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Abstract—The adolescent girls of the age 15-24 are at high risk of being infected with HIV due to their high vulnerability to HIV infections that are attributed to their sexual behaviors. In Kenya, reports indicate that girls are three times more vulnerable than boys of the same age. For this reason, the government has introduced integrated HIV/AIDS education in the school’s curriculum as a strategy to halt HIV infections among the youth in schools. Nevertheless, integrated HIV/AIDS education may not have successfully addressed sexual behaviors that expose the girls to HIV infections. The purpose of the study was to establish the level of teachers’ preparedness to teach HIV topics in integrated HIV Education curriculum among girls in secondary within Nakuru Municipality. The study adopted a Descriptive Survey Method with an accessible population of 425 form three students and 12 teachers. Data was collected through use of questionnaires that were administered to the students. The instruments were piloted and reliability correlation coefficient of 0.8 obtained. The collected data was analyzed using Descriptive Statistics (frequencies, percentages and averages) with the aid of Statistical Packages for Social Sciences (SPSS) version 17.0 for windows. Though the study revealed that students had gained knowledge and skills in the fight against HIV infections, the study indicated that HIV/AIDS teaching resources were generally lacking in the schools and that some teachers were unprepared to teach integrated HIV/AIDS for lack of training and that emphasis was on the examinable subjects. The results of the findings provides useful information to educational planners, teachers and other stakeholders in making integrated HIV education more effective in an effort to halt HIV infections among girls. The study recommends provision of HIV/AIDS teaching resources by the school administration, and makes recommendation for further research on evaluation of the effectiveness of current HIV/AIDS curriculum in secondary schools.

Index Terms—Integrated HIV/AIDS education, sexual behavior, girls in secondary schools

I. INTRODUCTION

Although important progress has been achieved in preventing new infections and lowering the annual number of AIDS related deaths, AIDS continues to be a major global health priority. This is because the number of people living with AIDS continues to increase (NASCOP, 2009). The control of HIV/AIDS virus infections therefore continues to be a major challenge worldwide. Research shows that the number of people living with HIV continue to grow in 2008 to an estimate of 33.4 million higher than the number in 2000, with nearly half of all infections occurring among the young people between ages 15 and 24 (WHO, 2008). This is a reflection high rate of new infections. It is also estimated that in the same year 2008, 20 million deaths occurred due to AIDS related illness worldwide. Consequently, HIV/AIDS is not only a major global health but also a social and economic priority that needs to be addressed.

In Sub-Saharan Africa, the newly infected people were estimated to be 1.9 million in 2008, thus bringing the total number of people living with HIV to 22.4 million, while the rate of new infections in 2008 was approximately 25% lower than the epidemic in 1995, the number of people living with HIV slightly increased in 2008 either due to increased longevity stemming from improved access to HIV treatment (UNAIDS, 2008).

This trend is equally similar in the East African countries with surveys indicating that in [P], Tanzania, females are four times likely than men to be infected with HIV (Tanzania Commission for AIDS, 2008). In Uganda, increase in sexual risky behavior continues to be a source of concern especially disproportionate for girls and young women in Kenya where those of ages 15-24 are three times more likely to be infected than their male counterparts (NASCOP, 2005). The high rates of infections can be attributed to a combination of biological and social factors. According to Murrah & Kiari (2001), girls start sexual activity earlier than boys and have more than one sexual partner. They also have higher prevalence of sexually transmitted infections and are victims to high incidences of violent sexual contact.

Education being one of the prevention approaches against HIV/AIDS is an important tool for reducing girl’s vulnerability to HIV infections, it is key to an effective response to HIV/AIDS. Studies show that educated women are more likely to know how to prevent themselves form HIV infections, delay sexual activity and to take measures to protect themselves. Likewise, education accelerates behavior change among the youth, making them more receptive to

prevention messages. Nevertheless, universal primary education is not a substitute for expanded HIV/AIDS treatment and prevention, but it is necessary component that complements those efforts. Much of the research that has focused on women and education also shows that post primary education has the most impact, providing the greatest pay-off for women’s empowerment. Higher levels of education provide much more than specific information on HIV transmission. They also provide adults and young people with the larger life skills they need to make informed choices and to develop both economic and intellectual independence. Thus girls and women gain self esteem along with knowledge (WHO, 2001).

For teachers to be able to teach HIV/AIDS education they must be comfortable and competent in covering topics on human sexuality and HIV prevention to the students. This calls for proper training for them to be able to deal with vulnerable population (Schekel, 2001). The teachers further are required to acquire the most-to-date information on HIV/AIDS, its mode of transmission and prevention (WHO, 2001). The ministry of Education made efforts to provide in-service training to teachers for the revised curriculum. It adapted the Primary for Better Health (PSABH) model of teachers preparing to teach about HIV/AIDS developed by the center for British Teachers Education Trust (CFBT). Three teachers per school were expected to be trained per school. However, this has largely been unsuccessful mainly because of the very large numbers of teachers that needed training before the implementation of the curriculum (ODI, 2006). Majority of teachers were not adequately trained to integrate HIV/AIDS into their subjects. Research however shows that teachers are not only finding it difficult to communicate with their students about HIV/AIDS and sexuality but choosing the comfort of transmission approach of teaching avoiding engagement with the learners in ways that can draw their experience (Boler, Ibrahim, Adoss and Shaw, 2013). Educating young people about HIV and AIDS necessitates discussion about sensitive subjects such as sex and drug use. Many people believe that it is inappropriate to talk to young people on these subjects in fear that doing so will encourage young people to indulge in risky sexual behaviors (UNESCO, 2008). This leads to diverging opinions between education providers who take abstinence only approach, and those who advocate for a more comprehensive approach. In addition, sex education focuses on abstinence based on encouraging students not to have sex until marriage hence, limiting AIDS education by not providing information on how to protect themselves from HIV infections, if and when they choose or are forced to have sex (NAACC 2005).

Kirby also observed that HIV and AIDS related health promotion in schools has been controversial. Many people have feared that it might encourage sexual activity among young people who are not sexually active and increase levels of risk-taking among young people who are sexually active. While the Ministry of Education supports sex education in both primary and secondary school curriculum, churches and parents have rejected and blocked such proposals (FHI, 1996). Religious messages have indicated opposition against HIV/AIDS sexual related education. The Vatican for example says that abuse occurs whenever sex education is given to children by teaching them all the intimate details of genital relationship. Many parents do not communicate adequately with their teenage children on matters of sex (Geasler, 1992). Many of them feel inadequate to task and often leave the matter to teachers, peers and the media. Children are also often reluctant or too embarrassed to approach parents on sexual matters.

Mayer (2000) observed that before a problem is solved, it must be recognized. Therefore, teachers need to teach the students how to identify risky sexual behavior that makes them more vulnerable to HIV infections. To achieve this they need to capture student’s attention by applying a curriculum that offers a variety of teaching mediums as well as make the lessons on HIV/AIDS special, relevant and interesting for the students (Siegel, 1996). Teachers need to also avoid overloading the students with too much information at a given time in order to reduce monotony and boredom. Capturing the students attention will assist the teachers to effectively attain the objectives of integrated HIV/AIDS education which is to enable the students protect themselves against HIV infections, delay their sexual debut and avoid early pregnancies.

Integrated HIV/AIDS education has a major role to play in preventing HIV infections among the vulnerable population of girls. When they learn topics on HIV/AIDS they are expected to be more responsible in managing and modifying their sexual behaviors hence reduce their HIV infection vulnerability. Teachers have a responsibility to education and assist girls to develop skills that would support the reduction of HIV infections by delay of sexual debut, saying no to early teenage sex and protecting themselves against sexual harassment. This study sought to establish the level of teacher’s preparedness to teach HIV topics in integrated HIV/AIDS education curriculum.

II. STATEMENT OF THE PROBLEM

Despite the integration of HIV/AIDS education in the school curriculum, as a strategy to halt HIV infections among the youth in Kenya, the rate of infections among the girls of ages 15 to 24 still remain high. Reports indicate that they are three times more vulnerable to HIV infections than boys of the same age (KAIS, 2007). The objectives of integrated HIV/AIDS education that are meant to promote abstinence from risky sexual behaviors may not have been achieved. This is because there are many reported cases of sexual problems that could continue exposing girls to HIV infections such as girls dropping out of school due to early pregnancies, others indulging in sex before the age of 15, others having more than one sex partner and rampant sexual violence among the girls within and outside school (Action Aid, 2011). If the sexual behaviors are not addressed with the seriousness they deserve, the girls will continue suffering the infections and undergo the challenges of protecting themselves against HIV infections. Nakuru Municipality has been chosen as a study area in a bid to determine what impact integrated HIV/AIDS education has had on the sexual behavior of girls in secondary schools within the municipality.

III. PURPOSE OF THE STUDY

The purpose of the study was to establish the preparedness of teachers in teaching the integrated HIV/AIDS in the secondary school curriculum as a measure to promote
abstinence from risky sexual behaviors and to eliminate premarital sex among the young people in and out of school.

IV. RESEARCH OBJECTIVE
To determine the level of preparedness of teachers to teach topics of integrated HIV/AIDS education.

V. RESEARCH QUESTION
What is the level of preparedness of teachers to teach HIV/AIDS topics in the integrated HIV/AIDS education?

VI. SIGNIFICANCE OF THE STUDY
The study helps identify challenges faced by the teachers in teaching HIV/AIDS education that addresses sexual behaviors’ of girls in secondary schools. It also provides useful information to educational planners, teachers and other stakeholders in making integrated HIV education more effective in an effort to halt HIV infections among girls. To scholars, study creates a basis for future research.

VII. LITERATURE REVIEW
Teacher’s preparedness to teaching
Research shows that teachers are not only finding it difficult to communicate with their students about HIV/AIDS and sexuality but also choosing the comfort of transmission approach of teaching avoiding engagement with learners in ways that can draw their experience (Boler, Ibrahim, A dose and Shaw, 2003). Teachers also cited inadequate preparation to teach about HIV/AIDS and about the sensitivity surrounding sexuality education as barriers to teaching. Further studies showed the difficulties of communication about HIV/AIDS in schools. Teachers were reported to be engaging in selective teaching of HIV topics while leaving out the sensitive ones, such as sexually explicit material and presenting it in an overly scientific manner. The teachers, especially in the rural schools choose which HIV topics to teach or not while others view sex as a taboo that should not be discussed. (Action Aid, 2003).

Onyango Orwe, in his research paper (2009), observed that most of the in-service courses compose of seminars which are focused on instructing teachers on the curriculum changes. This results in to teachers’ finding it hard to communicate HIV issues due to the sensitive nature of the subject and the secrecy surrounding the subject. According to Eisenberg (1997), teachers’ lack of knowledge, skills and confidence affects the quality and quantity of delivery of HIV education. A teacher teaching topics on prevention of premarital sex, abstinence or issues regarding to sexuality, need to be educated on the same and be comfortable while interacting with learners on the same topics. In a school setting, the preparation of teachers is important in influencing the success of HIV/AIDS education yet in most situations teachers are given written materials without adequate training or proper induction (MOEST, 2001). Equally important is that the teacher should be comfortable and relaxed while teaching HIV topics. A good teacher is also expected to be a good listener who assesses what the learners know from the questions they ask and what they really need to be taught (Delamater, 2000). There was therefore need to find out the preparedness of teachers to teach HIV/AIDS education.

For teachers to be able to teach HIV/AIDS education they must be comfortable and competent in covering topics on sexuality and HIV preventions to the students. This calls for proper training for them to be able to deal with the vulnerable population (Schenker 2000). The teachers further are required to acquire the most –up to-date information on HIV/AIDS, it’s mode of transmission and prevention (WHO, 2001). The Ministry of Education made efforts to provide in-service training to teachers for the revised curriculum. It adapted the Primary For Better Health (PSABH) model of teachers’ preparedness to teach about HIV/AIDS developed by the Center for British Teachers Education Trust (CFBT). Three teachers per school were expected to be trained per school however; this has been largely unsuccessful mainly for the very large number of teachers that needed to trained before implementation of the curriculum (ODI, 2006). Majority of teachers were not adequately trained to teach integrated HIV/AIDS education

Integrated HIV/AIDS education curriculum
Schools play a major role in providing HIV/AIDS education for the young people as they have a capacity of reaching a large number of uninfected populations. It has proven to be a powerful tool and important tool for reducing the HIV/AIDS infections (KNASP, 2004). At the school level Kenya has invested in a national HIV/AIDS curriculum that was launched in 2000, where all primary and secondary schools were expected to implement it through the fusion method. HIV/AIDS and sex related education is generally integrated in a broad range of subjects most often, home science, social ethics, biology and guidance and counseling as recommended in the Koech Commission. In languages, it is facilitated in passages and poems. The aim of integrated HIV/AIDS education in many Sub-Saharan courtiers including Kenya is to completely eliminate premarital sex and to promote abstinence until marriage, and also emphasize moral values and refusal skills. It does not teach about safe sex and only promotes a limited scope for teachers discuss protected sex in response to student’s questions. The study was aimed at establ

VIII. RESEARCH METHODOLOGY
The study was conducted using descriptive survey method. The survey was considered appropriate because in this design, a phenomenon is observed, described and documented as it is in the natural setting without manipulation of any variables (Kathuri & Pals, 1993). Furthermore, there were no manipulations of variables; events were examined as they were. Purposive sampling was used to obtain a sample of 201 subjects; randomly chosen from an accessible population of form three students in four schools namely Nakuru Girls, St. Mary’s, Eastmore, and Christ the King, within Nakuru Municipality. Further, purposive sampling was used to select 12 teachers, three Heads of departments from the four schools from Science, Humanities, Guidance and Counseling departments based on the Koech commission’s recommendation that HIV education be integrated into sciences, humanities and guidance and counseling.

Data was collected using two sets of questionnaires, student’s questionnaire (SQ) and teacher’s questionnaire (TQ). The choice of questionnaires was based on the objectives and literature review of the study giving the respondents time to give well thought and answers and applicable in a large
sample (Mugenda & Mugenda, 1999). To test the validity and reliability of the instruments a pilot study was carried in one school with a population similar to that of the target population where respondents were 15 students and 3 teachers providing opportunity for clarification, modification and correction of anomalies in the questionnaires. The questionnaires were considered reliable after yielding a coefficient of 0.86 and 0.88 for the students and teachers respectively using Conbach’s Alpha method which is considered acceptable on yielding a coefficient of 0.7 according to Frankel and Wallen (2000). The researcher administered the questionnaires to the respondents allowing sufficient time for accurate response to the questionnaires. The data obtained was organized, coded and analyzed using descriptive statistics with the aid of Statistics Package for Social Science (SPSS) and information presented in form of frequencies, percentages and standard deviation.

IX. RESEARCH FINDINGS AND DISCUSSIONS

The objective of the study was to determine the level of teacher’s preparedness to teach topics on integrated HIV/AIDS education. This level was measured on a 5 point range linker scale in which the teachers and students respondents were asked to indicate their level of agreement or disagreement in the ten statements given. The scores ranged from 5(SA), 4(A), U (3), 2(D), 1(SD). The mean and standard deviation (SD) for each item was calculated.

To categorize the levels of teacher’s preparedness, the mean score was divided into three categories: below Average (1.0–2.4), Average (2.5–3.9) and above Average (4.0–5.0). The standard deviation indicated variations of the respondent’s responses whereby a high SD showed varying responses between preparedness and non preparedness of teachers to teach HIV education. The table below highlights the student’s response on the teacher’s preparedness to teach HIV education.

**Table 1. Students response on teachers preparedness to teach Integrated HIV/AIDS Education**

<table>
<thead>
<tr>
<th>Statement</th>
<th>N=201</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers comfortably teach HIV topics related to students sexuality</td>
<td></td>
<td>2.31</td>
<td>1.390</td>
</tr>
<tr>
<td>Teachers plan and prepare for HIV topics</td>
<td></td>
<td>2.96</td>
<td>1.498</td>
</tr>
<tr>
<td>Teachers vary teaching methods</td>
<td></td>
<td>3.19</td>
<td>1.559</td>
</tr>
<tr>
<td>Teachers encourage students participation</td>
<td></td>
<td>3.86</td>
<td>1.266</td>
</tr>
<tr>
<td>Teachers comfortably answer HIV questions</td>
<td></td>
<td>3.93</td>
<td>1.253</td>
</tr>
<tr>
<td>Teachers state the objectives of HIV topics clearly</td>
<td></td>
<td>3.48</td>
<td>1.278</td>
</tr>
<tr>
<td>Teachers are conversant and knowledgeable on HIV education</td>
<td></td>
<td>3.73</td>
<td>1.085</td>
</tr>
<tr>
<td>Teachers asses the students understanding of HIV</td>
<td></td>
<td>2.83</td>
<td>1.085</td>
</tr>
<tr>
<td>Teachers cover all HIV topics in their subjects</td>
<td></td>
<td>2.31</td>
<td>1.390</td>
</tr>
</tbody>
</table>

Table 2 shows an average response of the students on the teacher’s preparedness to teach HIV education. This is indicated by the average of means 2.82, measured on a linker scale of 1-5. The mean scores that were recorded on all the ten statements ranged between 2.02 and 3.93 while the standard deviation (SD) ranged from 1.25 to 1.56 indicating extreme variations in their responses. Hence an indication that some students strongly agreed on teacher’s preparedness while others strongly disagreed on their preparedness to teach HIV education. An average level of teacher’s preparedness to teach HIV education was recorded on the statements that sought to assess whether teachers trained the students on assertive skills, with a mean of 3.93; whether the teachers encouraged student’s participation, with a mean of 3.19 and whether their teachers are knowledgeable and conversant on HIV with a mean 3.16. Training of students on assertive skills is supported by the report on analysis of HIV/AIDS policy formulation in Kenya which emphasized the importance of HIV/AIDS education intervention of imparting skills to vulnerable groups for protection from vulnerable sex (ODI, 2006). Encouragement of students’ participation is similarly in agreement with the report given by Schunk (2000), which explained that involving the students in participatory learning, lessons interests and reduces the monotony of passive learning. For HIV education to be successful, it is essential that teachers make it interesting.

An average level response was also recorded on the statements that sought to find out whether teachers comfortably HIV topics related to sexuality, nevertheless, a standard deviation of 1.394 shows that while some students who agreed on their teachers comfort ability, others disagreed that they were comfortable to teach HIV topics related to sexuality. This response agrees with FHI (2000), report that stated “the cultural background may affect their choice of which topics to teach. In addition, an average level of preparedness was recorded on the statement, as to whether teachers used various teaching methods and whether they assessed students understanding on HIV topics.

A level of below average preparedness of teachers was shown in their unpreparedness to plan and prepare for lessons on HIV, before teaching with a mean of 2.31; whether they stated HIV objectives with a mean of 2.04 and whether they covered all topics in their subjects with the lowest mean of 2.02. Such low levels of teacher’s preparedness to teach HIV education agree with the analysis of HIV policy formulation which reported serious weakness in disseminating HIV education policy in schools (ODI, 2006).

**Table 2: Teachers response on their preparedness to teach integrated HIV/AIDS education**

<table>
<thead>
<tr>
<th>Statement</th>
<th>N=12</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I comfortably teach topics related to students sexuality</td>
<td></td>
<td>2.82</td>
<td>1.434</td>
</tr>
<tr>
<td>I prepare and plan for HIV topics as I do for other subjects</td>
<td></td>
<td>2.90</td>
<td>1.498</td>
</tr>
<tr>
<td>I use various teaching method to make HIV topics clear for students</td>
<td></td>
<td>3.93</td>
<td>1.253</td>
</tr>
<tr>
<td>I encourage students participation in class during HIV lessons</td>
<td></td>
<td>3.48</td>
<td>1.278</td>
</tr>
<tr>
<td>I train students on assertive skills to help protect themselves against</td>
<td></td>
<td>2.83</td>
<td>1.085</td>
</tr>
<tr>
<td>I clearly state the objective of HIV topics to teach</td>
<td></td>
<td>2.83</td>
<td>1.085</td>
</tr>
<tr>
<td>I assess students understanding of HIV topics through question and answer methods</td>
<td></td>
<td>3.19</td>
<td>1.559</td>
</tr>
<tr>
<td>I teach all HIV/AIDS topics included in the subjects I teach</td>
<td></td>
<td>3.73</td>
<td>1.085</td>
</tr>
<tr>
<td>Mean in preparedness</td>
<td></td>
<td>3.19</td>
<td>1.559</td>
</tr>
</tbody>
</table>

Table 2 shows the teachers response in measuring their level of preparedness to teach integrated HIV/AIDS. Their responses recorded an average level of preparedness with an average of mean of 3.63 in response to the ten statements they
were given. The data gave a standard deviation of 0.514 indicating that on average the responses deviated from the mean of 3.63 by a SD of 0.514 an indication of an average and above average level of response on teacher’s preparedness to teach HIV education.

A record of above average response of teacher’s preparedness to teach HIV education was recorded in three statements; out of ten statements they were given. These included: “I comfortably teach topics related to students sexuality”, with a mean of 4.0. This is an indication of high level of comfort ability. However, there were variations in the respondents responses in which some teachers they were not comfortable as indicated in the standard deviation of 1.08. Such response agrees with the report by Boler (2003) which indicated that some teachers are choosing the comfort of the the transmission approach and avoiding engagement with learners in ways that can draw their experience and contexts, hence the possibilities of some teachers avoiding topics that touch on sexuality. The other statement that recorded an above average response was whether they were comfortable answering questions on HIV, which recorded a mean of 4.1, to indicate their comfort ability. Teachers’ responses also indicated that they encouraged their students’ participation during HIV lessons with a mean of 4.33. Such preparedness has been advocated for by MOEST (2001), which asserted that preparation of teachers is very important in influencing the success of HIV/AIDS education.

The teacher’s response in the other statements indicated an average level of preparedness to teach HIV education with means ranging from 3.08 to 3.92. The standard deviation (SD) from 0.622 to 1.165 however, indicated below and below average response on the teacher’s preparedness. The statement included whether they teach all HIV topics included in their subjects; whether they used various methods to teach HIV lessons. However, an indication of below average level of teacher’s preparedness was recorded in other three statements even though the means were average.

These are the statements that sought to find out whether teachers stated the HIV learning objectives with a mean of 3.08; whether they are conversant and knowledgeable in HIV education with a mean of 3.36 and whether they assessed students understanding on HIV education with a mean of 3.30. These responses of some teachers’ unpreparedness agrees with the statement given by a teacher respondent in a research on teachers preparedness which stated “I think I am not that well prepared to handled HIV and AIDS out in the field with that knowledge that I have received in my training. I don’t think it is enough because I have not been exposed much about HIV/AIDS (Onyango, 2009). The teachers may also have not been exposed much to HIV education since they indicate lack of training to teach HIV education, when they were asked to respond to a question that sought to find out whether they had been trained to teach HIV education, with only 25 % positive response.

X. SUMMARY AND CONCLUSION

Based on the objective of the study the findings established that majority of teachers lack preparedness to teach integrated HIV education, as was observed in their failure to cover all topics that are integrated in their subjects and their failure to plan for lessons on HIV topics. The study established that majority of teachers had not been trained to teach HIV education.

In summary, the findings on teachers preparedness as previously presented, showed that most of the teachers response on their preparedness to teach integrated HIV/AIDS education was average with a higher average mean of 3.63. However, the students felt that the teachers were not well prepared to teach integrated HIV/AIDS education with a lower average mean of 2.82. This mismatch between the teachers and the learners presents an area of concern that needs to be addressed, so as to enhance the effectiveness of integrated HIV/AIDS education.

The study concludes that the impact of integrated HIV/AIDS education on the sexual behavior of girls in secondary schools has been affected by other attributes as shown in the conclusion that integration of HIV topics into other subjects and lack of training for the teachers preparedness to teach integrated HIV education in the secondary schools.

XI. RECOMMENDATION

This study recommends that there is need for the Kenya Institute of Education(KIE) to come up with an independent curriculum to cover HIV/AIDS education as an independent subject rather than covering it in bits in different subjects.

The government should also take the initiative of training teachers on HIV education as a teaching subject among others to be taught in the secondary schools.

There is also need for the Kenya Institute of Education (KIE) to come up with an independent curriculum to cover HIV/AIDS teaching resources in form of text books, teaching aids, time, syllabus and human resources for effective implementation of intergraded HIV/AIDS education in their schools.

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