demographic characteristics, knowledge and attitudes. According to this model, a person must hold the following beliefs in order to be able to change behaviour:

- (i) Perceived susceptibility to a particular health problem ('am I at risk for HIV?').
- (ii) Perceived seriousness of the condition ('how serious is AIDS; how hard would my life be if I get it?').

(iii) Belief in effectiveness of the new behaviour ('condoms are effective against HIV Transmission').

(iv) Cues to action ('witnessing the death or illness of a close friend or relative due to AIDS').

(v) Perceived benefits of preventive action ('if I start using condoms, I can avoid HIV infection').

(vi) Barriers to taking action ('I don't like using condoms').

In this model, promoting action to change behaviour includes changing individual personal beliefs. Individuals weigh the benefits against the perceived costs and barriers to change. For change to occur, benefits must outweigh costs. With respect to HIV, interventions often target perception of risk, beliefs in severity of AIDS ('there is no cure'), beliefs in effectiveness of condom use and benefits of condom use or delaying onset of sexual relations (UNAIDS, 1999).

Cognitive Interference Theory (CIT)

Cognitive interference theory by Underwood in (1915) was developed to understand how anxiety influences cognitive functioning. Proponents of CIT postulated that performance tasks can lead to an increase in evaluation/test anxiety which in turn leads to an increase in negative self-statements. The cognitive interference model suggests that individuals with high levels of test anxiety perform poorly in large part due to an inability to suppress competing thoughts during activity. The theory was derived from findings that individuals with high levels of test anxiety are more likely to worry about the outcome of HIV tests, compare their abilities to others or dwell on the notion that they do not know what the outcome would be (Cassady & Johnson, 2012). However, it appears that individuals with high levels of anxiety are either constraining their attention to inappropriate cues for the task or are incapable of restricting their attention to the range of cues allowing competing thoughts to enter conscious awareness and interfere with performance (Schwarzer & Jerusalem, 2002).

The model of test anxiety developed through an information processing view extends the traditional cognitive interference model by examining the full range of cognitive functions that may interfere with optimal performance (i.e. poor encoding and storage skills). For these students, declines in HIV counseling and testing have been attributed to a combination of (a) an inability to effectively process or retrieve necessary information and (b) heightened anxiety brought upon by metacognitive awareness of a lack of preparation, ability or fear of uncertainty (Desiderato & Koskinen, 2009).

Additive Model of Test Anxiety

The additive model of test anxiety by Friedman Werner (1981) asserts that the Common situational factors include low self-confidence for specific tasks. Their study induced various levels of self-awareness during a performance task to stimulate salient cognitive interference. Anxious students reported high levels of concern about HIV counseling and testing (Kurosawa & Harackiewicz, 2005), revealing the stable trait component of anxiety. However elevated levels were accompanied by performance decrements only in conditions where cognitive interference was induced by high levels of self-awareness (i.e. being videotaped) during the evaluative task (Kurosawa & Harackiewicz, 1995). Therefore, the results demonstrated that interference leads to decreased performance in anxious students, but the impact of interference is prevalent primarily in specific conditions where the level of self-awareness during Evaluation is high. The impact of interference is prevalent primarily in specific conditions where the level of self-awareness during evaluation is high.

Self-Schema Model of Self Esteem

The schema model provides insights into the nature of the self- concept that can be used to clarify relationships among the cognate subsystem and aspects of the self-concept mode. Based on the schema model, the self-concept could be defined as a person's total collection of cognitions about the self-including current self-schemas that focus on body image and future-oriented possible selves including the desired or ideal selves. Given that self-schemas and possible selves are functional information processors and regulators of behavior, these components of the self-concept could be reasonably conceptualized as part of the cognate subsystem. Rather than viewing the current and future-oriented self-conceptions as expressions of the cognate and regulator processing, they would be considered a functional part of the cognate subsystem. They would be defined as the structural foundation of the information processing sequence that directs the focus of attention and serve as the internal framework shaping interpretation and response to incoming stimuli. The self-concept mode would then refer to the emotional and behavioral outcomes of the self-concept information processing sequence and would include phenomena such as feelings of self-consistency, self-worth or self-esteem, moral-ethical-spiritual behaviors, and affective states such as anxiety.

One advantage of this change is that there would be a clear delineation between the structural components of the self-concept and their behavioral consequences. Furthermore, because the schema model specifies mechanisms that link the self-concept to emotional and behavioral responses, it would allow a more detailed specification of how components of the cognate subsystem function to impact the self-concept mode.

It is an established truth for every student to exhibit a certain degree of self-esteem, but it tends to be an impediment when it is inordinate. Again, a student's degree of self-esteem can correlate the attitude the student put on. This is because it could affect some kinds of behaviour such as willingness for HIV testing and counseling.

Statement of the Problem

HIV/AIDS is a chronic and devastating disease of global public health concern (UNAIDS, 2013). The disease has been declared a global public health emergency by the World Health Organization. Since its discovery, HIV still remains one of the most challenging pandemic facing the world. The pandemic has caused millions of deaths worldwide and has crippled the lives of many more. As of 2019, 1.8 million people in Nigeria were living with HIV. Women were the most affected group, counting about one million individuals. Children up to 14 years who were HIV positive equaled to 150 thousand (UNAIDS, 2020).

Sub-Saharan Africa still tops the lead among the regions of the world affected by HIV, accounting for two-thirds of the global burden of disease. It is estimated that people infected by the virus in Sub-Saharan Africa stands at about 25 million adults and children, accounting for nearly 70% of the global total. Nigeria has its share of the burden from this epidemic with an estimated 1.8 million people living with HIV (UNAIDS, 2020). The country ranks as one of the countries with the highest burden of HIV in the world, next only to South Africa (UNAIDS, 2020).

Youths lifestyles and characteristics are likely to predispose them to HIV and STIs infection, despite this predisposing factor, their VCT accessibility is reported as low (CHE Executive consultative forum, 2010). Although there have been massive prevention campaigns and efforts regarding HIV/AIDS, yet the infection rate among youth does not seem to be decreasing. The youth are the most vulnerable group affected and the disease has been claiming many lives and national potential workforce (WHO, 2012). Despite the increasing number of VCT services in Nigeria, the number of youths attending the services provided in these facilities remains low and has signified a marginal pace and underutilization (NACA, 2011).

This situation is controversial and raises a concern as to why the youth are not attending VCT services given that these services are provided free of charge.

HIV testing is an important aspect in a person's life since it enables one to live with a clear conscience. One is aware of his/her status and can therefore go about his/her daily activities with a clear mind. However, there are some hindrances which pose a challenge when one wishes to have an HIV test. The most common ones are fear of discrimination, stigma and fear of an early death according to the National AIDS and Sexually Transmitted Infection (STI) Control Programme (NASCO, 2004). These hindrances make people conceal their desire of getting tested from significant others like relatives, spouses and friends who might give the necessary encouragement to undergo the test. However, there have been claims of other psychological factors playing a role on VCT attitude of individuals such as personality. The need to empirically validate this claim informed the decision into the research on the roles played by anxiety, self-esteem and gender in voluntary counselling and testing of HIV/AIDS.

Purpose of the Study

The general purpose of this study was to examine self-esteem, anxiety level and gender as predictors of the attitude of youths towards voluntary counseling and testing of HIV/AIDS. The specific objectives for this study include the following:

1. To examine the roles of self-esteem in predicting attitude towards voluntary counselling and testing of HIV/AIDS among undergraduates.
2. To examine the roles of anxiety in predicting attitude towards voluntary counselling and testing of HIV/AIDS among undergraduates.
3. To examine the roles of gender in predicting attitude towards voluntary counselling and testing of HIV/AIDS among undergraduates.

Hypotheses

1. Self-esteem will significantly predict attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.
2. Anxiety will significantly predict attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.
3. Gender will significantly predict attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.

Methods

Participants

A total of 200 students participated in the study. These students were drawn from 5 faculties in Nnamdi Azikiwe University, Awka. Out of the five faculties drawn, the researcher used a purposive sampling technique to select the Faculty of Social Sciences. The departments under this faculty are Psychology, Political Science, Sociology and Anthropology, Economics and Mass Communication. Furthermore, purposive sampling technique was used to select 40 respondents from each department making a total of 200 participants. The ages of the participants ranged from 17 to 28 years and the mean age was 23 years.

Instruments

Three standardized instruments were adopted for this study. They are Anxiety Scale (AS), Self-esteem Scale (SS) and HIV/AIDS voluntary counselling and testing attitude Scale (HVCTS).

Self-esteem Scale (SS)

It consists of 10 items that measure self-worth by measuring both positive and negative feelings about the self. It was developed by Rosenberg (2003). The items are scored on a 4-point Likert response pattern ranging from SA = Strongly Agree, A = Agree, D = Disagree and SD = Strongly Disagree. The developers reported test-retest coefficient of reliability with a time interval of 14 months. The developers reported an alpha coefficient of 0.78 for the internal consistency reliability of the 10-items. The present researcher obtained an internal consistency (Cronbach's alpha) reliability of 0.67 using 40 participants. This showed that the instrument was valid for the study.

Anxiety Scale (AS)

It consists of 24 items that measure one's anxiety and other individual differences. It was developed by Caballo, Salazar, Irurtia, Arias & CISO-A Research Team (2012). The items are scored on a 4-point Likert response pattern ranging from 0 = None, 1 = Mild, 2 = Moderate and 3 = Severe. The developers reported test-retest coefficient of reliability with a time interval of 16 months. The 24-item inventory is designed to assess the anxiety level of students. The developers reported an alpha coefficient of 0.92 for the internal consistency reliability of the 24-items. The present researcher obtained an internal consistency (Cronbach's alpha) reliability of 0.69 using 40 participants. This showed that the instrument was valid for the study.

HIV/AIDS Voluntary Counselling and Testing Attitude Scale (HVCTAS)

The final instrument is HIV/AIDS Voluntary Counselling and Testing Attitude Scale. It consists of 30 items that measure the attitude of undergraduates towards VCT of HIV/AIDS such as frequent VCT visitation or withdrawal from accessing such services. It was developed by Mbanefo and Onyejiaka (2010). The items are scored on a 5-point Likert response pattern ranging from 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree and 1 = Strongly Disagree. The present researcher obtained an internal consistency (Cronbach's alpha) reliability of 0.81 using 40 participants. This showed that the instrument was valid for the study.

Procedure

The researchers conducted a pilot study to establish the reliability of the instruments. All participants provided informed consent after receiving an explanation of the purpose of the study. The participants were asked to complete the questionnaires. All the respondents were instructed to read the questionnaire items carefully and choose the responses that best described themselves. Likert's points scale of (SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree and SD-Strongly Disagree) were used. The choice of the study sample level was due to the belief that certain factors predict VCT attitude among undergraduates' students which relates to the purpose of the study. For effective administration of the questionnaire, rapport was created within the participants, and they responded to the questionnaire sincerely and appropriately as the statement applied to them. Two hundred (200) questionnaires were distributed and were collected back for data analysis.

Research Design and Statistics

The research adopted a predictive design. Based on the research design, the researchers employed the statistical tool of Multiple Linear Regression for data analysis and testing of the hypothesis of this study.

Results

Table 1: Summary table of Mean and Standard deviations of self-esteem, anxiety, gender and HIV/AIDS voluntary counselling and testing

Descriptive Statistics

Predictor Variables	Mean	Std. Deviation	No
Self-esteem	24.5002	1.4202	200
Anxiety	23.2503	1.3112	200
Gender	14.1006	1.0903	200
HIV/AIDS Voluntary Counselling and Testing	33.4812	1.42512	200

Table 1 above shows the mean scores and standard deviation of the participants across the variables. On self-esteem, the participants had a mean score 24.50 and standard deviation of 1.42. On the anxiety, the participants had a mean score of 23.25 and standard deviation of 1.31, on the gender, the participants had mean score of 14.10 and standard deviation of 1.09 and on the HIV/AIDS Voluntary Counselling and Testing, the participants had a mean score of 33.48 and standard deviation of 1.43.

Table 2: Summary table of Multiple Linear Regression of self-esteem, anxiety, gender and with Voluntary Counselling and Testing

Predictor Variable	B	Standard error	Beta	T	Sig
Self-esteem	1.4	.20	1.0	0.017	.010
Anxiety	3.6	.04	.70	0.015	.030
Gender	1.4	.08	.60	0.104	.082

Note: Dependable Variable: HIV/AIDS Voluntary Counselling and Testing

Hypothesis I which states that self-esteem significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates is confirmed and accepted ($t=0.01$, $p<.05$). From the analysis, it could be confirmed that significant differences were observed across the self-esteem on attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. The finding implies that self-esteem significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.

Hypothesis II which states that anxiety significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates is confirmed and accepted ($t=0.03$, $p < .05$). From the analysis, it could be confirmed that significant differences were observed across anxiety on attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. It implies that anxiety significantly predicted attitudes towards voluntary counseling and testing of HIV/AIDS among undergraduates.

Hypothesis III which states that gender significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates is rejected ($t=0.082$, $p<.05$). From the analysis, it could be confirmed that significant differences were not observed across gender on attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. It implies that gender significantly did not predict the attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.

Discussion

This study examined the influence of self-esteem, anxiety and gender as predictors of attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. Results showed that self-esteem and anxiety significantly predicted the attitude of undergraduates

towards voluntary counseling and testing of HIV/AIDS but gender did not predict the attitude of undergraduates towards voluntary counseling and testing of HIV/AIDS.

Hypothesis one which states that self-esteem significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates was accepted. It implies that self-esteem significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. This finding agrees with the work of Gadegbeku, Saka, & Mensah (2013) that conducted a study in Ghana to examine the relationship between self-esteem and the attitude of youths towards VCT in the nation's capital. The finding revealed that self-esteem had an influence on the attitude of youths towards VCT. The finding of the work is also in line with the work of Wakato (2007) who carried out a study to ascertain the influence of self-esteem and gender on the young people's attitude towards VCT services. It was a cross-sectional design. The findings revealed that self-esteem and gender significantly influence VCT services seeking behaviour of the youths. This study by the above authors therefore is an affirmation of the findings of the current study emphasizing the role of self-esteem on attitude towards VCT of HIV/AIDS among undergraduates.

Hypothesis two which states that anxiety significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates was accepted. This implies that anxiety significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. This finding agrees with the study done by Salako *et al.* (2013) who conducted a study in a southwestern area of Nigeria to ascertain the relationship between anxiety and attitude of youths towards VCT services. It revealed that there is a prediction between anxiety and VCT seeking behaviour. The finding of the study also confirmed with the work of Wakato (2007), who carried out a study to ascertain the influence of anxiety on youth's attitude towards VCT services. The findings revealed that anxiety of individuals significantly has an influence on the VCT services seeking behaviour of the youths. This study by the above authors therefore is an affirmation of the findings of the current study emphasizing the role of anxiety in predicting attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.

Hypothesis three which stated that gender significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates was rejected. It implies that gender did not predict attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. This finding agrees with the study done by Oyodele (2009) who carried out a study to determine the factors affecting the willingness of people towards VCT services. The study revealed that willingness to seek VCT services had nothing to do with age, gender and work status. The study also complied with the work of Iliyasu *et al.* (2016) who conducted a study in a rural community in northern Nigeria to investigate the extent of HIV knowledge among adults and gender difference in their attitudes towards VCT. The findings discovered that women showed more willingness to access VCT as compared to their male counterparts but no significant difference was observed. This study by the above authors therefore is in an affirmation of the findings of the current study emphasizing that gender did not play a role in predicting attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.

Implication of the Study

The findings imply that the anxiety and self-esteem of undergraduate students will always influence their choice and willingness to seek VCT services. However, the willingness to seek VCT services is not determined by the gender of the undergraduates.

Also, it has implications on the fact that relevant school authorities should employ the services of psychologists in order to assist in achieving these aims and objectives in respect to willingness to seek VCT services so as to reduce HIV/AIDS morbidity and mortality. Finally,

it has implication on the need for the public authorities involved in the HIV/AIDS control, non-governmental organization and civil society organizations to fashion out modalities that would help to promote willingness to seek VCT services, so that those who are positive could be identified early and enrolled on heart to heart care to prevent HIV/AIDS.

Recommendations

Based on the findings of this study, the researcher recommends that Voluntary HIV Counselling and testing services should be made youth friendly to enable more youth participation. Voluntary HIV counsellors should also pay attention to the emotional needs of the undergraduates so as to find a way to advise them properly. Voluntary HIV Counselling and testing services should be included in the academic curriculum of the university to enable students to be taught on the dangers and effects of not going for HIV/AIDS test. Seminars and talk shows should be conducted among the various student groups and clubs to enable them to get informed properly on the need to seek HIV counselling and testing services.

Conclusion

This study investigated self-esteem, anxiety and gender as predictors of attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. It further investigated the roles of self-esteem in predicting attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates, roles of anxiety in predicting attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates and roles of gender in predicting attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates. The findings showed that self-esteem and anxiety significantly predicted attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates but gender did not predict attitude towards voluntary counseling and testing of HIV/AIDS. The findings of other authors are in affirmation of the findings of the current study emphasizing the influence of self-esteem and anxiety on attitude towards voluntary counseling and testing of HIV/AIDS among undergraduates.

References

- Adeoye-Agboola, D. I., Evans, H., Hewson, D. & Pappas, Y. (2016). Factors influencing HIV disclosure among people living with HIV/AIDS in Nigeria: A systematic review using narrative synthesis and meta-analysis. *Public Health*, 136, 13 - 28.
- Agardh, A., Cantor-Graae, E., & Ostergren, P. (2012). Youth, sexual risk-taking behavior and mental health: A study of university students in Uganda. *International Journal of Behavioral Medicine*, 19(2), 208 - 216.
- Alemu, S., Abseno, N., Degu, G., Wondmikun, Y., & Amsalu, S. (2005). Knowledge and attitude towards voluntary counselling and testing for HIV: A community-based study in northwest Ethiopia. *Age*, 15(19), 52.
- Allen, S., Tice, J., Van de Perre, P., Serufilira, A., Hudes, E., Nsengumuremyi, F. . . . Hulley, S. (1992). Effect of serotesting with counselling on condom use and seroconversion among HIV discordant couples in Africa. *British Medical Journal*, 304(6842), 1605 - 1609.
- Alsallaq, R. A., Baeten, J. M., Celum, C. L., Hughes, J. P., Abu-Raddad, L. J., Barnabas, R. V., & Hallett, T. B. (2013). Understanding the potential impact of a combination HIV prevention intervention in a hyper-endemic community. *PloS One*, 8(1), 54.
- Arogundade, O. & Faloore, O. (2012). HIV/AIDS awareness as a predictor of university students' dating behaviour in South-Western Nigeria. *International Journal of Psychology and Behavioral Sciences*, 2(1), 9-14.

- Asefa, A., & Mitike, G. (2014). Prevention of mother-to-child transmission of HIV services in Adama town, Ethiopia: Clients' satisfaction and challenges experienced by service providers. *BMC Pregnancy and Childbirth*, 14(1), 57.
- Asiyanbola, O., Adejumo, P. O., & Arulogun, O. (2016). Appraisal of HIV counselling and testing services provided for pregnant women in selected government hospitals in Ibadan metropolis, Nigeria. *SAGE Open*, 6(2), 1-9.
- Athens, L. (2010). Naturalistic inquiry in theory and practice. *Journal of Contemporary Ethnography*, 39(1), 87 - 125.
- Azuonwu, O., Obire, O., Putheti, R., & Nwankwo, M. E. (2010). Prevalence and risk factors of human immunodeficiency virus (HIV) in Ndoki communities of Nigeria. *Journal of Pharmacy Research*, 3, 1607 - 1611.
- Bayer, R., & Edington, C. (2009). HIV testing, human rights, and global AIDS policy: Exceptionalism and its discontents. *Journal of Health Politics, Policy and Law*, 34, 301 - 323.
- Bazeley, P. (2009). Analysing qualitative data: More than 'identifying themes'. *Malaysian Journal of Qualitative Research*, 2(2), 6 - 22.
- Bolaji, S. D., Campbell-Evans, G. & Gray, J. (2016). Universal basic education policy implementation in Nigeria. *KEDI Journal of Educational Policy*, 13(2), 137-158.
- Bryman, A., & Bell, E. (2007). *Business research methods*. Don Mills, ON, Canada: Oxford University Press.
- Bwambale, F., Ssali, S., Byaruhanga, S., Kalyango, J., & Karamagi, C. (2008). Voluntary HIV counselling and testing among men in rural western Uganda: Implications for HIV prevention. *BioMed Central Public Health*, 8, 263.
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada. (2014). *Tri-Council policy statement: Ethical conduct for research involving humans*. Retrieved from http://www.ethics.gc.ca/pdf/eng/tcps2/TCPS_2_FINAL_Web.pdf
- Corbett, E., Dauya, E., Matambo, R., Cheung, Y., Makamure, B., Bassett, M., Butterworth, A. (2016). Uptake of workplace HIV counselling and testing: A cluster-randomized trial in Zimbabwe. *PLoS Medicine*, 3(7), 238.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.
- Gadegbeku, C., Saka, R., & Mensah, B. (2013). Attitude of the youth towards voluntary counselling and testing (VCT) of HIV/AIDS in Accra, Ghana. *Journal of Biology, Agriculture and Healthcare*, 3(11), 133 - 140.
- Granich, R., Gupta, S., Hersh, B., Williams, B., Montaner, J., Young, B., & Zuniga, J. M. (2015). Trends in AIDS deaths, new infections and ART coverage in the top 30 countries with the highest AIDS mortality burden: 1990–2013. *PloS One*, 10(7), 131.
- Green, E., Halperin, D. T., Nantulya, V., & Hogle, J. A. (2006). Uganda's HIV prevention success: The role of sexual behavior change and the national response. *AIDS and Behavior*, 10, 335 - 346.
- Gupta, A., Nadkarni, G., Yang, W., Chandrasekhar, A., Gupte, N., Bisson, G. & Gummadi, N. (2011). Early mortality in adults initiating antiretroviral therapy (ART) in low-and middle-income countries (LMIC): A systematic review and meta-analysis. *PloS One*, 6(12), 691.
- Halperin, D. T., Mugurungi, O., Hallett, T. B., Muchini, B., Campbell, B., Magure, T. & Gregson, S. (2011). A surprising prevention success: Why did the HIV epidemic decline in Zimbabwe? *PLoS Med*, 8(2).
- Hansen, K. T., Dalsgaard, A. L., & Gough, K. (2010). Youth and the city in the Global South. *Children, Youth and Environments*, 20, 350–353.

- Iliyasu, Z., Abubakar, I., Kabir, M., & Aliyu, M. (2016). Knowledge of HIV/AIDS and attitude towards voluntary counselling and testing among adults. *Journal of the National Medical Association*, 98, 1917 - 1922.
- Joint United Nations Programme on HIV/AIDS. (2014). *The gap report 2014*. Retrieved from http://www.unaids.org/en/resources/documents/2014/20140716_UNAIDS_gap_report
- Katibi, A. H., & Adegoke A. A. (2013). Correlates of HIV/AIDS knowledge and uptake of HIV counselling and testing among youths in Nigerian institutions of higher learning. *Centrepont Journal (Humanities ed.)*, 15(1), 25 - 38.
- Kennedy, C. E., Fonner, V. A., Sweat, M. D., Okero, F. A., Baggaley, R., & O'Reilly, K. R. (2013). Provider-initiated HIV testing and counselling in low-and middle-income countries: A systematic review. *AIDS and Behavior*, 17, 1571 - 1590.
- Kenyon, C. R., Kirungi, W., Kaharuzza, F., Buyze, J., & Bunnell, R. (2015). Who knows their partner's HIV status? Results from a nationally representative survey in Uganda. *Journal of Acquired Immune Deficiency Syndromes*, 69, 92 - 97.
- Kevany, S., Chingono, A., Khumalo-Sakutukwa, G., Morin, S., Singh, B. (2016). Global health diplomacy, monitoring & evaluation, and the importance of quality assurance & control: A phase III randomized controlled trial of community mobilization, mobile testing, same-day results, and post-test support for HIV in Sub-Saharan Africa and Thailand. *PloS One*, 11(2), 1-13.
- Mambanga, P., Sirwali, R. N., & Tshitangano, T. (2016). Factors contributing to men's reluctance to seek HIV counselling and testing at primary health care facilities in Vhembe District of South Africa. *African Journal of Primary Health Care & Family Medicine*, 8(2), 7.
- Mutale, W., Michelo, C., Jurgensen, M., & Fylkesnes, K. (2010). Home-based voluntary HIV counselling and testing found highly acceptable and to reduce inequalities. *BioMed Central Public Health*, 10(1), 347.
- National Agency for the Control of AIDS. (2015). *Global AIDS response: Country progress report*. Abuja, Nigeria, Africa: First October Press. Retrieved from http://www.unaids.org/sites/default/files/country/documents/NGA_narrative_report_2015.pdf
- National Agency for the Control of AIDS. (2014). *Global AIDS response: Country progress report*. Abuja, Nigeria, Africa: First October Press. Retrieved from http://www.unaids.org/sites/default/files/country/documents/NGA_narrative_report_2014.pdf
- Nigeria National Population Commission. (2013). *Demographic and health survey*. Retrieved from <https://dhsprogram.com/pubs/pdf/FR293/FR293.pdf>
- Njau, B., Abdullahi, L., Boulle, A., Damian, D., & Mathews, C. (2016). The effects of HIV self-testing on the uptake of HIV testing and linkage to antiretroviral treatment among adults in Africa: a systematic review protocol. *Systematic Reviews*, 5(1), 52.
- Njau, B., Brown, D., Mühlbacher, A., Ostermann, J., Reddy, E., & Thielman, N. (2014). HIV testing preferences in Tanzania: a qualitative exploration of the importance of confidentiality, accessibility, and quality of service. *BMC Public Health*, 14(1), 838.
- Noland, C. M., Vaughn, N. A., Sun, S., & Schlecht, H. P. (2015). Understanding patients' perspectives on opt-out, incentivized, and mandatory HIV testing. *International Journal of Health Sciences*, 9(3), 293 - 303.
- Nwachukwu, C. E., & Odimegwu, C. (2011). Regional patterns and correlates of HIV voluntary counselling and testing among youths in Nigeria. *African Journal of Reproductive Health*, 15(2) 131 - 146.
- Odimegwu, C., Adedini, S. A., & Ononokpono, D. N. (2013). HIV/AIDS stigma and utilization of voluntary counselling and testing in Nigeria. *BMC Public Health*, 13(1), 1.

- Okpani, A. I., & Abimbola, S. (2015). Operationalizing universal health coverage in Nigeria through social health insurance. *Nigerian Medical Journal*, 56(5), 305.
- Oladeinde, B. H., Odia, I., Omoregie, R., & Osakue, E. (2016). Public knowledge of HIV/AIDS in three rural communities of Nigeria. *Social Work in Public Health*, 32(2), 131-140.
- Osborn, M., & Obermeyer, C. M. (2016). Understanding client satisfaction with HIV testing and counselling services: a mixed-methods study in four African countries. *AIDS Care*, 28(6), 689-694.
- Paula, Á. D., Shapira, G., & Todd, P. E. (2014). How beliefs about HIV status affect risky behaviors: Evidence from Malawi. *Journal of Applied Econometrics*, 29(6), 944 - 964.
- Pham, Q., Wilson, D., Law, M., Kelleher, A., & Zhang, L. (2014). Global burden of transmitted HIV drug resistance and HIV-exposure categories: A systematic review and meta-analysis. *AIDS*, 28, 2751 - 2762.
- Salako, A., Jemiusi O. A., Osinupebi, O. A., Sholeye O. O., Abiodun O. A., & Kuponiyi O. T. (2013). Characteristics of clients accessing HIV counselling and testing services in a tertiary hospital in Sagamu, Southwestern Nigeria. *Nigerian Journal of Clinical Practice*, 15(4), 391 - 396.
- Tewabe, T., Destaw, B., Admassu, M., & Abera, B. (2012). Assessment of factors associated with voluntary counselling and testing uptake among students in Bahir Dar University: A case control study. *Ethiopian Journal of Health Development*, 26(1), 16 -21.
- Thomas, K. A., Al-ameen, M., & Fawole, O. (2015). HIV/AIDS voluntary counselling and testing: Perspectives of rural youths in Oyo State, Nigeria. *International Journal of Agricultural Economics & Rural Development*, 7(1), 52-58.
- United Nations General Assembly. (2011). *Political declaration on HIV and AIDS: Intensifying our efforts to eliminate HIV and AIDS* (Vol. Sixty-fifth session). Retrieved from http://www.unaids.org/sites/default/files/sub_landing/files/20110610_UN_A-RES-65-277_en.pdf
- Van Dyk, A. C. (2013). Client-initiated, provider-initiated, or self-testing for HIV: What do South Africans prefer? *Journal of the Association of Nurses in AIDS Care* 24(6), 45 - 56.
- World Health Organization. (2014). *Nigeria statistics summary (2002-present)*. Retrieved from <http://apps.who.int/gho/data/node.main.625TC>
- World Health Organization. (2015). *Global Health Sector Response to HIV, 2000-2015: Focus on innovations in Africa: Progress report*. Retrieved from <http://apps.who.int/iris/handle/10665/198065>
- Yahaya, L. A., Jimoh, A. A. G., & Balogun, O. R. (2014). Factors hindering acceptance of HIV/AIDS voluntary counselling and testing (VCT) among youth in Kwara state, Nigeria. *African Journal of Reproductive Health*, 14(3), 159 - 164.
- Zolopa, A. R., Andersen, J., Komarow, L., Sanne, I., Sanchez, A., Hogg, E. & Powderly, W. (2009). Early antiretroviral therapy reduces AIDS progression/death in individuals with acute opportunistic infections: A multicenter randomized strategy trial. *PLoS One*, 4(5), e5575.