

## HIV/AIDS Status Awareness among the Youth is Critical to Prevention: A Pilot Study

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**Abstract:** Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is the leading cause of death among adolescents in Kenya according to National AIDS Control Council (NACC) report. For that reason, new, innovative and creative HIV prevention strategies among this high risk group are required. The purpose of this survey was to investigate the level of HIV/AIDS awareness, attitudes towards HIV testing, source of HIV/AIDS information, HIV status awareness, behavioral change among fresh first year students at a public university. This was a descriptive survey conducted between the months of September to October 2016 at Kirinyaga University. Through probability sampling, fresh first year degree and diploma students attending their first HIV/AIDS lecture were randomly selected and given self-administering questionnaires after signing an informed consent. The data was analyzed using SPSS software (IBM version 23.0) and results presented as summary tables and bar graphs. Despite majority of respondents rating their HIV/AIDS awareness as good, 44% of the male and 35% of the female participants did not know their HIV status by the time they joined university. Importantly, 89% of males and 82% female respondents reported that knowledge of their HIV status influenced their behavior towards protecting themselves and others. This indicated that HIV status awareness was a critical prevention strategy among the youth as it influences behavioral change and should be promoted at all costs. Furthermore, fear was a common factor for lack of HIV testing. Of concern, educational institutions, social media were the main source of HIV/AIDS information to the respondents, indicating that parents and the church had abdicated their roles in instructing their children or followers on HIV/AIDS. These findings are important when designing HIV prevention, elimination strategies and policies among the youth. In addition, it will inform policy makers in developing new effective HIV prevention policies, strategies among this high risk group and stem the rise in new annual infections. This will help in attainment of UNAIDS 90-90-90 strategy on achieving zero transmission rate by 2020, UN's Sustainable Development Goals (SDG) number 3 on ensuring healthy lives and promotion of wellbeing for all at all ages and Kenya's Vision 2030 of a HIV free society by 2030.

**Keywords:** HIV/AIDS, HIV testing, Youth, HIV prevention, Condom

### I. Introduction

HIV/AIDS has been identified as cause number one cause of death among Kenyans aged between 10-24 Years. Despite the government mainstreaming HIV/AIDS education in all schools, Colleges and Universities, the student's attitude towards the module, the impact of this in influencing attitudes and behavior, awareness levels remains low. According to Kenya AIDS strategic framework (KASF) monitoring and evaluation study by National AIDS Control Council (NACC), (2016)[1], 2,531 youths between 15-19 years (secondary schools), 2,398 between 10-14 years and 1,719 between 20-24 years died from AIDS related complications. Importantly, 435,225 adolescents between 10-19 were HIV positive, while another 119,899 have the virus but had not been identified in 2015[2,3]. In addition, during the same year, 195,299 adolescents are on ARVs and another 315,000 who need it. According to the same report, the annual new infection among children between 0-14 years was 12,511, which included 11,000 new cases, i.e. from mother to child transmission). For those above 14 but less than 25 years, the rate of new infection was 13,148. The Ministry of Health (Kenya) attributes the new infections to early sex. It was reported that 20% of youths between the ages 15-24 had their first sex before 15<sup>th</sup> birthday. This indicates that adolescents are becoming sexually active at an early age, fueled by negative influence of peer pressure, technology, mass media, broken homes, hopelessness, breakdown in social and family values and by 15<sup>th</sup> most of them already have had their first sexual encounter [4].

The fastest growing risk factor for ill health in young people between the ages of 10-24 in the past 23 years has been unsafe/unprotected sex [5]. Despite all evidence pointing to early sexual experience among the adolescents, the church has been vocal in rejecting introduction of sexual reproductive health education in primary and secondary schools. If HIV/AIDS war is to be won among this high risk group, stakeholders need to put more emphasis on HIV testing, status awareness, zero transmission, treatment to HIV infected individuals, behavioral change for the HIV negative, protected or safe sex (use of male & female condoms) and destigmatization strategies as identified in the 90-90-90 strategy. The 90-90-90 strategy by the Jointed United Nations programme on HIV/AIDS (UNAIDS) has identified HIV status awareness as the most important step in

ensuring zero transmission of HIV and towards achieving a HIV free world by 2020[6]. Furthermore, HIV stigma, which is still prevalent in the society, has been identified as a major hindrance to HIV testing among the youth. Consequently, majority of the youth do not know their HIV status thus cannot take measures to prevent themselves and their partners or go for the free antiretroviral therapy (ART) for those who are HIV positive. This, coupled by myths believed by youth, social, cultural practices that put them at risk, ignorance, “don’t care” attitude, the HIV positive one continue transmitting the virus and the negative ones to get infected. This complicates the fight against HIV among this high risk group. Therefore, it is not surprising that this group has the highest rate of new annual infections. Notably, HIV-infected individuals are still discriminated against in Kenya. This stigmatization and lack of a sustained sensitization and awareness campaigns among this high risk group, has led to fear of HIV testing among the youth. Significantly, this indicates majority of the youth, do not know their HIV status. More alarmingly, despite them continuously engaging in unprotected sex and thus continuing to transmit the virus to their partners, 119,899 HIV positive adolescents were not on ART by 2015 according to Health Metric and Evaluation study [1]. This is in spite of antiretroviral therapy (ART) having been shown to suppress viral load to undetected levels and thus capable of preventing transmission of the virus.

According to Supplement Guidelines on HIV testing by [2], men account for only 30% of all people who have tested for HIV. As a result, HIV- infected men are less likely to be diagnosed and put on treatment. This has impacted negatively on reducing HIV transmission and new infections, thereby slowing down the fight against HIV. Successful integration of HIV testing into reproductive health services including antenatal care has contributed to the high number of women who have tested for HIV. Similar integration of HIV testing into other relevant male clinic settings, where men visit frequently and policies that support couple HIV testing services during antenatal care has been recommended. Furthermore, availability and easy access to HIV self-testing by the youth in the privacy of their rooms with people referring themselves to healthcare if they test HIV positive has been identified as an important factor in HIV prevention among this high risk group [7,8]. HIV self-testing eliminating the need to visit health care and the stigma associated with HIV and ART. Formulation of easy to take, single daily pills such as the Truvada unlike the previous dosages consisting of several tablets taken several times daily and promotion of ARVs as virtual vaccines and as the only know effective vaccine will help in fighting HIV-associated stigma. Studies have indicated increased purchase of “Morning after Pills” by the youth on weekends, indicating that they fear pregnancy more than HIV and should be encouraged to adopt ARVs as “virtual” vaccines [9]. Availability and easy access of condoms especially female ones, correct and consistent use should be promoted among the youth. In addition, empowerment of girls to take charge of matters relating to their sexual decisions need to be promoted.

Currently, 440,000 adolescents are HIV-infected with only 135,000 on ART. Furthermore, youths are the majority of new HIV infections. Importantly, the youths are becoming sexually active approximately by their 15<sup>th</sup> birth day indicating that stakeholders cannot continue assuming youths are not engaging in sexual activities[4]. Importantly, according to [10], abstinence as a HIV prevention strategy had failed in Kenya and Uganda. This means than new and innovative prevention strategies are urgently required to stop the increased new annual HIV infections among the youth. Since, abstinence as a prevention strategy has failed; other new and effective strategies are required. The current generation of youth is faced by unique challenges such as; living in a more open society with greater freedoms, information explosion, better access to technology, information, entertainment (e.g. highly accessible internet, smart phones, social media), therefore requires innovative and creative HIV preventive strategies. A new life at the university or college, the transition of youth from high schools to university or college can be disorienting, confusing and therefore requiring lot of guidance to navigate successfully.

Youths forms the majority of the new annual HIV infections in Kenya according to NACC. In addition, HIV/AIDS is the leading cause of death among the youth. Of concern, about 440,000 adolescents were living with HIV with only 150,000 on ART in Kenya by 2016 (NACC, 2016) [1]. Currently, studies on HIV/AIDS awareness levels, prevalence of status awareness, attitudes towards status knowledge, impact of status awareness on behavior change, barriers to HIV testing, attitudes towards, importance, effectiveness of the current HIV/AIDS curriculum and source of HIV/AIDS information among this group are few; therefore information on most effective prevention strategies is lacking.

Specifically, the curriculum content and objectives of HIV/AIDS module at colleges and Universities does not seem effective in prevention of HIV/AIDS among the high risk group of youth as the number of new annual infection keep on rising. Conspicuously, in a first HIV lecture a group of first years, it was noted that HIV/AIDS associated stigma still thrives among this group of youth. Moreover, the unit title, HIV/AIDS could be inadvertently contributing to the stigma instead of demystifying it especially if the unit is not handled with special care. In addition, too much redundancy in the HIV/AIDS unit taught to university and college students had been highlighted. Significantly, HIV/AIDS unit contains too much unnecessary details on biology, Immunobiology of the virus, diagnosis, classes, mechanistic action of ART and vaccines as opposed to the more

relevant socio-economic aspects of HIV/AIDS to this group of youth, hence they find it “hard” and “boring”. Consequently, an urgent review of the content and title of the unit is required.

To investigate the hypothesis that the level of HIV/AIDS, prevalence of HIV status awareness was low among fresh first year university students joining public university, the authors conducted a descriptive survey. The objective of this descriptive survey were to; investigate HIV/AIDS awareness levels, HIV status awareness, attitudes towards HIV/AIDS teaching, barriers towards HIV testing, behavioral change, impact, effectiveness of the current HIV prevention strategies such as condom and source of HIV/AIDS information among this high risk group of youth. In addition, the authors explored new and effective prevention strategies among freshmen/women at a public university in Kenya.

The author was trying to answer the following research questions whose answers are essential in overcoming the challenges in HIV prevention strategies among the high risk group of Youth.

1. What is the HIV awareness levels of Freshmen/Women (First years) joining Universities/Colleges?
2. What is the prevalence of HIV status awareness among Freshmen/Women (First years) joining Universities/Colleges?
3. What are the causes of the general apathy, fear of HIV testing, Stigma, resistance to current preventive strategies and their association to the high annual infection rates among the high risk group of youth?

## **II. Design And Methods**

### **2.1 Design**

This was a descriptive survey conducted at Kirinyaga University (KyU) where a random sample was selected from all new KyU students (first years) attending the first HIV/AIDS lecture using attendance registers as the sampling frame and degree, diploma students as the sampling units. Self-administered questionnaires were distributed, filled after a signed informed consent had been obtained from every participant. KyU is one of the recently chartered public Universities in Kenya. In order to avoid selection bias and confounding, probability sampling was used followed by stratified sampling into gender, degree and diploma students.

### **2.2 Study Area**

KyU is one of the recently chartered public Universities in Kenya. The University is located approximately 115 Km North East of Nairobi off Nairobi Sagana-Embu-Highway in Kutus Town, the headquarters of Kirinyaga County, in the former Central province of Kenya.

### **2.3 Sample population**

The population comprised randomly generated sample of all registered first year Degree and Diploma students, both male and females attending their first HIV/AIDS lectures.

### **2.4 Sampling Frame and Unit**

Class attendance registers were used as the sampling frame to generate a systematic random sample for the students. The departments (Degree or Diploma) were used as the sampling units for random sampling of students of KyU.

### **2.5 Sampling**

Probability sampling strategy of proportional stratified random sampling followed by a systematic random sampling (selecting samples at equal intervals) was employed in this survey to avoid selection bias, for external validity (generalizability) and to control for confounding effect at design stage of the descriptive survey. The sample population was stratified into two strata: degree and diploma and males and females (during analysis).

### **2.6 Sample size computation**

In the calculation of sample size, the following variables were applied: Design effect of 2, Correlation variation (CV) of 5%, P of 5% and adjustment for non-response of 5%. A sample size was calculated from the total registered first year degree, diploma students. The sample size was proportionately allocated to the respective participants' strata according to the ratio of degree and diploma students from a total population of 709 registered students. A representative sample size of about 95 (n=95) from the total of 709 registered first year degree and diploma student were systematically sampled (at equal intervals in the class attendance registered) and questionnaires distributed for self-administering.

### **2.7 Data collection**

The questionnaires were pre-tested before the survey to know the time taken to fill them and review answerability of the questions. The questionnaires with an attached consent cover letter were distributed to the participants in the specific survey strata for self-administration. Class representatives were interviewed as the key informants. In addition, a general observation of the students attending their first HIV/AIDS class in the lecture hall for the first time was used.

**2.8 Data Collection**

Self-administered questionnaires were distributed, filled after a signed informed consent had been obtained from every participant. The questionnaires were numbered, coded and information transcribed into SPSS software (IBM version 23), analyzed and interpreted.

**2.9 Data analysis and interpretation**

After return of the filed questionnaires, they were numbered according to strata, the data/response coded and data transcribed into SPSS (IBM version 23) and analyzed using descriptive statistics. During analysis stage, the data was stratified in two; staff, students, males and females to control for confounding effect.

**III. Results**

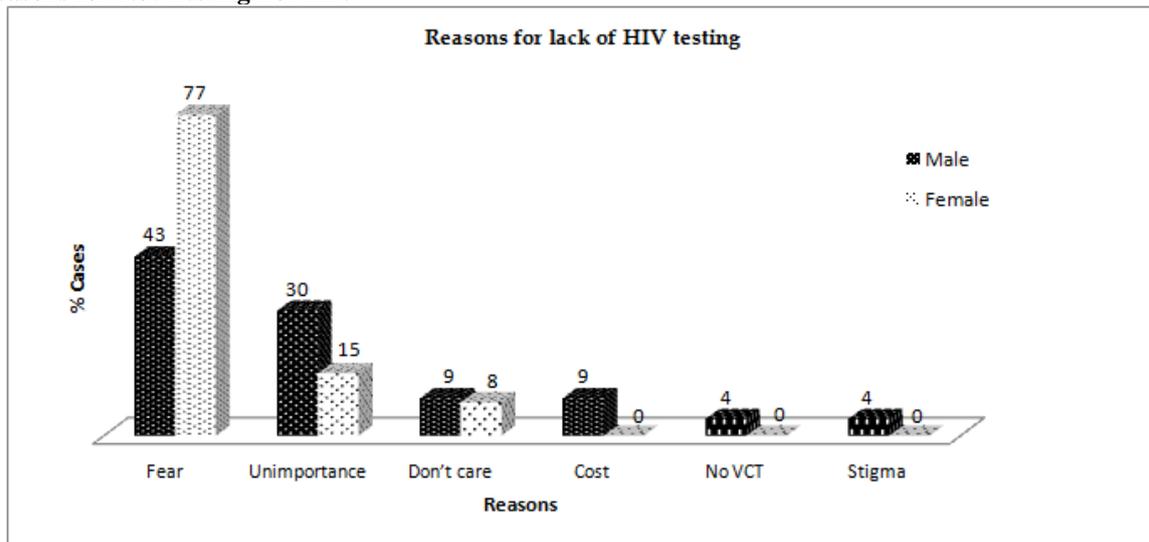
The results were analyzed, summarized and presented in form of a table and bar graphs as shown below;

**Table 1:** Responses towards the knowledge of HIV status, status influence on behavior and condom effectiveness.

Response	MALE			FEMALE		
	N	n	% Yes	N	n	% Yes
Is it important to learn HIV in University?	39	32	82	31	27	87
Aware of their HIV Status	39	22	56	31	20	65
Influence of knowing their HIV status on Behavioural towards Protecting oneself and others	19	17	89	22	18	82
Condom effectiveness	39	31	79	31	23	74

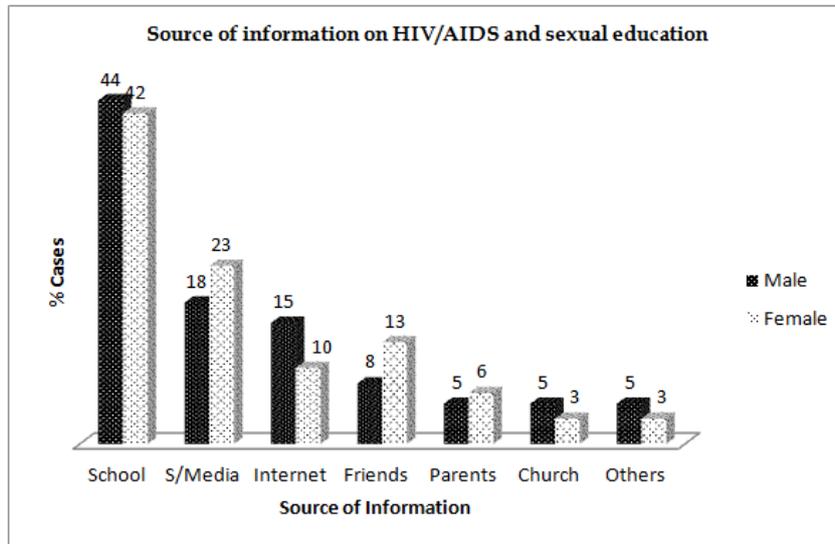
The Table shows that majority of the youth appreciate the importance of learning about HIV at the University. 56% of Male and 65% of female students had taken a HIV test and knew their status. Significantly 89% of Male and 82% of female students who knew their HIV status acknowledged that knowing their HIV status influenced their behavior towards protecting themselves and other. 79% of Males and 74% of female students acknowledged the importance of Condom in preventing transmission of HIV, Sexually Transmitted Diseases and Pregnancy.

**Reasons for Not Testing For HIV**



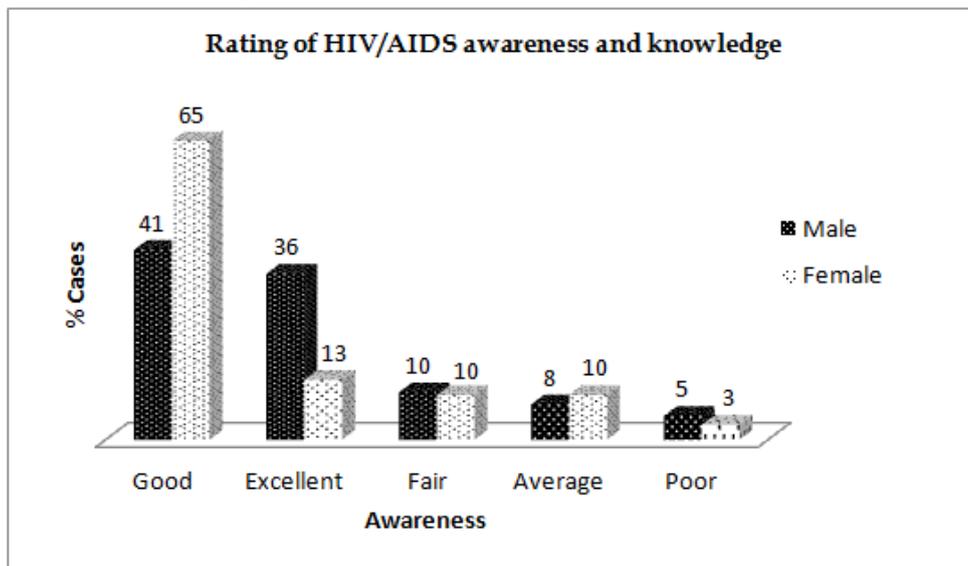
**Figure 1:** The reasons for not take a HIV test among the youth. The figure indicates that the main reason is fear especially among the females followed by not thinking it is important. The fear could be due to the stigma associated with being HIV positive. The high number of youth who think HIV testing is not important highlights the magnitude of effort required by stakeholders on sensitizing the youth on importance of knowing their HIV status as it has been shown to influence behavioral change to protect themselves and their partners.

**The Sources of Information on Sexual Education and HIV/AIDS**



**Figure 2:** The source of HIV/AIDS and Sexual Education among the youth. The figure shows that parents and the church have abdicated their role of educating their children and followers on Sexual education and HIV/AIDS matters, leaving it to schools and social media.

**Students' HIV/AIDS Knowledge and Awareness Levels**



**Figure 2:** HIV/AIDS awareness levels among the Youth. This figure shows the awareness levels of HIV/AIDS and Knowledge was high especially among female students as 65% females and 41% rated their awareness and knowledge as good.

**IV. Discussion**

The objective of this survey was to investigate HIV/AIDS awareness levels, prevalence of HIV status awareness, attitudes towards HIV/AIDS teaching and HIV testing, behavioral change, impact, effectiveness of the current HIV prevention strategies, explore new and effective prevention strategies among freshmen/women at a public University in Kenya. Significantly, the results indicated that 56% of Male and 65% of female students had taken a HIV test and knew their status as shown in Table I. Of utmost importance to this study, 89% of Male and 82% of female students (Table I) who knew their HIV status acknowledged that knowing their HIV status influenced their behavior towards protecting themselves and other. In addition, 79% of Males and 74% of female students acknowledged the importance of condom in preventing transmission of HIV, Sexually Transmitted Diseases (STDs) and Pregnancy. This indicates that HIV testing and Condom use should be considered seriously as promising and innovative HIV preventive strategies among this high risk group of youth. This will be important especially coming after the Santelli *et al.* (2013)[10]report which indicated the

failure of abstinence as a HIV preventive strategy among the youth and the reality of this group being sexually active at an early age. Of major concern, is the 44% of the male and 35% of the female student population who responded to not knowing their HIV status in Table I. Notably, 77% of females and 43% of Male students as shown in Fig. 1 cited fear as the main reason for not taking a HIV test especially among the females followed by not thinking it was important. The fear could be due to the stigma associated with being HIV positive. This could explain the high prevalence of new annual infections in this group, ignorance, stigmatization, general apathy and resistance to current prevention strategies. The high number of youths as indicated in Fig. 1, who did not consider knowing their HIV status or HIV testing important highlights the magnitude of challenge to stakeholders in sensitizing them and creating awareness on the significance of knowing their status. How stakeholders navigate around this challenge will be key to HIV/AIDS prevention among this group. Besides, this study has shown that HIV status awareness influences behavioral change towards protecting themselves and their partner(s). According to Table I., 65% females and 41% males student' respondents had good knowledge of HIV/AIDS, which was in agreement with other studies such as UNICEF, [11, 12]. However, the low levels of HIV/AIDS knowledge (Fig. 3), awareness and numbers of participants who knew their HIV status implies that the HIV positive ones among this group are unaware, hence, are not on ART, consequently continue transmitting the virus to their sexual partner(s). The universities, colleges, church, other stakeholders should take a leading role in promoting HIV testing for awareness among the youth, their congregations and should heighten destigmatization efforts to effectively curb the HIV/AIDS pandemic among this high risk group.

Though high numbers of respondent indicated good HIV/AIDS awareness levels, the high numbers of respondents who cited fear, not thinking HIV testing was important (Fig. 1), highlights major shortcomings in HIV/AIDS curriculum taught at upper primary and high school. Since previous studies have confirmed that majority of youth are sexually active by age of 15[11], therefore, new preventive strategies and a review of the HIV/AIDS curriculum taught at this level is recommended. Notably, 79% of males and 74% of female student's respondents (Table I) acknowledged the effectiveness of condoms in preventing transmission of HIV, sexually transmitted diseases (STD) and pregnancy. This finding is important in the fight against HIV/AIDS among the youth, therefore, use, availability of both the female and male condoms should be promoted among this group.

As mentioned in the introduction, although the overall the HIV prevalence globally is dropping, new annual infections among the youth were on the increase[13, 14], implying that stakeholders, policy makers need to wake up to this new reality and dynamics in HIV infection. Accordingly, lack of knowledge of HIV status, HIV stigma associated with testing and treatment, myths, social and cultural practices have been identified as the main factors putting the youth at risk of acquiring the infection [2]. As the study participants' were first year students, universities and colleges in conjunction with other stakeholders should integrate HIV voluntary counseling, testing (VCT) services in their medical services to encourage and promote HIV testing among the students. Availability and accessibility of both the male and female condoms should be promoted in institutions of higher learning. In addition to condoms, this would increase accessibility to HIV testing, awareness, ART for the HIV infected, helping in prevention of transmission and ultimately achievement of the UNAIDS' 90-90-90 strategy [15, 16].

In agreement with previous studies[7,8], stigma, negative attitude towards HIV/AIDS subject was observed and highlighted by the high number of students who refused to participate in the survey despite assurance of confidentiality. Therefore, a need for strategies, policies specifically targeting the youth population to encourage HIV testing, status awareness, achieving zero transmission, adherence to ART by the infected and importantly practicing healthy choices are required. Importantly, a high percentage of 44% male and 42% female student respondents received their information from School and 18% males, 22% females from the social media(Fig. 2), confirming finding of other studies[18]. This is a double edged finding which underlines the importance of educational institutions in educating the youth on HIV/AIDS matters on one side and the abdication of duties by parents and the church on the other.

HIV testing, counseling, prevention, treatment and destigmatization should not be classroom only affair and need to be integrated into the extra-curricular activities calendar such as sports, music festivals, drama festivals and cascaded to the ward level. The title of the HIV/AIDS unit, objectives of the curriculum, content of the HIV/AIDS unit offered at universities and colleges requires urgent overhaul to include the current realities. For the curriculum to be effective, the author recommends a change of title from HIV/AIDS to "Sexual & Reproductive Health", to contain HIV/AIDS as a topic, the content to focus more on social-economic aspects as opposed to scientific aspects of HIV/AIDS. In addition, the content should be expanded to include subjects such as life skills, wanted, unwanted pregnancies, abortions, safe motherhood, fatherhood, counseling, guidance, project/programme management, critical, creative thinking, ethic, law among others, to make the teaching and learning more stimulating. Specifically, teaching the youth critical and creative thinking will empower them to develop into independent thinkers who can question the conventional wisdom. This will help them to withstand peer pressure and its negative influence. According to Indagasi (2014)[19], "*foundation of critical and creative thinking is strong moral conviction and unbending sense of what is right; a stubborn desire to discriminate*

between right and wrong; an abiding faith in possibility of finding the truth". Therefore, inculcating values and integrity to the youth early such as the importance of delaying self-gratification, chastity, involvement and interaction with role models, mentors and people known to be living positively with HIV/AIDS, will help in eradicating the HIV- associated stigmatization.

The objectives of the HIV/AIDS should also be expanded, in addition to creating awareness, to include producing experts in sexual, reproductive health, HIV/AIDS prevention, management and care, who can use the acquired knowledge to join careers such as in guidance and counseling, at voluntary counseling& testing centers (VCTs), HIV prevention officers at workplaces, HIV programme officer. In addition, faith-based organizations should reconsider their stand on HIV/AIDS, sexual, reproductive health education, safe abortion, condom use and should initiate programmes on the same for the youth in their organizations. Furthermore, involving the youth, their representatives or peer counselors in national organization dealing with HIV such as NACC as stakeholders when developing policies, strategies involving them, training them on matters relating to HIV/AIDS, will help in overcoming the barriers and challenges in the current HIV prevention strategies.

In the face of information and technology explosion, peer pressure, myths, social, cultural, biological and economic factors putting the youth at risk of HIV, the most effective way for prevention remains HIV testing and status awareness, protection through safe sex (proper, consistent use of condoms), abstinence, being faithful, destigmatization (ABCD), change in attitude, social and sexual behavior. The authors recommend a major review of the HIV/AIDS curriculum taught at universities and colleges. The review should consider changing of the title of the unit from the current HIV/AIDS to probably "Sex Education and Reproductive Health", where HIV/AIDS will be taught as one of the main topics in addition to others such as safe abortion, pregnancy, behavior change, life skills, critical and creative thinking. Significantly, this will stimulate passion and interest in learning the unit among the youth ultimately overcoming the apathy, resistance to the module and the current HIV/AIDS prevention strategies. The use of ARVs as "virtual" HIV vaccine (PrEP) [9], in addition to the popular "morning after" pills among the sexually active youths should be considered as a viable HIV prevention strategy. In addition, promotion of male and female condoms, destigmatization, empowerment of women on sexual decision (such as carrying condoms), access to self-testing HIV kits, involvement of all stakeholders such as the church in sexual education and reproductive health are proposed. A key finding from this survey of 44% males, 35% females not knowing their HIV status, 23% with low HIV knowledge, explains the high prevalence of new annual infections in this group, ignorance, stigmatization, general apathy and resistance to current prevention strategies. Unfortunately, the School and social media have taken up the role of parents and church in educating the youth on matters relating to HIV/AIDS.

A good starting point for destigmatization is by reviewing some of offending names given to HIV infection such as "*Mukingo*" in Kikuyu especially by the media. As long as HIV/AIDS is associated with offending names, stigma will persist as no one would like to be associated or identified with such names. More effort such as the 90-90-90 strategy, Test and Start (Anza sasa), will only be effective if they are focused towards this high risk group. In addition, new strategies such as the new home testing HIV diagnostic kits will be key in HIV prevention among this group since the main reason for low uptake of HIV test among the youth is fear of stigma and accessibility of the testing facilities [8, 2].

## V. Conclusion And Recommendations

HIV status awareness among the youth at universities in Kenya is associated strongly with taking measures to protect themselves and others. However, a good number of the youth at universities (44% males and 35% female respondents) were not aware of their HIV status, therefore not on ART and continue transmitting the virus to their partner(s) for HIV positive ones. Since current HIV prevention strategies among the youth such as abstinence are not working and youths are becoming sexually active by their 15<sup>th</sup> birth day, new innovative strategies are required. Future HIV prevention strategies among the youth should focus on HIV status awareness, being faithful to one partner, proper consistent use of condoms and destigmatization with special focus on destigmatization, HIV testing for awareness, attitude and behavioral change.

A limitation of this study was that it was a pilot study conducted at one of the public universities in Kenya, therefore, a much larger survey covering the entire Country's universities, colleges, secondary and primary schools will be required to strengthen the hypothesis.

### Conflict of Interest

The author declares no conflict of interest in conducting and publication of this survey.

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