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Abstract

The purpose of this study was to explore strategies used in teaching and learning HIV and AIDS in public secondary schools in Kisumu County. The study adopted convergent parallel mixed methods design. Stratified random and purposive sampling methods were used to select participants. Data was collected using questionnaires, in-depth interview and focus group discussion guide. Quantitative data was descriptively analysed using Statistical Package for Social Science (SPSS) version 26. Qualitative data was analysed using content and thematic analyses. The study established that teachers used multiple strategies to teach HIV and AIDS in schools. The study concluded that in spite challenges teachers encounter in teaching the subject, they strive to actively engage learners using different strategies during HIV and AIDS lessons. The study recommended that the Ministry of Education should provide schools with current and adequate HIV and AIDS teaching and learning resources, equip teachers with current information on HIV and AIDS and best teaching strategies through in-service and pre-service training.

Keywords: *HIV, AIDS, Teaching Strategies, Public Secondary Schools, Integration & Kenya.*

1.0 Introduction

The prevalence of Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) is one of the most complex health problems in the world especially among adolescents aged 15 to 24 years. The young people are seriously in need of information to equip them with experiential knowledge on HIV and AIDS preventative methods. In Kenya, despite the government establishing Education Sector Policy on HIV and AIDS to guide effective care, protection and support within the public sector, HIV prevalence is still high among school going adolescents. Left unchecked, the high rate of the pandemic can threaten the country's achievement of vision 2030, since education is the driving vehicle to the attainment of the vision.

1.1 Background to the Problem

Knowledge about Human immunodeficiency virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) can mean the difference between enjoying long and healthy life and having poor health condition. Human immunodeficiency virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) is a global problem affecting human race. Humans are prone to contracting HIV and AIDS irrespective of age, profession, religion, level of education and economic status. Although HIV and AIDS pandemic affect all age groups worldwide, it is more worrying among young people. In the year 2016, 55,000 adolescents between the ages of 10-19 died through AIDS-related causes (World Health Organization, 2018). Most secondary school students are in this age bracket (14-19); consequently are at high risks of HIV infection if education strategies to prevent and mitigate the spread of the virus are not candidly executed.

Schools are better placed to provide comprehensive education on HIV and AIDS, and other sexually transmitted diseases (STDs). United Nations General Assembly (2015), rightfully noted that in the absence of a known cure, school based education strategies remain the most effective and efficient modes of preventing HIV and AIDS infections among students. School based HIV and AIDS education programs are important and effective ways of affecting young people's knowledge, attitude and behaviour about sex-related health issues. To achieve the vision of UNGA, teachers have been given the mandate to sensitize learners on preventative methods of HIV and AIDS through education. Teachers are to adopt effective teaching and learning strategies to transform information on HIV and AIDS into experiential knowledge among students.

In an effort to mitigate the spread of HIV, nations of the world have initiated policy to include HIV and AIDS in education curriculum. For instance, United States of America, United Kingdom, Bangladesh, South Africa, Nigeria, Zimbabwe and Kenya. United States of America has incorporated HIV and AIDS education in Health Education Curricula (Snyder, de Brey, & Dillow, 2015). While in the United Kingdom, following the review of the National Curriculum in 2013, HIV and AIDS is taught under sex and relationships education (SRE) (Department for Education, 2013). In 2017, the UK government went further by making it a statutory requirement for primary schools to provide relationships education and secondary schools to provide relationships and sex education respectively (UK department for education, 2017).

Other countries such as Nigeria and Zimbabwe, family life and HIV education has been integrated in the school curriculum. In Zimbabwe, teachers are expected to use participatory teaching strategy in teaching HIV and AIDS and life skills education (Ministry of Education, Sport, Art and Culture, 2012).

The lessons are meant to sensitize learners more how to prevent and mitigate the spread of the pandemic. In South Africa, the government introduced Life Orientation program in all public primary and secondary schools around the year 2000. HIV and AIDS education is taught under LOP (Department of Basic Education, 2013). In response to high HIV prevalence in South Africa among young women, the government launched a national campaign strategy ‘She Conquers’ campaign aimed at decreasing teenage pregnancies and keeping girls in school SANAC (2017) in an effort to improve women health most of whom are still in high school.

The United Nations Children and Education Fund (UNICEF) report identified group-work and role-play as important strategies in which students discover the practical aspects of the knowledge they receive on HIV and AIDS education (UNICEF, 2009). Alzbeta and Emese (2016) state that role –plays though time consuming and depend more on participants willingness to actively participate, do not just pass HIV and AIDS information but share information among the learners thus giving them opportunity for attitude and behaviour change.

This implies that teachers can exploit the importance of role play in teaching HIV and AIDS to enable learners practise and build lifesaving skills such as saying ‘no to sex’ or negotiating for safe sex. Global Information and Education on HIV and AIDS (2017), report that active learning approaches are widely regarded as the most effective methods for young people to learn social skills. This style of learning promotes active engagement between learners and teachers, and makes HIV and AIDS education lessons enjoyable. Since HIV and AIDS has been integrated and infused in various subjects, it is not clear strategies teachers adopt during HIV and AIDS lessons to effectively mitigate its spread.

In Kenya, the Ministry of Education through Kenya Institute of Education (KIE) produced HIV and AIDS syllabus to guide teachers in the implementation of the program (KIE, 1994). The syllabus outlined strategies to be used in teaching and learning HIV and AIDS. During the initial implementation of HIV and AIDS education, teachers were not trained and were not even aware of the integration; thus implementation was weak (UNAIDS, 2008). This implies that teachers were not conversant with teaching and learning strategies which are effective in HIV and AIDS education in school. Lack of training of teachers in HIV and AIDS teaching methodologies is still a challenge to teachers in Kenya (Mbachi, Oboka, Simiyu & Wakhungu, 2015). Without adequate training on information of HIV and AIDS and teaching strategies, it is not clear the extent at which teachers adhere to the strategies outlined in HIV and AIDS syllabus.

The susceptibility of school going youths to engage in risky sexual behavior has been compounded by insufficient guidance from their parents at the family level. Results of studies on sexuality mainly in sub Saharan Africa indicate the reluctance of parents to discuss issues on sexuality with their children because open discussions on issues related to reproductive health is considered taboo (Mugweni, Hartell & Phatudi, 2013; Oluwaseyi & Clifford, 2018). Thus adolescence reproductive health in the region is constantly a complex and contentious topic. Faced with knowledge gap on SRH issues, the youths get knowledge from mass media and peers which may be twisted and inadequate (Macleod & Graham-Jearey, 2016). The extent at which

sexuality, HIV and AIDS education should be taught and how it should be taught determines teaching and learning strategies teachers use.

The risks of HIV and AIDS remains high within education sector in Kenya (Ministry of Health, 2018; UNAIDS, 2016; Terer, Langat & Otieno, 2019). Ministry of Health (2018), HIV progress report indicated adolescents as the largest proportion of people living with HIV in Kenya. Terer *et al* found that only 54% of female adolescents and 64% of male adolescents had comprehensive knowledge about HIV prevention. Centre for the Study of Adolescence (CSA, 2016) had earlier affirmed inadequacy of comprehensive HIV and AIDS education by stating that in Kenya, approximately 13,000 girls drop out of school every year due to pregnancies. Results of CSA, is consistent with other reports (Adhiambo, 2018; African population & Health Research Centre, 2020). Adhiambo reported increased number of unplanned pregnancies among school going female students in the year 2018 alone. This is in agreement with the report by APHRC (2020) indicating high rate of premature pregnancies among pupils and students between the months of March and June, following the closure of schools due to the outbreak of novel corona virus.

The consistent increase in unplanned pregnancies among female pupils and students suggests that they are not only sexually active, but engage in risky sex without protection. It further suggests the inability of students to translate information on HIV and AIDS into experiential knowledge to change their behaviour and practice towards indulging in risky sex. The ever increasing number of new HIV infections among school going adolescents despite the integration of sexuality, HIV and AIDS into education curriculum since 2003, made this study necessary.

In Kisumu County, the study locale, the researcher did not find any study attempting to explain why perceived risk of HIV infection remains high among school going adolescents. Yet, without clear evidence of effective teaching and learning HIV in schools, policy interventions and preventive measures may be deceptive and ineffective. To alleviate and mitigate HIV and AIDS risks among students, it is critical to understand HIV and AIDS teaching and learning strategies in public secondary schools in Kisumu County. The magnitudes of HIV infection is fairly unknown in the county, with most students not being aware of their HIV status and are unwilling to take HIV test. This scenario prompted the researcher to explore HIV and AIDS teaching and learning strategies in public boarding secondary schools in Kisumu County, Kenya.

1.2 Statement to the Problem

Although various prevention programs have been formulated to curb the spread of HIV and AIDS in schools throughout the world, school going adolescents continue to bear the brunt of HIV and AIDS epidemic. Significant proportion of new infections has been registered among the young people between the ages of 15 -24 years (UNAIDS, 2019). While 55,000 adolescents between the ages of 10-19 succumbed to AIDS-related causes in 2016 (World Health Organization, 2018).

In secondary school curriculum, HIV and AIDS education is expected to equip students with values, attitudes and skills required to make informed choices and to adopt healthy behaviours, as well as to learn to live with HIV in affected communities and societies. For any education program to achieve its objectives, appropriate teaching strategies need to be applied. Studies by Sarma and Oliveras (2013) in Bangladesh, Kahari (2013), Zimbabwe and Kiringa (2015) Kenya, revealed that teachers were trained in participatory methodologies to teach HIV and AIDS in school. The begging question however, is why HIV and AIDS infection rate is still high among

school going adolescents and yet teachers have the requisite teaching and learning methodologies.

A study conducted by Kenya Population- Based HIV Impact Assessment (KENPHIA) revealed that Nyanza region recorded the highest figures in HIV prevalence (MoH, 2020). Ministry of Health reported that between 2017 and 2018, new HIV infection was approximately 1,630 school going adolescents (MoH, 2018). The County has been experiencing increased HIV infection despite infusion of HIV and AIDS education in the curriculum in schools (Ministry of education, 2004).

Partnership between UNAIDS, USAID and secondary schools in Kisumu county to enhance implementation of HIV education in schools shows how gross the problem is on education. The partnership among the three bodies though commendable, has not impacted positively in controlling the spread of the pandemic among the young people (WHO, 2018). This scenario created urgent need for this study to explore teaching strategies used in boarding secondary schools in Kisumu County to mitigate the spread of HIV and AIDS and sensitize students against discriminating and victimizing their colleagues who are living with the virus.

Studies that have been conducted in the county indicate minimal to no assessment on HIV and AIDS teaching and learning strategies in public boarding secondary schools in Kisumu County. This scenario created urgent need for this study to explore teaching and learning strategies used in boarding secondary schools in Kisumu County to mitigate the spread of HIV and AIDS and sensitize students against discriminating and victimizing their colleagues who are living with the virus.

1.3 Research Questions

What strategies are used in teaching HIV and AIDS in public boarding secondary schools in Kisumu County, Kenya?

2.0 Review of Related Literature

In this section, theoretical framework anchoring the study and empirical review was discussed.

2.1 Theoretical Framework

This study was guided by the constructivist Learning Theory by Fosnot (1996). The theory has been discussed in line with how it emerged, how it has been applied, its strengths and weaknesses and its suitability to the current study. Constructivism is a psychological learning theory which explains how people acquire knowledge. The theory suggests that people construct knowledge and meaning from their experiences. According to the theory, students learn by building on their previous knowledge and experience and by actively engaging in the learning process, instead of receiving knowledge passively through lectures and memorization. Constructivist teaching uses guided discovery, discussions on thought and ideas as well as activities to help students learn. Constructivist teachers focus more on learning through activity, rather than learning from textbooks. The teacher strives to understand students pre-existing conceptions and use active techniques such as real-world problem solving and experiments, to address the students' conceptions and build on them. In a constructivist classroom, teachers encourage students to question themselves, their strategies and assess how the various activities are enriching their understanding. In constructivist learning, students construct knowledge actively instead of reproducing facts.

This theory instils the value of personal responsibility and provides learners with opportunities for personal decision. When learners identify their own problems and come up with possible solutions, they are able to change their attitude and behaviour towards sex which is one of the objectives of HIV and AIDS education. Studies that have used constructivism theory attest to its effectiveness in education. Booth and Mirsaeedi (2014) researched on the use of constructivist theory to find a way of increasing student throughput. Result of the study indicated success in the improvement of effective learning and student throughput. Moreover students felt more confidence to take the course examination. On the contrary in Uganda, results of a study by Maani (2013) indicated that although teachers' attitudes towards the use of constructivism approaches were positive, they rarely use it to teach Christian religious studies content related to sexuality and HIV and AIDS in schools.

In Kenya, Mutisya (2016) in a bid to contextualize the study of HIV and AIDS, adopted constructivist theory using audio-visual aid entitled *Elotutoengima* (the fire is coming). This teaching aid was developed and implemented among the Maasai to contextualize HIV and AIDS information. The results established that teaching aid significantly increased learners' knowledge of facts about HIV and positively improves their attitude towards HIV/AIDS. The study recommended that HIV and AIDS information in schools should be contextualized to the learners' environment.

The theory is appropriate for this study because it engages learners through interactive strategies in line with HIV syllabus produced by Kenya Institute of education (1994). The theory permits the teacher to be innovative in presenting sexuality, HIV and AIDS knowledge, skills, and values to the learners. This supports Amineh and Asl (2015) observation that unlike lecture method and reading, the most common teaching methods used to teach learners in post primary school, some students respond better to visual and audio-visual stimuli of lecture.

2.2 Review of Empirical Literature

Literature review on participatory methods in teaching at the University of Zilina, Slovak Republic applauds the importance of participative methods such as group work, brainstorming, role playing, case studies in motivating learners to engage in the learning process (Alzbeta & Emese, 2016). In teaching sexuality, HIV and AIDS education, teachers are expected to actively engage learners in the learning process for effective learning outcome. Study by Alzbeta and Kucharcikova though carried out at the university, teaching methodologies are the same across all subjects and learning institutions. Thus the study is necessary to fill contextual gap. In Manitoba, Canada, Restall and Gonzalez (2014) researched on effective strategies to reduce stigma related to living with HIV and AIDS. The study established that effective teaching should incorporate various teaching and learning resources to involve learners in the learning process (Restall & Gonzalez, 2014). Adoption of multiple teaching and learning resources has been supported by Alzbeta and Kucharcikova. They stated that for any teaching method to be effective, it should be supported by audio-visual device, such as flipchart, overhead projector, white board, models or support materials.

Albright and Gavina (2014) emphasised the importance of teachers to incorporate technology in teaching and learning HIV and AIDS to boosts learners' efficiency in class. Alzbeta and Kucharcikova (2016) state that for any teaching method to be effective, it should be supported by audio-visual device, such as flipchart, overhead projector, white board, models or support materials. The use of technology provides effective presentation, visual observation, enhanced

insight and faster learning. In Kenya, however effective use of technology is yet to be embraced by teachers especially in the study locale in teaching and learning HIV and AIDS pandemic.

In Zimbabwe, even though the Ministry of Education expect, teachers to adopt participatory strategies in HIV, AIDS and life skills education, teachers do not engage learners optimally with the current HIV, AIDS, life skills and Guidance and Counselling curriculum (Elphias, Naydene, & Mathabo, 2019), hence fail in serving the needs of students regarding HIV and AIDS. In Kenya, information learners get through life skills and HIV and AIDS education is not better. The government has done little to provide schools with relevant and current teaching and learning resources to facilitate HIV and AIDS education since its inclusion into education curriculum. Studies by Mbach, Oboka, Simiyu and Wakhungu (2015) on constraints teachers' encounter in the process of implementing HIV and AIDS curriculum in primary schools in Bungoma County cite lack of HIV and AIDS teaching and learning resources. Study by Nyarondia, Ongong'a and Omollo (2014), in secondary schools in Kisumu West district confirms dearth in HIV and AIDS teaching and learning. The study by Mbach et al was conducted in primary schools, and is inadequate to explain HIV and AIDS teaching strategies teachers use in secondary schools in Kisumu County. While study by Nyarondia *et al* was conducted in a smaller part of the larger Kisumu County, thus the results lack generalizability to a larger research setting.

Studies on HIV and AIDS focus on importance of teacher training to equip them with skills on HIV education (WHO, 2015; Kiringa, 2015). Sarma, Khan, Chowdhury and Gazi (2017), affirm the importance of training in exposing teachers to participatory teaching and learning approaches such as group discussions and role playing as beneficial in discussing HIV transmission and prevention with students. Higgs (2016) reiterates the importance of the curriculum to empower teachers and learners, to enable them build confidence in their own potentialities and to cultivate a sense of pride in their own ways.

Contrary to the outcome of studies by Kiringa (2015), Sarma *et al* (2017) and Higgs (2016) on the importance of training of teachers in HIV and AIDS education, most countries are yet to equip teachers with knowledge of HIV and AIDS and effective strategies of teaching the subject to learners. Study by African Population and Health Research Centre (2017) attributes negative attitude of teachers in covering certain sensitive topics, lack of attention to critical issues on sexuality and HIV and AIDS education, to lack of constructivist pedagogical training in HIV and AIDS teaching strategies. This implies that teachers may not fully engage learners in teaching and learning HIV and AIDS.

Culture and tradition is still an obstacle to deliverance of sexual education (Nqaba, 2014). Some teachers still consider talking about sexual issues a taboo (Lukolo & Van Dyk, 2015). This is due to challenges influenced by most African cultures that make them feel uncomfortable talking about sexuality openly. For instance, some cultures upholds virginity and still cling to the belief that when children are exposed to information on sexual matters, they are likely to engage in sex before marriage. Since teachers are a product of their culture, they are afraid going against their culture and tradition thus do not teach sexuality and HIV and AIDS adequately (Motsomi, Makanjee, Basera & Nyasulu, 2016). Nyarondia, Ongong'a and Omollo (2014) are in agreement that the level at which the aspects of HIV and AIDS were taught was very low, and when taught lecture method was the predominant method used by teachers, where the textbook is the main resource. Gibbs, Willan, Jama-Shai, Washington and Jewkes (2015) support the sentiments of

Nyaroncha *et al* that domination of classroom by teachers restricts learners' participation; thus, they are not fully involved to be furnished with correct information.

Billie and Inge (2019) established that socio-religious background of teachers affects effective delivery of sexuality education as what is taught is controlled by their socio-religious background (Billie & Inge, 2019). Joseph, Astrid, Marte, Charles, Haldis and Karen (2019) report the discomfort levels in teachers when addressing sexuality education. Thus, majority of the teachers are not as thorough in teaching sexuality and HIV and AIDS education as expected of them.

Although these studies were conducted in different contexts, most teaching and learning strategies apply globally. Therefore, this study was done to fill a contextual gap. Moreover, the studies were conducted on the benefits of participatory methods in teaching sexuality and HIV and AIDS education, teacher preparedness and obstacles teachers encounter in implementing sexuality, HIV and AIDS curriculum in schools. The current study explored strategies in teaching and learning HIV and AIDS in public boarding secondary schools in Kisumu County, Kenya.

3.0 Research Methodology

The study adopted a convergent parallel mixed methods design (Creswell, 2014) to assess HIV and AIDS teaching strategies. This design allowed the researcher to get a more complete understanding of the problem by getting data from both quantitative and qualitative methods (Creswell, 2014). The design strengthened the results of the study by bringing together the differing strengths and non-overlapping weaknesses of quantitative methods with those of qualitative methods (Creswell & Clark, 2011).

Participants were selected using stratified random sampling and purposive sampling methods. The study population was made up of 10 schools, 400 students selected using stratified random sampling, 10 school principal, 10 heads of department Guidance and Counselling and 120 teachers purposively selected.

Data was collected using questionnaires, interview guide; observation guide and focus group discussion. The suitability of research instruments was ascertained through face validity and content validity. A pilot study was conducted to establish reliability of the instruments. Cronbach's coefficient alpha method was used to determine internal consistency of the items on the Likert Scale through IBM SPSS version 22. This method was appropriate owing to the fact that it required only one administration of the test (Cohen & Swerdlik, 2014). Credibility and dependability of the instruments was ensured through methodological and source triangulation to improve the instruments. Creswell (2015) states that methodological triangulation is applied when the researcher uses two or more methods of data collection to measure variables. In this study, the researcher used interviews and open ended questionnaires.

Data from the questionnaire was processed, coded and entered into the computer for analysis using the Statistical Package for Social Sciences (SPSS) version 22. Descriptive statistics were used to summarize quantitative responses into frequencies, percentages and mean scores. Results of the analysis were presented in form of tables and texts.

Qualitative data from interviews was transcribed verbatim and presented thematically.

The results were then converged by comparing and contrasting results from both quantitative and qualitative data. Final interpretation was done by combining quantitative findings with qualitative ones (Creswell, 2015).

4.0 Findings and Discussions

4.1 Demographic Findings

Demographic information of teachers according to gender indicates near equitably distribution of teachers of HIV and AIDS, female (55%) while male (45%). Regarding the age of teachers, analysed results show that most of the respondents (57.5%) were 35 years of age and below and 20% between 36 to 45 years. This implies that most of the teachers must have graduated after 1999 when the Ministry of Education through Kenya Institute of Education (KIE) had developed HIV and AIDS syllabus to be used in primary, secondary and teacher training colleges (KIE, 1999). These teachers unlike their older counterparts must have had some training in HIV and AIDS education besides Guidance and Counselling, and life skills.

Demographic information of students indicates that the respondents' age ranged from 13-18 years. This is the time young adolescents are prone to engage in risky sexual activities which expose them to HIV due to rapid hormonal changes in their bodies. They are therefore in need of effective information on ways of preventing and spreading HIV.

4.2 Teaching Strategies used in HIV and AIDS Education

Table 1: Descriptive Statistics on Strategies Teachers use in Teaching HIV and AIDS

Instructional Strategies	Mean	Std. Deviation
Lecture	2.86	.59
Role playing	2.61	.91
Games & Sports	2.58	1.04
Group discussion	2.28	1.07
Brain storming	2.41	1.08
Sharing Experiences	2.24	1.03
Demonstrations	2.49	.83
Story telling	2.51	1.11
Analyzing case studies	2.84	.83
Songs	2.74	.74

N = 80

According to the data presented in Table 1, the mean scores on the strategies teachers use in teaching HIV and AIDS ranged from 2.24 to 2.86. The difference between the highest and the lowest means was 0.62 indicating there were no outliers in the data. Ideally, for the data to obtain its conceptual fit, the range should be close to zero. The analysis shows four mean scores were less than 2.5 indicating that the teachers agreed that HIV and AIDS teaching strategies used

were allowing students to share their experiences ($M = 2.24$, $SD = 1.03$), group discussions ($M = 2.28$, $SD = 1.07$) brain storming ($M = 2.41$, $SD = 1.08$) and demonstration ($M = 2.49$, $SD = .83$). These findings imply that these are the teaching strategies frequently used by teachers whenever they taught HIV and AIDS subject.

Quantitative response from teachers has been corroborated by qualitative data from interview, observation and focus group discussion guides. Besides the four main teaching strategies identified by teachers; qualitative data indicated that teachers used multiple teaching strategies such as lecture method, demonstrations, peer teaching, role playing, games and sports, audio-visual aides, brain storming and motivational speakers. Results from FGD showed how learners in most schools took initiative to start HIV and AIDS club, print monthly magazines with information on mitigation measures against HIV.

The strategies fall under participatory learning which allows students to actively interact with the subjects and among themselves with the guidance of the teacher or group leader. Through interactive learning, most learners are able to translate HIV and AIDS information into experiential knowledge which can impact positively on their attitude and practice towards engaging in risky sex. Gonzalez and Restall (2014), Kiringa (2015), Yego (2017), concur that use of various strategies in teaching HIV and AIDS are effective in changing the attitude and behaviour of students towards engaging in risky sex. The teaching strategies are in line with constructivists theory guiding this study. Sarita (2017) on advantages of constructivists learning theory states that CLT allows students to own what they learn, and are likely to retain and transfer the knowledge learnt to real life.

Teachers however, indicated lack of resources; training and socio-religious factors as major draw backs to effective teaching of HIV and AIDS. These findings corroborate those of UNAIDS (2018) which found out that certain instructional strategies were not implemented in most schools due to lack of resources. Restall and Gonzalez (2014) confirmed that inability to conduct experiential learning activities force teachers to use teaching methodologies which are not appropriate for HIV and AIDS education in secondary schools.

5..1 Summary of the Study

This study explored strategies in teaching HIV and AIDS education in public boarding secondary schools in Kisumu County, Kenya. Background information on HIV and AIDS teaching strategies indicates that the government through the Ministry of Education outlined teaching strategies to be used in teaching and learning of HIV and AIDS in all learning institutions in the country. The study was guide by the following research question; what strategies are used in teaching HIV and AIDS in public boarding secondary schools in Kisumu County? The theory of constructivist Learning Theory by Fosnot (1996) guided the study.

Literature related to HIV and AIDS implementation strategies was reviewed. The researcher did not come across any study on HIV and AIDS teaching strategies in public boarding secondary schools in Kisumu County in spite the county recording high rate of school going adolescents living with HIV and new HIV infections.

Convergent parallel mixed was used in exploring HIV and AIDS teaching strategies. Ten schools were sample out of which seven were girls' and three were boys' public boarding secondary schools. Sampling was done using both probability and non-probability methods. Data was collected using questionnaires, interviews, observation and focus group discussion guides.

Quantitative data was processed using the Statistical Package for Social Sciences (SPSS) version 26. While qualitative data was analysed by grouping the responses into themes and reported in narratives.

The analysed data established that teachers in these schools mainly used variety of strategies in teaching and learning HIV and AIDS. These included sharing of experiences group discussions, brain storming, role playing, motivational speakers, songs, clubs and lecture methods.

5.2 Conclusions

The study concluded that teaching and learning HIV and AIDS in boarding secondary schools in Kisumu County is more learners centred than teacher based. Despite several challenges teachers encounter in teaching HIV and AIDS, they strive to actively engage learners in HIV and AIDS education using interactive methods as outlined in HIV and AIDS syllabus produced by KIE.

5.3 Recommendation

Based on the findings and conclusion, the study recommends that for HIV and AIDS to be effective, the Ministry of Education should train teachers on effective teaching strategies and current information on how HIV and AIDS can be prevented. The government through the Ministry of Education should provide adequate and relevant HIV and AIDS teaching and learning resources. To overcome socio-religious obstacles to comprehensive sexuality, HIV and AIDS education, the study recommends the incorporation of parents, religious and community leaders in HIV and AIDS education as motivational speakers in schools.

5.4 Areas for further Studies

From the findings, the following issues came up and have been suggested for further research: A study to find out why behaviour change among students in relation to HIV and AIDS education is low; a study to establish why the government has not made HIV and AIDS education part of the curriculum.

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