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Moran GJ, Amii RN, Abrahamian FM, Talan DA (2005). Methicillinresistant *Staphylococcus aureus* in community-acquired skin infections. *Emerg. Infect. Dis.* 11: 928-930.

Pitout JDD, Church DL, Gregson DB, Chow BL, McCracken M, Mulvey M, Laupland KB (2007). Molecular epidemiology of CTXM-producing *Escherichia coli* in the Calgary Health Region: emergence of CTX-M-15-producing isolates. *Antimicrob. Agents Chemother.* 51: 1281-1286.

Pelczar JR, Harley JP, Klein DA (1993). *Microbiology: Concepts and Applications*. McGraw-Hill Inc., New York, pp. 591-603.

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*Review*

# The impact of HIV/AIDS on the elderly and proposed strategies to curb the effect

Nankwanga Annet

Makerere University, P. O. Box 7062, Kampala.

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This paper presents policy issues from a study that was conducted by members of the Uganda National Advocacy team on HIV/AIDS Care from July to December 2012. The aim was to explore HIV/AIDS challenges among older persons and strategies that could be used to curb the effect. Respondents were purposively selected older persons from rural and urban areas of Pallisa, Kamwenge, Luwero and Budaka districts. It was a qualitative study. Data was collected using focus group discussions and in-depth interviews with 40 elderly persons at health center IVs. And an interview schedule was administered to 4 key informants who included health personnel working at these health center IVs. Respondents were selected with the help of community leaders and Village Health teams. Others were accessed through snowballing. Elderly persons provided data on HIV/AIDS-related challenges and proposed strategies that could be used to curb the disease. Key respondents provided data on strategies that could be adopted to curb the effects of the epidemic. Data was analyzed using content analysis and descriptive methods. Results showed that older persons were faced with policy issues regarding HIV/AIDS. They included lack of access to ART treatment due to long distances to the health facilities where ART is available, high costs, stigma and isolation by society, negative attitude of the community and nutrition challenges among others.

**Key words:** Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), older persons, challenges, policy strategies, Uganda.

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## INTRODUCTION

This paper aims at conveying the challenges faced by older persons who are infected and affected by Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) in Uganda and proposes the possible strategies that could be put in place to curb the situation. The policy issues raised were obtained through a qualitative research that was conducted by members of the Uganda National Advocacy team on HIV/AIDS care, support and treatment in conjunction with Uganda Reach the Aged Association (URAA), a national umbrella orga-

nization for older persons. The data was collected from July to December, 2012 from four sites (both rural and urban) that included Luwero, Kamwenge, Budaka and Pallisa districts that represented three regions of the country. Individual in-depth interviews and focus group discussions were conducted with ten purposively selected older people at each of the sites after seeking for their consent. The interviews that lasted for almost two hours were carried out at the health center IVs in these districts. Most of the respondents were selected

with the help of community leaders and village health teams (VHTs) who brought them to the health centers where the researchers were based while others were accessed through use of the snowballing technique.

Following data collection process, data was analysed using content analysis. The analysis involved reading the written scripts, one by one, and in a repeated manner so as to develop a meaning out of them. There was also repeated listening and re-listening to recorded audiotapes, so as to reflect on the data and also, make notes and memos. This was followed by grouping of the data into themes and then sorting the themes according to broad categories. This was done by combining related themes and renaming them as one theme. The developed thematic categories were then re-categorised. Sub-themes were also developed under each of the major themes. In addition, field notes were used to corroborate the themes and to assist in the interpretation of findings. The themes identified included the different challenges that older persons with HIV/AIDS are facing and the strategies that can be used to curb the situation. The findings are reported as policy issues and proposed strategies in the last two sections of the paper.

The interviews produced very good information that needs to be disseminated to the decision makers for action. This paper therefore has been developed purposely to pass on the findings of this study to the right people who can make use of this information in terms of influencing policy and advocacy.

The paper targets the decision makers, officials from Ministry of Gender, Labour and Social Development that directly deal with issues of older persons in the country, Ministry of Health and NGOs that deal with issues of HIV/AIDS such as The AIDS support organisation (TASO), AIDS Care, Mildmay Uganda, Uganda network of AIDS service organisations (UNASO), United Nations Program on HIV/AIDS (UNAIDS), among others. There is need for these organizations to work together and embrace the challenges that are affecting the quality of life of the older persons using the guidance of the proposed policy strategies. However if these challenges are not addressed, the older persons will continue living in deprivation for a greater part of their life time as they age chronologically, which deters them from fending for themselves.

## BACKGROUND

Although various interventions have been made by governments to curb its effects, AIDS still remains one of the major challenges of the 21st century. More than 33 million adults and children are still living with AIDS worldwide, of which 22 million can be found in sub-Saharan Africa. During 2009 alone, an estimated 1.3

million adults and children died as a result of AIDS in sub-Saharan Africa (UNAIDS, 2010). And since the beginning of the epidemic, more than 15 million Africans have died from AIDS. This is not a small number that can be ignored. At the present, although access to antiretroviral treatment has started to lessen the toll of AIDS, fewer than half of Africans who need treatment are receiving it (UNAIDS, 2010). In addition, the number of children orphaned by AIDS alone increased drastically from 11.5 million in 2001 to 15 million in 2003; and it is estimated to have reached 24 million in 2010 (UNAIDS, 2010).

However, at one point in time, the HIV prevalence rate in Uganda was seen to dramatically decline. It was estimated at about 18% in the mid and late 1980s, and now the HIV/AIDS prevalence rate currently stands at 6.4% (URAA, 2010). This striking reduction in Uganda was accredited to the open policy on HIV/AIDS and a strong political will to combat the pandemic at that time. However, though the number of people infected with HIV/AIDS in Uganda declined, the impact of AIDS will remain severe for many years to come. Older people have not been spared from the epidemic that has been gripping the continent too (Abrahams and Pia, 2002). Yet in most communities worldwide, older people have not been the major focus of attention largely because of the widely held belief that they do not have much to offer since they have already played their part and have outlived their usefulness in society (Knodel, 2008).

The impact of AIDS, especially in resource constrained settings results in a great deal of physical and psychological suffering (Baden and Wach, 1998). The high levels of morbidity and mortality associated with AIDS is likely to have long-term implications for development. Similar findings have been noted by Knodel (2008) who outlined potential pathways through which HIV/AIDS affects older persons in Thailand and Cambodia. These included emotional distress due to loss of children who are infected by the disease, difficulties in providing material support during illness, increase in care giving activities that requires greater time and effort which eventually impacts even their involvement in income generating activities, adverse community reactions which lead to psychological trauma, stigma and financial stress due to increased expenditure on funeral costs after death. Other impacts included loss of the child's support to the household, high costs of orphan care and loss of future support in old age (Knodel, 2008). This study found comparable challenges impacting older people in most parts of Uganda (Kawuma et al., 2012).

In many countries, the epidemic has killed middle-aged adults and shifted the burden of childrearing onto older people; and this burden is growing as the number of children orphaned by the epidemic continues to increase (Ainsworth and Dayton, 2000; Knodel et al., 2001). Thus,

older people are now playing a key, though arduous role of bringing up children - the world's future capital. Older people also find themselves providing physical, economic, and social support to their sick children; hence having less time to engage in income generating opportunities so as to sustain their livelihoods (Tavengwa-Nhongo, 2004). The epidemic has indirectly changed the role of older people, particularly women who in Africa are less likely to have a regular income. Indeed, Help Age International (2008a, b) highlights the gender division in caregiving activities, with 80 percent of older female caregivers and only 20 percent older male caregivers. This depicts a picture of how to a great extent AIDS has impacted on the older women than the men.

Despite the existence of a great deal of scholarly work on HIV/AIDS in Uganda, there has not been much emphasis on how the epidemic has affected older people in Uganda, which indeed affected planning for them. This is partly because most of the data focuses on the age group 15 to 49 years and it is only recently that additional information on the slightly older age group of 50 to 59 years was included in the data collection tools in the country (Kiiza-Wamala, 2008) but still the analysis of the findings was not done because the current report on HIV/AIDS in the country does not report on older persons (UNAIDS, 2010). Thus, the older age groups have been excluded possibly due to the assumption that AIDS affects only young people. This assumption is however deceptive since there is evidence that the epidemic has affected other members of society, including older people (Knodel 2008). Older people have fallen victims to the disease by being infected and at the same time affected by the disease through caring for the sick children (Best, 2002; Fouad, undated). Many of them have lost economic hope as a result of losing their adult children to HIV/AIDS. Consequently the plague has weakened the traditional social security system based on families and kinship ties. Actually, older people who loss children in their early stages of life are likely to suffer during old age as there will be lack of various forms of support that they need at that time.

Regarding human rights, the HIV/AIDS-related Human Rights include the right to freely receive information, social security, and welfare assistance, but older people are unable to realize these rights because they have been excluded from most of the HIV/AIDS programmes (Knodel, 2009; Help Age International, 2005; Kyomuhendo, 2003). While promotion and protection of such human rights would have reduced older people's vulnerability to HIV infection, trifling efforts have been spent on ensuring that this happens. Consequently, older people have remained trivially empowered to respond to the epidemic (Kyomuhendo, 2003). Most of the ongoing HIV/AIDS awareness campaigns, treatment programmes, and researches in the world over do not target older people (Population Reference Bureau, 2007).

Consequently, they end up catching the disease out of ignorance (Mugenyi and Kanyamurwa, 2004). They also take long to know that they are really suffering from the epidemic because of their tendency to largely believe in and use traditional healing methods (Mukasa-Monico et al., 2001).

In 2001, the United Nations Declaration on HIV/AIDS recognized the role played by older people and committed itself to adjusting and adopting economic and social development policies that address the special needs of these people (United Nations, 2001). Unfortunately, very few and moreover ineffective national policies have been put in place (Help Age International, 2005). In Uganda, despite considering HIV/AIDS as a developmental issue in the country's 2025 Vision and Poverty Eradication Action Plan (PEAP) (Asingwire and Kyomuhendo, 2003), older people infected and affected by the epidemic have not been included in most of the development programmes. There are no welfare programmes targeting these people; and no special healthcare programmes for them as there are for children and maternal health (Alun, 2003). There are only a few NGOs like URAA, ROTOM and a few others that are trying to focus on the elderly. Yet, these NGOs are also financially constrained hence they end up targeting only a handful of older people while the majority remain with no rescuer. Likewise, the current government social protection plan (SAGE) that is at pilot stage now is also targeting very few older persons in a few districts (only fourteen) and this is likely to take several years before the actual policy on social protection is developed and implemented hence those who are not receiving the 23000/= UG Shs (the amount of money received by poor people (older people inclusive) through a five year pilot project SAGE (social protection Grant) that is run by Ministry of Gender Labour and Social Development. The amount is 24000 shs but the 1000 is for bank charges so they will receive 23000 shs per months for five years) from this pilot project will remain yearning for some long period of time as they wait for the government plans to move on.

The Uganda's National HIV/AIDS Policy also highlights older people as one of the groups that should be provided with HIV/AIDS voluntary counselling and testing (VCT) services. However, this policy addresses older people on paper because there is nothing much to show on ground (Help Age International, 2006). Most of the VCT services target youths and adults. There are no identified elderly-people-friendly VCT services provided in the country except for one district (Mukono) which out of the initiatives of their leaders, came up as a model district that recognizes older people seeking health care services by providing them with cards which make them receive services as soon as they reach hospital facilities within the district. They are also given a special day in a week to attend to their specific health issues. However, this

model has not yet spread to the other districts yet it is a good practice to learn from.

Uganda's Policy on Antiretroviral Therapy and National Health Policy have not helped matters either. A review of these policies reveals that none of them gives older people living with HIV/AIDS the attention they deserve. While the policy on antiretroviral therapy gives guidelines to the administration of this therapy and it seeks to promote the provision of information regarding ARVs at community and facility levels, it is silent on older people and no reviews have been done to address this gap. Similarly, the various health services highlighted by the National Health Policy, including immunisation, vaccination, medical treatment, antenatal services, and adolescence services, are largely not for older people (Ministry of Health, 2005, 2006). This scenario is dangerous to this group of people. It was cited as one of the major causes of HIV/AIDS deaths among elderly females in Zimbabwe (WHO, 2002; Mutangadura, 2001).

It has also been noted that less priority is given to older people affected and infected by HIV/AIDS in terms of budget allocations both at national and district levels despite there being a policy for older persons (Kawogo, 2008; Government of Tanzania, 2000). Hence they are disadvantaged when it comes to national budgetary priorities. The exclusion of HIV/AIDS infected or affected older people from many of HIV/AIDS welfare programmes not only renders these people more vulnerable to the epidemic but also casts doubt as to whether the programmes have effectively achieved their purposes in the context of the Millennium Development Goal of eradicating HIV. In fact, studies on the impact of HIV/AIDS indicate that nothing much has been done to include older people in HIV prevention and treatment programmes (Hardon, 2005; Bekunda et al., 2004; Alun, 2003; Alun and Tumwekwase, 2001).

The foregoing observations suggest that little is known about the plight of Uganda's older people infected or affected by HIV/AIDS. These issues need to be brought to light so that decision makers can use this information in decision making. Some of the researched issues affecting the older persons are highlighted in the next section:

## **Policy Issues that came out of the qualitative study**

### **Access to ART**

Evidence gathered clearly shows that some older persons especially from the rural areas are still having challenges in accessing ART from health centers. This is as a result of long distances from their home residences to the health centers where they are supposed to get the drugs from and also the high costs involved in transport. On the other hand, witchcraft and religion hinders access to treatment; some of the older persons still believe so

much in witchcraft to the extent that even when they are suffering from HIV, they may think they are being bewitched and this leads to delayed diagnosis. In addition, there are community and older persons' misconceptions about HIV acquisition. Some community have a misconception that older persons do not have to have sex and some of the older persons also feel that they are above the HIV acquisition age. These misconceptions make the HIV positive older persons afraid or ignore looking for care, hence leading to late diagnosis.

### ***Stigma and isolation by society towards older persons with HIV***

There is both self and community related stigma towards HIV positive older persons.

**Neglect:** In some families children and grand children neglect older persons and don't take care of them, they would rather want to have the property from the older persons that they don't care about

**Negative attitude:** To the very old, there is a negative attitude from everybody including the nation, health workers, relatives, community and family members regarding helping older persons. In some situations family members are willing to assist but when the resources are not available, they will not prioritize the older persons.

**Nutrition:** Older people face nutrition challenges, yet the ART drugs themselves require eating a balanced diet which they cannot afford. Hence those who are on ART face adverse side effects of the drugs as a result of not eating frequently and not having a balanced diet.

**Poverty:** Majority of older persons are poor. Poverty hinders good nutrition and access to essential needs. They also lack school fees for the children under their care which bars these children from attending school and accessing other social services. The women seem to be more hit by poverty than the men.

**Loneliness:** They suffer loneliness due to separation or loss of spouse and this affects mostly the ladies because the men normally get the opportunity to remarry.

**Drug reaction:** Some of the older persons who are using Septrin react to it yet some health centers lack drugs like dapson which could be used as an alternative and they are told to buy yet they cannot afford the costs involved.

**Long waiting hours at health facilities:** Older persons are still facing challenges of long waiting hours at health facilities which depress them. This is because some health workers don't mind about the older persons during



triage, they are not identified to be served first considering their physical body weakness.

**Distance to the health facilities:** Is still a challenge to many of the older persons as many of them stay more than five kilometers away from a health facility.

**Multiple diseases:** Many of the older persons who are infected with HIV have got other diseases that come with old age such as non communicable diseases (NCDs) hypertension, diabetes, arthritis, cancers among others. But when they come for ART treatment the other opportunistic diseases and conditions are not taken into consideration. Hence, a need for a holistic approach in their management.

**The pill burden to the older persons:** ART drugs cause side effects such as nausea and body pains among others, yet the older persons have other non communicable diseases that come with old age, for which they are taking medication leading to poly pharmacy. No one knows yet the effects of multiple drug interactions due to multiple drug intakes in older people because no study has yet been carried out regarding this challenging topic. This needs to be taken into consideration by pharmaceuticals so that these people could be helped from this burden.

**ART prescription and drug adherence challenges:** The health workers confessed to be facing challenges in prescribing ART to older persons due to their varying weight and lack of knowledge in geriatrics. There are no geriatricians in Uganda who are specialized in treating older persons. This still leaves a gap in the medical management of older persons in the country. On the other hand, prescription guidelines are not weight related. The current existing guidelines are for pediatric and adults in general, there are no specific guidelines for older persons yet they have different physiological changes including weight loss, increased fat deposition, bone density, reduced lean mass, cardiovascular changes and other changes due to NCDs, hence the need for their specific treatment guidelines.

**Adherence:** Some older persons fail to turn up on appointment for treatment due to lack of transport and sometimes due to ill health; this affects their adherence to drugs. Some forget to take the drugs on time while others have side effects that hamper them from adhering to drugs and some do not have people who could take care of them.

### HIV prevention messages

The current available messages are not age friendly because they predominantly target the youth and are put

at health facilities. Access to the messages is not available it is only those who come to the health facilities and are able to read who may access the messages. But even the health facility is not the best place to have prevention messages because when the older people come they are sick and are only thinking about treatment and yet only a few can read and understand these messages. Conversely, health promotion/education programs for prevention are meagerly funded and the budget is only 10% of the total budget. This is not adequate to enable dissemination of messages to the rural community level and yet this is where majority of older persons are located. Messages targeting the older persons should be conveyed in their local languages so that the older persons can understand them well. On the other hand, the older persons are not asking for condoms which could help prevent cross infection during sex activities. Currently majority of the distributors of condoms are young people, this hinders older persons from asking for condoms from the young as it creates stigma. So there is need to involve them in the distribution of condom program. Probably the use of elderly VHTs would help to address this problem.

### Disclosure status of HIV positive older persons in the care at the health facilities

Majority of the older persons either have nobody to disclose to or are shy to disclose due to fear of stigma while some are in denial, they have challenges with whom to disclose to and there is no right person. Those who are married do not go for treatment as couples yet they fear telling each other. Some fear the negative reaction that could possibly occur as a result of disclosure. In some scenarios, in an interview with some of the older persons, some older persons were abandoned, a typical example for instance is a lady in Pallisa district who reported being abandoned by her husband for 2 years when she disclosed her status to him and this translated into denial of support from him. Sometimes fear of disclosure affects adherence to medication for some of the older persons who have never disclosed to their spouses or others may fail to start the treatment at all because of fear to be identified as sick.

### Proposed policy strategies

Specific guidelines for ART treatment for older persons should be developed to help the health workers in prescribing drugs to older persons at the health facilities. Geriatric training should be included in the existing health training institutions in order to avail geriatric knowledge to health workers. This will enable them to handle and adequately treat older people in health facilities. Many of older persons are sick and unable to access health

facilities due to long distance from the health facilities or costs involved; thus the need for them to be included in home based care services even with ART is critical. Messages on access to ART treatment should be aired on radio in local languages to increase access and the written preventive and treatment messages should also target older persons in order for them to understand the messages. The messages should be delivered in various forms that are old-age friendly. Condom access program should be redesigned to include older persons so as to improve access to condom use by older persons.

Specific health needs of older persons should be included in the existing health promotion programs to involve older persons in the medicine distributors program so that they can distribute drugs and condoms to older persons. This might help in improving access to condoms and drugs. There is need for research to be carried out by the pharmaceutical companies regarding drug interactions which could result from poly pharmacy and also think of reducing the pill burden for the older people who are taking so many drugs several times a day.

Increased sensitization on the relevance of HIV disclosure should be emphasized to encourage older people to disclose so that they can start on the treatment as early as possible.

Nutrition education and services should be incorporated in the ART clinics as many of the older persons who are infected with HIV/AIDS are also facing nutritional challenges.

Since older persons have been highly hit by poverty, there is a dire need for income generating activities for those who are able to do so in order to improve on their quality of life while those that are unable to carry out such activities could be given handouts and social protection. Orphans and vulnerable children programs should take care of children under the care of older persons so that these children can be supported adequately. Legal protection should be given to older persons whose relatives want to grab land and other assets from the older persons. There is also a dire need to revitalize the family social support as this is the main support system to older persons.

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*Full Length Research Paper*

## Literacy and HIV/AIDS awareness, prevention and management among women in Cross River State

Ada Mary Juliana\*, Okoli Georgina Ekama and Okoli Innocent

Department of Educational Foundation, Cross River State College of Education, Akamkpa, Nigeria.

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The direct correlation between literacy, health, economic and political power and the exercise of informed choices especially for the women is enormous. Education is a liberating force; it ensures mobility and development of one's potentials. Two research hypotheses were posed and tested in this study. The design of the study was basically survey descriptive. The population of the study comprised women from the eighteen local government areas of Cross River State, Nigeria. Twenty-four women were drawn from each of the eighteen local government areas using the simple random sampling technique. In all, a total of four hundred (400) women were used for the study. Instrument for data collection was a twenty item women human immune deficiency virus/acquired immune deficiency syndrome (HIV/AIDS) Awareness, Prevention and Management Questionnaire (WLAHPAPMQ). Data were analyzed using the Pearson product moment correlation analysis. Results from this study revealed a high positive correlation between literacy and HIV/AIDS awareness, prevention and management among women. Recommendations made include the need for intensification of adult education and mass literacy programmes as well as the setting up of non-formal education for rural women. Also, agencies such as the National Orientation Agency should be made relevant to these needs.

**Key words:** Human immune deficiency virus/acquired immune deficiency syndrome (HIV/AIDS), women, literacy, aids management, Cross River State.

### INTRODUCTION

Human immune deficiency virus/acquired immune deficiency syndrome (HIV/AIDS) has become the worst pandemic in human history from which no one is immune regardless of gender, class or social orientation. More than a health crisis, the HIV/AIDS pandemic is a global challenge which has continued to elicit concern from individuals, government and non-governmental agencies. World Health Organization (WHO) (2001) reported that young people aged between fifteen to thirty years are especially at risk particularly young women who, in many

countries have limited access to information and public health services.

According to Kickbuschi (2005), people's inability to read and write makes them vulnerable to getting the virus. More so, the gender disparity in literacy especially in Nigeria, means that women that are illiterate belong to the high risk group. According to World Bank report of 2010, the literacy rate of women in Nigerian female adults (age  $\geq 15$  years) was 49.81% in 2009. It is estimated that sixty percent of illiterate adults in Nigeria are females

\*Corresponding author. E-mail: fidekisa@gmail.com.

which has contributed greatly to high level of poverty among women in the country. Studies carried out by WHO (2010), Oyedele (2002) and United Nations Educational, Scientific and Cultural Organization (UNESCO) (2010) have shown that literacy level is correlated with good health, health facility use and longevity.

HIV/AIDS is not solely a health crisis but a developmental one as well, ninety percent of HIV/AIDS cases are from developing countries (UNAIDS, 2001; Bassey, 2007). Whelan (1999) observed that gender and norms significantly affect individual risks and societal vulnerability to HIV/AIDS because they ascribe distinct productive and reproductive roles to women and men and because they differently influence women and men's access to key resources such as education, employment, income, land and property.

Mill and Anarfi (2000) gathering data from interviewing 400 HIV positive women in Ghana sought to study the life histories of the women to look for patterns by risk. Also, they sought to find out ways of prevention from these women. From their study, they found out that women were more vulnerable to HIV/AIDS infections broadly due to economic and social reasons. Economically, they maintained that women received less education than men and this leads to poverty. The women interviewed contended that increased public education as well as access to better health care will help. According to UNAIDS (2001), several factors have contributed to the high HIV infection rate among women in Nigeria. These include sexual networking practices such as polygamy, high prevalence of untreated sexually transmitted diseases, low condom use, poverty, low literacy, poor health status, low status of women, stigmatization and denial HIV infection risks among vulnerable groups.

Okoli (1998) maintained that the direct correlation between literacy, health economic and political power and the exercise of informed choices especially for the woman is enormous. She maintained that education is a liberating force, it ensures mobility and development of one's potentials. Unfortunately, most women in Nigeria are based in the rural areas and most of these rural women have not attained even the minimum level of formal education. Consequently, most of them cannot articulate meaningful positions on issues affecting their welfare neither can they be easily mobilized to lend votes and voice to genuine women's aspirations even as it concerns HIV/AIDS prevention and management.

### **Literacy and HIV/AIDS awareness prevention and management.**

The American Act of 1991 describes a literate person as someone who is able to read, write, compute and solve

problems at levels of proficiency necessary to function effectively in the society so, women generally need literacy education that will make them perform better in their own societies. In the same vein, Oyedeji (1985) noted that literacy education is equally needed to empower the recipient and acquire indispensable knowledge and skills that will enable them perform more effectively in every societal activity like family planning and HIV/AIDS prevention and management. Literacy education for the purpose of this study refers to all kinds of learning that take place whether formal, non formal or informal as well as whatever level of contact whereby certain values, beliefs and behavioural changes are attained by the individual.

Literacy will make the level of awareness of women last longer especially when they can read about the dangers of HIV/AIDS and the benefits of preventing themselves from contracting the disease. It equally enable them understand and imbibe cultural values better. Women who are literate will appreciate other ideas and cultures outside their own (Aderinoye, 1977). Literacy would make women appreciate the importance of staying HIV/AIDS free and live longer and healthy. If already infected with the virus, it will also enable them to become more responsive to campaigns against HIV/AIDS.

In a study conducted by USAIDS (2002), lack of literacy education among women was one of the major reasons associated with the high HIV/AIDS prevalence rate among women in Nigeria. Okoli (2006) also confirmed that lack of literacy education has been found to contribute to the poor attitude of women towards HIV/AIDS prevention. According to her women who are literate were more receptive to HIV/AIDS prevention information and would more easily and readily adopt such measures than the illiterate ones.

### **Statement of the problem**

The problem investigated in this study is the relationship between literacy and HIV/AIDS awareness, prevention and management among women in Cross River State.

### **Hypotheses**

Two null hypotheses were formulated to guide the study. They include:

1. There is no significant relationship between literacy and HIV/AIDS awareness among women.
2. Literacy does not significantly influence HIV/AIDS prevention and management among women.

### **Design of the study**

A survey study design was adopted in this study was



basically survey descriptive.

### Area of the study

The study covered Cross River State, one of the thirty-six states in Nigeria situated in the South-South geographical region of Nigeria. Cross River State has its capital in Calabar. The State is made up of eighteen Local Government Areas, which are: Abi, Akpabuyo, Biase, Bakassi, Akamkpa, Calabar Municipality, Calabar South, Obubra, Yakurr, Ikom, Etung, Odukpani, Boki, Ogoja, Bekwarra, Obudu and Obanliku. There are three major languages spoken in the area; Bekwarra, Efik and Ejagham; the occupations of the people include farming, fishing and civil service.

### Population of the study

The population of this study was made up of women from the eighteen Local Government Areas of Cross River State.

### Study sample

Twenty-four women were randomly drawn from each of the eighteen Local Government Areas. In all, a total of four hundred and thirty two (432) women were selected and used for the study.

### Instrumentation

The instrument used for data collection had twenty items, women literacy and HIV/AIDS awareness, prevention and management questionnaire. The instrument was developed by the researchers and was scrutinized by research experts. The questionnaire sought the responses of the women with respect to their literacy level, HIV/AIDS awareness, attitude towards prevention and management of HIV/AIDS, the instrument was administered personally by the researchers and through assistance.

### Data analysis

Data collected from the instrument were collated and analyzed using the Pearson product moment correlation analysis. Hypothesis-by-hypothesis was presented as in the following table and figures.

## RESULTS

### Hypothesis

1. There is no significant relationship between literacy and HIV/AIDS awareness among women. Table 1 shows

**Table 1.** Pearson Product Moment Analysis of relationship between literacy and HIV/AIDS awareness N = 432.

Variable	y	X <sup>2</sup>	Xy	r
Literacy	1674	25524	27382	0.22*
HIV/AIDS awareness	1971	33835		

P < 0.05, df = 388, critical t = 198.

**Table 2.** Pearson Product Correlation Analysis of relationship between literacy and HIV/AIDS prevention and management N = 400.

Variable	y	X <sub>2</sub>	Xy	r
Literacy	1674	25534	93795	0.054*
HIV/AIDS awareness	6527	366887		

P < 0.05, df 388, at t.198.

that the calculated value of correlation co-efficient between literacy and HIV/AIDS awareness ( $r = 0.22$ ) is greater than the t-value of 196 required for significance at 0.05 level of significance with 430 degrees of freedom. The null hypothesis is therefore rejected.

2. Literacy does not significantly influence HIV/AIDS prevention and management among women.

The result in Table 2 shows that the calculated value  $r = 0.54$  is greater than the critical t-value of 196 at degree of freedom = 430 and at 0.05 level of significance. The null hypothesis is therefore rejected.

## DISCUSSION OF RESULTS

The study found a high positive correlation between literacy and HIV/AIDS awareness among women. This means that the level of literacy determines the level of HIV/AIDS awareness among women. No literate women claimed total ignorance of HIV/AIDS which shows that the level of education of a woman would significantly affect her level of awareness about HIV/AIDS and many other issues affecting her well being. The analysis also confirms that not every woman in Cross River State is adequately aware of HIV/AIDS. It also confirms the study of Okoli (1998) who maintained that the educational level of a woman will influence her level of awareness. A literate woman will no doubt be able to read HIV/AIDS materials which are mostly in prints. She will also be more open and receptive of HIV/AIDS information.

Unfortunately, however, the level of HIV/AIDS awareness among Cross River State home is still very inadequate due to level of literacy. Another finding of this study showed a high positive correlation between literacy and HIV/AIDS prevention and management among Cross

River State women. This means that level of literacy determines how well a woman will be able to protect and manage herself in the contact of HIV/AIDS. It confirms that the more literate a woman is, the more she will be able to make meaningful decisions about herself and society. A literate woman would more readily accept and practice HIV/AIDS preventive measures and would be more able to manage the disease.

This finding also confirms UNESCO (2007) assertion that non-literacy and low level of education often contribute to lack of awareness and low level of adoption of HIV/AIDS prevention and management measures. This study confirms findings by Okoli (2006) that low level of literacy has contributed to poor attitudes of women towards HIV/AIDS prevention and management.

## CONCLUSION AND RECOMMENDATIONS

1. Non-formal education of rural women need to be stepped up to enhance their mobilizability. In this regard, agencies like the National Orientation Agencies (NOA) should be made more relevant to these needs.
2. Government actions including the effective enforcement of legislation for women advancement should be strongly solicited for.
3. Raising the educational levels of rural women through the intensification of the already existing adult education and mass literacy programmes.
4. Raise awareness and increase knowledge of HIV/AIDS and achieve behaviour change through training of peer educators, focus group discussions, use of popular theatre, and other outreach programmes channeled through the workplace, religious groups, unions, age grades and other community based organizations.

## Implication for counseling

This paper presents a lot of challenges for the trained counselor. The challenges are however not insurmountable especially as people from both the literate and illiterate homes are in agreement that literacy is necessary for the women. A counselor who works with women from both literate and illiterate homes should try to concentrate on the positive aspects of providing HIV/AIDS education for the Nigerian girl right from the kindergarten to any level of education. The counselor can use group counseling approach effectively for the purpose of changing the negative stereotypes.

1. The counselor can also consult with parents, teachers, school staff and even the community to enlist their support in women education and literacy and HIV/AIDS awareness.
2. The counselor can use the forum of the Parents

Teachers Association (PTA) to interact with parents and their children on the need to give their children HIV/AIDS education.

3. Counselling workshops/seminars can be organized for women to increase their awareness on HIV/AIDS implications for school administration.
4. The school curriculum should be revised and HIV/AIDS information included in the school curriculum to increase students awareness about the disease.
5. HIV/AIDS should be taught as one of the school subjects.

## Implication for school administration

1. The curriculum should be revised to make it more relevant to the life styles of the school children.
2. Teaching techniques should foster girls' achievement and there should be pre-school and early intervention programmes for rural children.
3. School administrators should regularly invite trained personnel to speak to children about HIV/AIDS.
4. School libraries should have enough reading materials on HIV/AIDS.

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*Full Length Research Paper*

# Low knowledge of human immunodeficiency virus (HIV) service sites and implications for testing among Ugandans

Yovani A. M. Lubaale<sup>1,2</sup>, Proscovia M. Namuwenge<sup>3</sup>, Julian K. Bagyendera<sup>1</sup> and Jackson K. Mukonzo<sup>3,4</sup>

<sup>1</sup>Monitoring and Evaluation Agent Project, Civil Society Fund – Implemented by Chemonics International Inc., Kampala, Uganda.

<sup>2</sup>School of Statistics and Applied Economics, College of Business and Management Sciences, Makerere University, Kampala, Uganda.

<sup>3</sup>Centre for Operational Research in Africa, Kampala, Uganda.

<sup>4</sup>Department of Pharmacology and Therapeutics, College of Health Sciences, Makerere University, Kampala, Uganda.

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Despite the continued enormous financial investment, through both local and donor funding into human immunodeficiency virus (HIV) prevention and care services in Uganda, the prevalence and incidence rates are raising. Knowledge of HIV determines both uptake of HIV prevention services and behavioural change. We assessed knowledge of HIV service sites and testing benefits among Ugandans at community level. Adult participants (n = 5320) were randomly selected for the study. Participants were asked to mention the: (1) nearest facility providing HIV services and estimate its distance from their household and (2) benefits of HIV testing that they knew. Twelve percent had no knowledge of any HIV service site accessible to them, while only 4.4% knew at least 50% of eight benefits of HIV testing, 35% of those without any idea of the benefits of HIV testing did not know HIV service sources. Knowledge of HIV service sources was dependent on age, level of education and marital status with teenagers being least knowledgeable. Many Ugandans neither know the benefits of HIV testing nor the HIV service facilities available for them with teenagers (15 to 19 years olds) being least informed on where to seek HIV service. Specific methods of relaying HIV prevention messages to the teenagers are required in Uganda.

**Key words:** Knowledge, human immunodeficiency virus (HIV) service sites, HIV testing benefits, Uganda.

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## INTRODUCTION

The human immunodeficiency virus (HIV) epidemic remains a major global public health challenge, with a total of 33.3 million people living with the disease worldwide. Universal access to HIV treatment, prevention, care and support offers an opportunity to halt and reverse the spread of the disease hence the global drive for both expansion and extension of HIV services. Although

several international agencies are involved in the promotion and funding activities for universal access to HIV services, program implementation is especially done at individual national level. As a result, country to country differences occur in HIV services. Over the past one decade, significant progress to universal access has been made globally including several low- and middle-

income countries.

Uganda is one of the countries that achieved drastic reduction of HIV prevalence rates and as a result, it has been often held up as a model for Africa in the fight against HIV and acquired immunodeficiency syndrome (AIDS). Uganda's dramatic decline in HIV prevalence from 28% in the early 1990s to 5% in 2001 was one of the World's earliest AIDS prevention successes. Although Uganda's HIV prevalence rates plateaued for several years, raising trends in both prevalence and incidence have recently been reported (Kron, 2012). The initial success in Uganda's HIV prevention was attributed to sexual behavioural change (Green et al., 2006) and other strategies that targeted the at-risk-group (HIV negatives) (Kirungi et al., 2006). Recent studies however, have demonstrated the significant role of 'positive prevention' - targeting and supporting HIV-infected individuals to modify their behaviour to reduce the risk of future transmission. Effective positive prevention of HIV as well as key components of prevention methods targeting HIV negatives are facility based, requiring easy access to HIV services. Generally, knowledge is a major factor of access to any form of health care including HIV services (Kiwanka et al., 2008; Zhao, Kulane et al., 2009). We report the knowledge level of HIV service sites and testing benefits among Ugandans.

## METHODOLOGY

The study was conducted in five districts of Uganda namely; Adjumani, Kaberamaido, Hoima, Mubende and Mukono. Selection of participating districts was purposively done to ensure a geographical representation of findings. In each district, Lot quality assurance sampling (LQAS) method was used to identify clusters of the study area. LQAS is a stratified random sampling method which uses small sample sizes (Bhuiya et al., 2007). Its strengths are in its ability to "red flag" areas in either extremes, enabling collection of representative data with fewer samples (Jutand and Salamon, 2000). From the identified study area clusters, villages to be visited were randomly selected. Stratification of selected villages along the urban rural divide in a ratio of 1:1 was done to ensure equal representation. The sample for each village was disproportionately allocated between 3 categories. Twenty one (21) participating households were selected from each village. Local leaders were asked to help identify households on the list with youth aged 15 to 24 years that constituted the first 7 households to be specifically visited to conduct interviews with 15 to 24 year olds. The remaining households were divided into two to target both adult men and adult women. For households with more than one eligible persons, the Kish table of random numbers was used to select the participants (Kish, 1949), as a way of giving all eligible persons equal chances to participate in the study.

Participants were asked to mention the: (1) nearest facility providing HIV services and estimate its distance from their household and (2) benefits of HIV testing that they knew. On basis of the fact that in Uganda, HIV services are health facility based, facilities providing HIV services referred to in this paper are formal health care facilities (private or public) that provided the service. All participants who were able to name an HIV service site were categorized as being knowledgeable of the service sites irrespective of their ability to estimate distance. Participant knowledge of benefits of HIV testing was assessed against a

predetermined checklist of eight benefits including: to avoid HIV infection, get into HIV care, protect the unborn child, receive antiretroviral therapy, plan for the future, learn living positively, get food support and get material support as adapted from the UPHOLD LQAS survey report on Uganda (Mabirizi et al., 2004).

On the basis of the number of benefits mentioned, participants were categorised as knowing none, 1 to 3 and 4 to 8 benefits. Data was entered into MS access, cleaned before cross-tabulation for knowledge of HIV sites and demographic features including age, level of education and marital status. Stata statistical software version 11 was used for the analysis. To establish the relationship between knowledge of HIV testing benefits and HIV service sites, cross tabulation between the two measurements was done. The study was approved by the Research and Ethics Committee of Mildmay Uganda and by The Uganda National Council for Science and Technology.

## RESULTS

A total of 5320 Ugandans aged 15 to 54 years, 71% (n = 3772) of them women, participated in the survey. Overall 12.1% (n = 645) had no knowledge of an HIV service site. Knowledge of an HIV service was not dependent upon sex (p = 0.690) but rather on age, marital status and level of education (p < 0.001) (Table 1). Only 4.4% of all participants knew 4 or more benefits of HIV testing. Of those who knew less than 4 benefits of HIV testing, 12.2% (n = 618) and 87.8% (n = 4459) did not know a single benefit of HIV testing or knew 1 to 3 of the benefits, respectively. Upon cross tabulation for knowledge of benefits of HIV testing and knowledge of HIV service sites, we demonstrate that knowledge of HIV service sites is likely to increase with knowledge of the benefits of HIV testing. This was revealed by the increasing trends in the proportions of participants ignorant of HIV service sites from 4.9 to 9.4 and 34.9% among those who knew at least four, 1 to 3 and those who knew none of the of benefit HIV testing, respectively (Figure 1).

## DISCUSSION

Despite the continually increasing political and financial attention on AIDS, which is particularly targeted towards prevention and care programs, results of this study indicate that 12 in every 100 adult Ugandans do not have knowledge of an HIV service site accessible to them. Knowledge of availability of health care services is one of the measures of access to the same. Previous studies have reported a correlation between health care service utilization and knowledge (Zhao et al., 2009). This finding might therefore imply that while HIV services might be available for Ugandans, access and uptake may still be limited. Although the current study did not examine the possible effect of other known factors for access of HIV services such as affordability, availability and acceptability (McLaughlin and Wyszewianski, 2002), it is plausible to think that with their effects combined together,

**Table 1.** The proportions of adult Ugandans who do not have any idea of a location of HIV service provider by demographic characteristics.

Demographic characteristic	Number of respondents			p-value
	Total (N)	Without knowledge of HIV services site		
		Number (n)	Frequency (%age)	
All study participants	5320	645	12.12	-
<b>Sex</b>				
Male	1548	192	12.4	0.690
Female	3772	453	12	
<b>Age in years</b>				
15-19	1094	225	20.6	< 0.001
20-24	1335	163	12.2	
25-29	1013	87	8.6	
30-34	734	56	7.3	
35-39	529	41	7.8	
40-44	311	34	10.9	
45-49	223	28	12.6	
50-54	81	11	13.6	
<b>Level of education</b>				
None	538	99	18.4	< 0.001
Did not complete primary level	2583	328	12.7	
Primary level	1128	120	10.6	
Post primary level	1071	98	9.2	
<b>Marital status</b>				
Never married	1374	262	19.1	< 0.001
Married	2609	226	8.7	
Co-habiting	1051	123	11.7	
Separated/ Widowed/ Divorced	286	34	11.9	

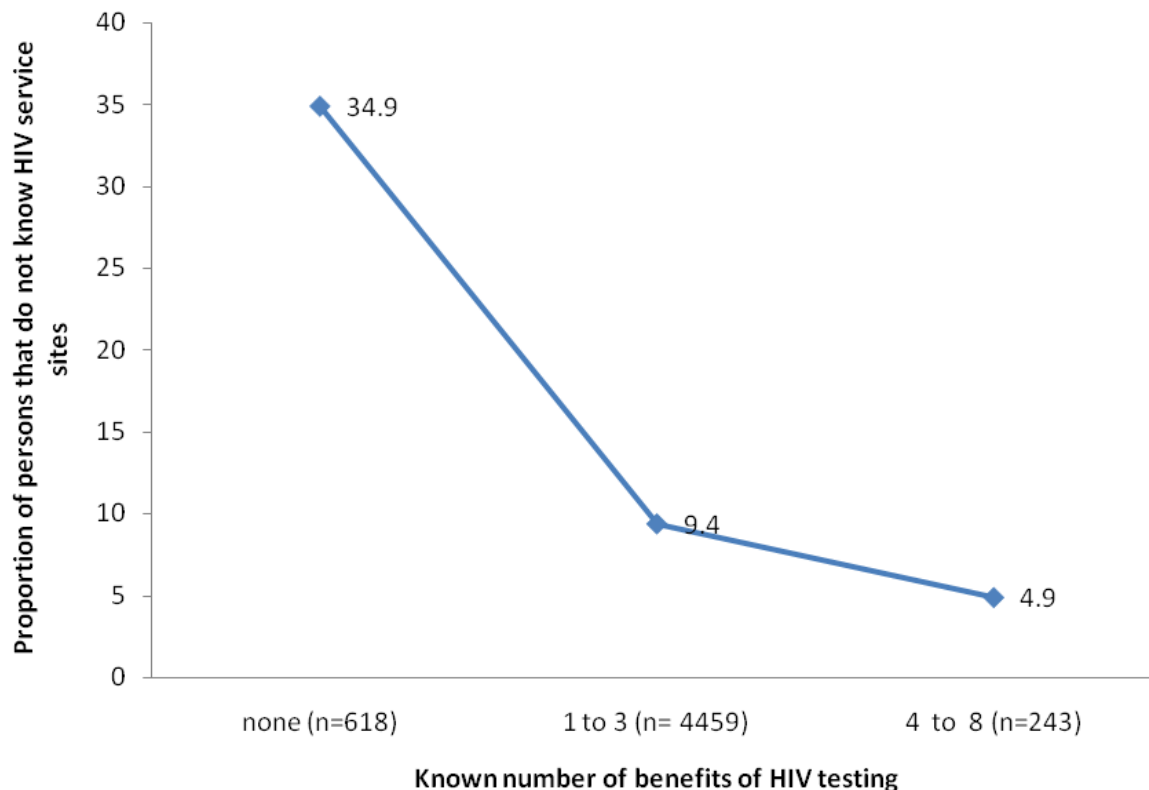
access to HIV services might be suboptimal. Notwithstanding, promotion of Provider Initiated Testing and Counselling (PITC) initiatives particularly through antenatal clinics, only 36% of Ugandans are aware of their HIV serostatus (Uganda AIDS Commission, 2012) an indication for the need to combine both provider and client initiated testing and counselling initiatives.

At programmatic level, Uganda draws her initial success in HIV prevention from her unique emphasis on HIV preventive messages to the public (Slutkin et al., 2006), a shift from which may probably explain the current rising trends in Uganda's HIV infection rate as reported by a previous survey. The survey indicated that HIV infection rates in Uganda have increased to 7.3% from 6.4% in 2005 and reports Uganda and Chad as the only two African countries, where AIDS rates are on the raise (Kron, 2012). The reported effect of age, level of education and marital status on knowledge of HIV service site in Uganda is in agreement with previous findings on community general HIV knowledge (Karau et al., 2010).

The 16.4 year sexual debut age for Ugandan women (Slaymaker et al., 2009), the finding of 16% of all mothers of children 0 to 11 months old being teens (Civil Society Fund, 2012) and the low HIV service site knowledge among 15 to 19 year olds reported by this study which is in agreement with previous findings (Uzochukwu et al., 2011), indicate the need for more effective means of HIV prevention and care messages among Ugandan teenagers. Conversely, the decreasing trend in knowledge of HIV service sites with age greater than 40 years observed in the current study is in agreement with a recent study which reported lower levels of HIV-related knowledge and awareness among Africans 50 and more years compared to 25 to 49 year olds (Negin et al., 2012). However, considering that most people remain sexually active far beyond this age range, the knowledge gap in this particular age group might undermine HIV prevention efforts.

About ten years back, being unaware of the benefits of HIV testing was reported as an impediment to uptake of





**Figure 1.** Association between knowledge of benefits of HIV testing and HIV service sites.

voluntary counselling and testing (VCT) in Uganda (Nuwaha et al., 2002). Persistence of lack of knowledge on HIV in Uganda might be attributed to the continued surge in national efforts to increase community awareness of HIV disease and its prevention. Notable is that people who are ignorant of the benefits of HIV testing also do not know the HIV service sites, a clear manifestation of an HIV knowledge shadow among some Ugandans. While a combination of preventive services to the most-at-risk (HIV negatives), positive prevention and Universal HIV testing and treatment (UTT) have been highlighted as promising strategies for ending the HIV epidemic (Bunnell et al., 2006; Granich et al., 2009), most constituents of the combination strategy such as HIV testing and counselling, prevention of mother to child transmission (PMTCT) and the provision of anti-retroviral therapy (ART) are facility based. Lack of general knowledge on HIV and services among communities in Uganda and similar settings is likely to undermine the high cost of would be effective interventions.

Indeed in agreement with Babalola et al. (2007) who reported an association between HIV knowledge and uptake of VCT services, even with increased VCT services in Uganda and the rest of sub-Saharan Africa, individual knowledge of HIV sero-status has remained low (27 to 50%) (Chirawu et al., 2010; Mugisha et al., 2010; Pettifor et al., 2010).

## CONCLUSIONS AND RECOMMENDATIONS

Many Ugandans neither know the benefits of HIV testing nor the HIV service facilities available for them with teenagers (15 to 19 year olds) being the least informed on where to seek HIV services. In addition, individuals who do not know the benefits of HIV testing are also unlikely to know where HIV services are found. There might be need for modification of the of national HIV prevention strategies either at policy or programmatic level to devise strategies to reach specific vulnerable sub-populations. Re-evaluation of the strategy to improve knowledge on HIV prevention and existing HIV services at community level with particular focus on Ugandans aged 15 to 19 years, and adult singles is necessary for effective control of the HIV epidemic in Uganda.

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*Full Length Research Paper*

## Association between types of coping strategies adopted following HIV seroconversion and disclosure of HIV status, between 2002 and 2009, Zimbabwe

Masuku-Sisimayi, T.<sup>1\*</sup>, Sisimayi, C. N.<sup>2</sup> and Babill-Stray Pedersen<sup>3</sup>

<sup>1</sup>Department of Community Medicine, College of Health Sciences, University of Zimbabwe, P. O. Box A178, Avondale, Harare, Zimbabwe.

<sup>2</sup>PSRT Centre, Island House, No. 6 Natal Road, Belgravia, Harare, Zimbabwe.

<sup>3</sup>University of Oslo, Institute of Clinical Medicine and Division of Women and Children, Rikshospitalet, Oslo University Hospital, N-0027 Oslo, Norway.

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People who were seronegative on their first human immunodeficiency virus (HIV) testing may react differently to being seropositive on subsequent testing (seroconversion) compared to those who were HIV seropositive at their first HIV testing. In both cases, disclosure of a positive HIV status to at least one other person is considered one of the most important factors for prevention of transmission of HIV. Whilst reactions of people towards a positive HIV test result are well documented, how HIV infected women cope with HIV seroconversion and whether they disclose their HIV serostatus following seroconversion or not is least known. This study assessed if types of coping strategies adopted following HIV seroconversion are associated with disclosure of HIV serostatus. There were no statistically significant associations between types of coping strategies adopted following HIV seroconversion and disclosure of HIV serostatus. We also noted that prevalence of non-disclosure was very high in the context of high disease burden. Our results suggest that there is a need to develop new and effective ways of encouraging disclosure of HIV serostatus among people who test HIV positive on subsequent testing. Results also present opportunities for further enquiry on factors that may be associated with disclosure of HIV serostatus to strengthen current efforts of containing the spread of HIV infection.

**Key words:** Disclosure, coping strategies, human immunodeficiency virus (HIV), seroconversion.

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### INTRODUCTION

The human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) epidemic is one of the leading causes of morbidity and mortality in Zimbabwe. In 2009, HIV prevalence was estimated at 13.7% in the adult population (15 to 49 years) (Ministry of Health and Child Welfare (MoHCW), 2009). There is an

estimated 1.1 million adults aged 15 and above, sixty percent (60%) of whom are women and 150,000 children under 15 living with HIV (Ministry of Health and Child Welfare (MoHCW), 2010). It is estimated that 220 persons become infected with HIV each day and average life expectancy has dropped in the past decades and is

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\*Corresponding author. E-mail: [thenjiwe.masuku@gmail.com](mailto:thenjiwe.masuku@gmail.com). Tel: +263 (0) 773 264 332/4.

currently at 50 years for males and 49 years for female (CIA World Fact Book. <https://www.cia.gov/library/publications/the-world-factbook/geos/zi.html>). Zimbabwe, like many other countries affected by HIV, has over the years continued to scale up HIV prevention, care and treatment programmes in an effort to combat the spread and effects of the disease. While there is no known cure for HIV infection, there is a general consensus among public health professionals that HIV and AIDS is preventable and manageable both in terms of its transmission and progression. HIV infection is currently managed through antiretroviral therapy (ART) and psychosocial support (PSS), which also encourages disclosure of HIV serostatus. Many people have come to understand that HIV infection is manageable, however in general a positive HIV diagnosis is often considered as a crisis by individuals, and is something that one has to cope with.

Reactions of people towards a positive HIV test result are well documented (Tilley, 1990b; Internet: [http://www.psych.wellbeing.HIV-AIDS-related stigma and discrimination. htm](http://www.psych.wellbeing.HIV-AIDS-related%20stigma%20and%20discrimination.htm) 05 January 2008). It is possible that people who test HIV negative on their first time to undergo HIV testing may react differently to a positive diagnosis on subsequent testing (seroconversion) compared to those who test positive for the first time. Unfortunately, how HIV infected women cope with HIV seroconversion and whether they disclose their HIV status following seroconversion or not is least known. This study sought to assess if there are any associations between types of coping strategies adopted following HIV seroconversion and disclosure of HIV serostatus.

## MATERIALS AND METHODS

This was a nested cross-sectional analytic study that enrolled 49 women HIV seroconverters from a major study known as Better health for the African Mother and Child (BHAMC)<sup>1</sup> study in Chitungwiza and Epworth, Zimbabwe. Participants were women who had undergone HIV testing in 2002/3 and initially tested HIV negative and then tested HIV positive on subsequent testing bet-

<sup>1</sup>The BHAMC Study was an 8 – year follow-up PMTCT collaborative study between the University of Oslo and University of Zimbabwe conducted in Epworth and Chitungwiza local clinics in Zimbabwe. The study's main objectives was to assess the effect of single dose (SD) nevirapine (NVP) given to pregnant women in labor within 72 h post delivery to the infant on cognitive and somatic growth of children. 1050 (479 were HIV positive, 571 HIV Negative) pregnant women in their third trimester were enrolled into the study and followed up to measure the purported results of the study. This study was cleared by the Medical Research Council of Zimbabwe.

ween 2002 and 2009. All the participants were purposively identified. Consenting participants were interviewed on their socio-demographic factors, current disclosure status of their HIV serostatus and their coping strategies. Two data collection tools were used, the disclosure questionnaire and the adapted brief COPE inventory<sup>6</sup>. The disclosure questionnaire was used to ascertain the disclosure status among the participants. It contained questions related to socio-demographic profiles of the participants (that is, participant's age, religion, number of children, marital status, employment status and level of education) and questions relating to their current disclosure status (that is, if it has been done, how long after the diagnosis was disclosure done, why (specific reason) disclosure was done and why it was done to the person(s) that were chosen. It also included questions relating to why disclosure has not been done and whether participants who had not disclosed considered disclosing their HIV serostatus in future.

The brief COPE inventory (Carver and Schiender, 1989) was used to measure participants' coping strategies. It is a multi-dimensional coping inventory that is used to assess the different ways in which people respond to stress. It consists of 28 items that make up 14 coping scales, which can then be used to determine the predominant coping strategy one uses. Adaptation of the tool was done to suit the local situation and involved eliminating 8 items which address four coping scales which measure coping responses that are considered to be less useful (Tilley, 1990b; Howard and Hong, 2002) in the classification of coping strategies. The adapted tool contained 20 items that made up 10 conceptual coping scales that is, five scales (of two items each) measured conceptually distinct aspects of problem focused coping strategy (active coping, planning, seeking instrumental social support, and restraint coping, suppression of competing activities); five scales measured aspects of emotion focused coping strategy (religion, positive reinterpretation and growth, seeking emotional support, acceptance and denial). Interviews lasted between 60 to 90 min. Prevalence of HIV status non-disclosure, types of coping strategies and their associations were assessed using Pearson's Chi-Square and logistic regression analysis. This study was cleared by the Joint Research Ethics Council of Zimbabwe (JREC) Ethical Committee and written informed consent was obtained from the participants before participating in this study.

## RESULTS

### Demographic characteristics

The participants' mean age was 33.7 with a standard deviation of 5.53. Their age range was 23 to 47 years. Most participants were married (65.3%), self-employed (53.1%), apostolic (79.6%), reached secondary level education (73.5%) and their mean number of children was 3 (Table 1).

### Participants' coping strategies

Out of the 49 participants, 27 (55.10%) were found to be predominantly emotion focused copers while 22 (44.90%) were found to be predominantly problem focused copers. Amongst those who were noted to be predominantly emotion focused copers, the coping scale "Denial" was

**Table 1.** Socio-demographic characteristics.

Variable	Frequency (N=49)	n(%)
<b>Age: mean (s.d)</b> 33.7, (5.53)	-	-
<b>Marital status (current)</b>		
Single	11	22.45
Married	32	65.31
Widowed	6	12.24
<b>Religion</b>		
Non- apostolic	10	20.4
Apostolic	39	79.6
<b>Employment status</b>		
Self employed	26	53.06
Formal employed	4	8.16
Unemployed	19	38.78
<b>Education</b>		
Primary level	13	26.53
Secondary level	36	73.47
<b>No. of children (mean) [3]</b>	-	-

observed to be least utilised (44.4%) relative to the other four scales that make up the emotion focused coping strategy (seeking emotional social support 85%, positive reinforcement and growth 85.2%, acceptance 81.5%, and religion 81.5%). Usage of problem focused coping scales among the participants who were noted to be predominantly problem focused copers was noted to be generally above 70% across all the coping scales that make up the problem focused coping strategy.

### Disclosure of HIV status

Participants were diagnosed with HIV between 6 weeks and 8 years after enrolment into the study population with most of them 28 (57.1%) having received their diagnosis between 2006 and 2009. The prevalence of non-disclosure of HIV status was observed to be 32.7%. The main reasons for non-disclosure were reported as fear of rejection (68.8%), persons to be disclosed were perceived to be not ready for this kind of information (18.8%) and that disclosure was not considered important (12.5%). Forty-three percent of the non-disclosing participants reported having no intention to disclose their HIV serostatus in the future, and 85.7% of these were emotion focused copers.

Many participants (45.5%) among those who disclosed their HIV serostatus reported that they disclosed their HIV

serostatus within 1 day following diagnosis. More than half (53.3%) of those who reported having disclosed within 24 hours were diagnosed between year 2002 and 2005. Disclosure of HIV serostatus was done to different people with the majority (54.5%) reporting having disclosed to husband/sexual partner, 27.3% disclosed to a family member from the family of origin who is female, and the 18.2% disclosed to a friend. Disclosure was done for various reasons which depended on to whom it was done to. Among those who disclosed to husband/sexual partners, the reasons varied from enquiring why they had infected them with HIV (38.9%), informing him that he is the cause of her HIV infection problem (22%), ensuring that he knows her HIV serostatus so that he may go and get tested (22%), avoiding being persuaded or coerced into having more children (11%) and introducing condom use in their sexual relationships (6%). Amongst those who disclosed to other persons other than sexual partners, the main reason reported was that they were seeking emotional support as these were perceived as people who could understand them quickly.

### Factors associated with disclosure of HIV serostatus

**Sociodemographic factors:** Using Pearson Chi-square, none of the sociodemographic factors included in this study were noted to be statistically significantly associated with disclosure of HIV serostatus (Table 2).

**Coping strategies:** To assess the association between types of coping strategies and disclosure of HIV status, participants were classified according to their coping strategies as well as their HIV disclosure status (Table 3). No statistically significant associations were observed between the types of coping strategies and disclosure of HIV status ( $p$ -value 0.181 > 0.05). An odds ratio (OR) of 2.33 with a 95% confidence interval (0.574303; 10.42509) was obtained indicating that disclosure of HIV status is equally likely between the two types of coping strategies. The proportion of those who did not disclose among the predominantly problem focused copers was observed to be 0.22 (0.05; 0.40) whilst that for the predominantly emotion focused was 0.41 (0.22; 0.59). The differences in these proportions were not statistically significantly different. Using the two sample test for equality of proportions, a  $p$ -value of 0.181 was obtained. In addition the 95% CI for these proportions were noted to overlap hence there was insufficient evidence to reject the null hypothesis. This means that non-disclosure of HIV status does not depend on one's type of coping strategy. Logistic regression analysis also indicated that none of the factors considered in this study were independently associated with disclosure of HIV status (Table 4)



**Table 2.** Socio-demographic factors associated with disclosure of HIV status.

Socio-demographic factor	Disclosure of HIV status		P-value*
	Disclosed (n=33) n(%)	Did not disclose (n=16) n (%)	
<b>Marital status</b>			
Single	7(63.6)	4(36.4)	0.704
Married	21(65.6)	11(34.5)	
Widowed	5(83.3)	1(16.7)	
<b>Religion</b>			
Apostolic	5(50.0)	5(50.0)	0.828
Non-apostolic	28(71.8)	11(28.2)	
<b>Employment status</b>			
Self employed	15(57.7)	11(42.3)	0.865
Formal employment	3(75.0)	1(25.0)	
Unemployed	15(79.0)	4(21.0)	
<b>Education</b>			
Primary	9(69.2)	4(30.8)	0.475
Secondary	24(66.7)	12(33.3)	
<b>No. of children</b>			
1 - 3	25(71.4)	10(28.6)	0.630
4 - 6	8(57.1)	6(42.9)	

\*p-values obtained using Pearson's Chi-square.

**Table 3.** Distribution of participants by coping strategies and disclosure status.

Disclosure status	Coping strategy		Total
	Emotion focused n(%)	Problem focused n(%)	
Disclosed	16(59.3)	17(77.3)	33
Did not disclose	11(40.7)	5(22.7)	16
Total	27(100)	22(100)	49
	$\chi^2 = 1.789$	p-value = 0.181	-

## DISCUSSION

Disclosure of HIV status was found to be not statistically significantly associated with types of coping strategies adopted following HIV seroconversion. This finding is not consistent with documented literature and common understanding that problem focused copers who in this case are expected to be more disclosing, adjust better in various ways in dealing with life challenges or stressors as they take action to alleviate challenging circumstances (Ralf and Christine, 1996). The number of participants who are predominantly emotion focused (27) was greater than that of participants who are predominantly problem

focused copers (22). However, the emotion focused coping scale "Denial" was observed to be less utilised among the participants who are predominantly emotion focused copers. This could be pointing to the fact that despite their preferred coping strategies, the women have accepted the reality of the existence of HIV and that there are other factors that may influence their coping strategies. Furthermore, no statistically significant associations were found between socio-demographic characteristics and disclosure of HIV status. Previous studies also found similar results (Maman and Medley, 2004; Kadowa and Nuwaha, 2009; Antelman et al., 2001; Gielen et al., 1997), perhaps suggesting that there are

**Table 4.** Factors independently associated with disclosure of HIV status.

Variable	Odds ratio	95% CI
Coping strategy	2.11	0.536; 8.336
Age	0.98	0.840;1.143
Religion	1.81	0.403; 8.201
Marital status	1.33	0.376; 4.751
Number of children	0.85	0.363; 2.021
Level of education	0.85	0.169; 4.300
Employment status	1.56	0.732; 3.336

other social factors that affect rates disclosure of HIV status.

There was no statistically significant evidence from this study to suggest that socio-demographic factors might be exclusively associated with types of coping strategies. Despite this however, socially meaningful results may be deduced. That more married women (56.2%) were noted to be emotion focused copers may imply that, as married women, they have their husbands to share their experiences with. In this particular instance, with regards to the patriarchal nature of marital relationships among the Shona people, the women may have had an opportunity to put all their concerns in the hands of their husbands and found comfort in it. The number of participants who were widows and being problem focused copers was higher than that of the same women who are emotion focused copers, suggesting that this group of women quickly realised the need to take responsibility as widowhood has strong bearings on the social support system. Generally, a widows often lack continued social support of the extended family following death of spouse and eventually become responsible for their own upkeep and that of their children. Among single women, the frequency of those who are emotion focused copers is higher than that of single women who are problem focused copers, a result that may point to their hopes of marriage in future. In our general society, although there may be some exceptions, single women look forward to marriage and a positive HIV status may be perceived as counter to such hopes, as this has negative implications on their general and reproductive health.

The prevalence of non-disclosure was observed to be 32.7% in this study and is considered a high rate in the context of high disease burden. With all the known antecedent benefits of disclosure, 32.7% women in this study decided not to disclose their HIV status, hence the need for further investigation to understand why some people choose to avoid disclosing their HIV status even when they know that there are more benefits if they did. This would provide insight into how disclosure rates may

be increased. Not surprisingly though, non-disclosure and no intention to disclose in the future was reported mostly among the emotion focused copers, suggesting that they may not consider or perceive disclosure of HIV status as an important way towards successful coping. If this is so, then psychologists, social workers, counsellors and public health practitioners have to consider ways of encouraging and showing the emotion focused copers why they should consider disclosing their HIV status as this is important for the mitigation and management of HIV infection.

The group of women who reported having not disclosed their HIV status and especially those who are not intending to disclose their HIV status in future is of particular concern. They are the group that may present greater challenges in the control of the spread of HIV infection. It is difficult to intervene as they are not willing to disclose which may also mean that they may not take precaution to protect others and even themselves from further re-infection. Thus, there is need to understand factors associated with disclosure of HIV positive status with the aim of suggesting measures for increasing the rates of disclosure among this kind of women who despite knowledge that disclosing has more benefits would still avoid doing so.

Findings on reasons for not disclosing HIV status such as fear of rejection are consistent with documented evidence from previous studies done on factors that affect rates of disclosure among women (Maman and Medley, 2004) across sub-Saharan Africa. Disclosure of HIV status to sex partners and others is less likely to occur when a person has witnessed and or perceives adverse outcomes.

Of particular concern in this study is the observation that disclosure, most of which was done to husband/sexual partner, was not necessarily meant to inform and protect the partners rather it was an enquiry and blame directed to the person suspected to have infected the women. At surface understanding, one would argue that at least disclosure would have been done anyway. However, there is a danger that the confrontational approach taken by the ones who are disclosing may affect the health seeking behaviour of those being accused, who may then choose to engage in a defensive mode and choose not to go for HIV testing on time to ascertain their own HIV status.

The current findings should however, be interpreted in the light of the sample size and methodological limitations of the study design used. The sample size may have not been large enough to detect the smallest differences. Further, the study used a dichotomous measure of disclosure of HIV status that does not entirely capture the complexity of the issues and circumstances of disclosure to sexual partners and other individuals. Future studies on disclosure of HIV status and coping strategies in

southern Africa should examine this broader range of factors including social class other personal and social factors, personality types, community perceptions and individual communication skills and belongingness which may be important in facilitating disclosure. Other areas that may require further investigation with the aims of increasing disclosure rates include investigating the health seeking behaviour of those who are disclosed to while being accused of having infected the persons who are disclosing their HIV status.

## CONCLUSION

There is no association between types of coping strategies adopted following HIV seroconversion and disclosure of HIV status among women participating in the BHAMC study. Further, disclosure of HIV status does not depend on socio-demographic characteristics. The prevalence of non-disclosure is high in the context of high disease burden. This could point to the need to develop new and effective ways of encouraging disclosure of HIV status among people who test HIV positive on subsequent testing. Strong intervention approaches need to be put in place to ensure the safety of women who want to safely disclose HIV serostatus to their sexual partners. Results also present opportunities for further enquiry on other factors that may be associated with disclosure of HIV status to strengthen current efforts of containing the spread of HIV infection.

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*Full Length Research Paper*

## Care for people living with HIV/AIDS: Whose responsibility?

Nurudeen Alliyu<sup>1\*</sup>, Olubukunola Jeminusi<sup>2</sup> and Peter O. Kalejaiye<sup>1</sup>

<sup>1</sup>Department of Sociology and Psychology, Olabisi Onabanjo University Ago-Iwoye, Nigeria.

<sup>2</sup>Department of Community Medicine and Primary Health Care, College of Medicine, Olabisi Onabanjo University Teaching Hospital, Nigeria.

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**The combination of factors affects the acceptance, care and support of people living with HIV/AIDS. These include knowledge and willingness of the people. The paper sought the knowledge of the rural populace of Ode-Lemo, a rural community in Sagamu local government, Nigeria. The local government area have benefited from awareness and campaign activities of Sagamu Community Centre (SCC), an NGO in the area with primary focus of managing and controlling the spread of HIV/AIDS. The level of awareness and the knowledge of the people about HIV/AIDS is very high. A majority of the respondents are of the opinion that the care and support of PLWA is first a community and collective issues.**

**Key words:** Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), Ode-Lemo, PLWA.

### INTRODUCTION

The first human immunodeficiency virus (HIV)-positive person in Nigeria, was identified in 1986. Ever since then, the number of people living with acquired immune deficiency syndrome (AIDS) has increased and 'HIV/AIDS has been one of the greatest health problems in the world' (Clayson et al., 2006). A little over a decade after the first discovery, the records of the National HIV/AIDS and sexually transmitted diseases (STDs) control program (NASCP) indicated that between two and three million Nigerians may have been infected with the AIDS virus (Orubuloye and Oguntimehin, 1999).

Going by diverse research works done on the issues of HIV/AIDS, most of which are pointing the ever-increasing rate of infections, it is therefore not unlikely that the impact on people infected or affected will also be grievous (Federal Ministry of Health (FMH), 1999). Such impact often manifest in the socio-economic life of the people infected and the people lack the capacity to live a normal life without deliberate intervention activities which restore their hope in life within the community they belong

and given the longevity achievable with current prophylactic and therapeutic strategies for persons with HIV infection, quality of life (QOL) has emerged as a significant medical outcome measure, and its enhancement has an important goal (Basavaraj et al., 2010).

The care of people living with HIV/AIDS (PLWA) is a herculean task that demands great attention from the careers of the infected people. The care takes time, energy, money and so on. What goes into the care of a PLWA is somehow frustrating because of the prolong nature of treatment and uncertainty that surround the outcome of the treatment exercise in the past. HIV/AIDS places an increasing burden on the health of the population, and causes further socioeconomic problems for individuals, families, communities, and governments in many countries (Fauci, 1999). However, existing data suggest that physical manifestations, antiretroviral therapy, psychological well-being, social support systems, coping strategies, spiritual well-being, and

psychiatric comorbidities are important predictors of QOL in this population. Consequently, the impact of HIV infection on the dimensions of QOL, including physical and emotional well-being, social support systems, and life roles, has emerged as a key issue for persons infected with HIV (Basavaraj et al., 2010). These and many other factors made the care of PLWA to involve many care givers and it has a very long waiting time that no one want to be part of. This notwithstanding, PLWA must be cared for in our society but who does this care has been a subject of concern for some time now because of the issue stigma, acceptance of the PLWA and unwelcome attitude of health care providers.

The aim of this study therefore was to find out among the social categories in a family/community setting who actually cared and PLWA in order to develop a robust care mechanism that will reduce the impact of the disease on those infected and affected. The discussion is divided into two parts: One dealt with the general knowledge of the respondents on HIV aids and the other focused on the care and support mechanisms.

## METHODOLOGY

Ode-Lemo, a rural community was used for this study among the wards in Sagamu local government area of Ogun State, Nigeria. The local government area has within it a Non-Government Organisation namely Sagamu Community Centre (SCC) whose part of its primary objective is the care of PLWAS, awareness creation on HIV/AIDS and its management. The local government has benefited tremendously from the activities of SCC in the last one decade or more especially at the urban centers. The choice Ode-Lemo therefore is purposive and it offers an opportunity to measure the impact of the previous awareness programmes of the centre among the rural populace. Though the rural populace had benefited from the various intervention programmes of Sagamu Community Center (SCC) on HIV/AIDS and PLWAs, impact had never been measured regularly as the urban areas; hence the need to determine this so as to know areas of further improvement.

The sample population for the study was arrived at through some basic scientific procedure. First, for the quantitative purpose, all the houses in the ward were numbered. There are 254 houses in Ode-Lemo. For the purpose of systematic random sampling, a class interval of one (1) was agreed on for the sample. This gave us about 125 houses for the sample. Four respondents were interviewed within each house selected namely: Adult (male; female), Youth (male; female). In all, we had a total of 270 respondents. These figures accounted for the out of school respondents. In other words, the youth-in school gave additional figures of 94 respondents. The figures were arrived at through a simple random sampling of senior secondary students (SSS) at the two secondary schools at Ode-Lemo and the only secondary school at Simawa.

Second, is qualitative. A total of 4 semi structured interview (SSI), 12 focus group discussion (FGD) and 1 key informant interview (KII) were conducted in the ward and SCC. Sagamu Community Centre (SCC) was included in the location to prevent stigmatization of the people living with AIDS who consented to participate in the study. SSC staff conducted the interviews with the PLWAs.

## Data analysis

Apart from the on the spot-analysis done on the field and daily

evaluation or debriefing of the day's field work, final stage analysis was done at 2 levels namely quantitative and qualitative. The questionnaires were properly scored, sorted, edited, coded and analysed using both excel and statistical package for social sciences (SPSS). The transcripts from the qualitative data were retrieved from the tape recorders and typed. Finally, the emerging themes from the data form the main topics around which the findings were written.

## RESULTS AND DISCUSSION

### Knowledge of the respondents about awareness of HIV/AIDS

The knowledge of the majority of people about sexually transmitted diseases (STDs), with particular reference to HIV/AIDS in our study area is increasing (Table 1). This is due to a lot of factors such as awareness programmes institutionalized by various government and non-government agencies in the recent past. Many Nigerians in both the rural and urban centers have been so informed and educated about HIV/AIDS and other STDs. This might have contributed to the present level of awareness displayed by the respondents in this study. Among the adults, about (91%) have heard about AIDS. Slightly more males (93%) than females (87%) have heard about the disease. On the part of the youths, only (75%) of the youth in school have heard about AIDS. This is less compared to the total of about (89%) of youth-out-of school that are aware of AIDS.

The high level of awareness recorded by the adults and the youth out of school in the study could be as a result of greater opportunity and access to Sagamu - the Local Government Headquarters, where lots of information, education and communication (IEC) materials are available at various health and other outlets. The youth in school may not have the same opportunity due to their present status as students resident in Ode-Lemo who seldomly travel out of the rural area. One would have thought that the teachers would have been a source of information to the youth in school. This may not be correct as there was a case of one of the secondary school used for the study where the female head teacher out-rightly argued that AIDS is not realistic. Her reason:

*"I have not seen one AIDS patient since they have been shouting about the diseases".*

If the teachers are unaware, the students are mostly likely to be unaware as well. In a situation where parents hardly discuss sex related issues at home, the youths are yet most likely to be unaware of vital issues bordering on their health.

Besides the level of awareness of HIV/AIDS, the knowledge of the respondents was also sought in other areas such as causes of HIV/AIDS, its modes of transmission, mode of prevention, means of diagnosis and curability, and means of identifying people living with

**Table 1.** General knowledge about HIV/AIDS.

Knowledge of respondents on:	Groups (%)		
	Adults	Youth in school	Youth out of school
Awareness	91	75	89
Exact causal factors	47	38	39
<b>Mode of transmission</b>			
Sexual Intercourse	88	75	99
Mother-to-Child	77	-	79
<b>Mode of HIV prevention</b>			
Not having sex with infected person	76	76	84
Use of condom	71	75	78
Avoiding HIV Infected blood for transfusion	7	69	81
Avoiding Sharing/use of sharp objects	73	85	81
Decision not to get pregnant when infected	49	50	74
<b>How HIV/AIDS is not prevented</b>			
Refusing to touch those having HIV/AIDS	51	52	68
Refusing to wash cloths and culteries used by infected person	50	39	60
Refusing to eat with same plate used by infected persons.	35	42	50
Not staying in the same room as HIV infected persons.	48	51	58

AIDS. These questions were asked because the understanding of respondents on basic issues about HIV/AIDS will impact on how they accept, care and support PLWA in the community. The response to these questions will shed more light on the main subject of care which is the focus of this paper. It will show why they care or not for PLWA.

#### **Knowledge of the respondents about cause of HIV/AIDS**

On the cause of HIV/AIDS, 47% of the adults knew that HIV causes AIDS; about 37% did not know what causes it. Lack of this knowledge was worse for females. The knowledge of the youth (both in and out of school) on the cause of AIDS is almost equal, as about 38% youth in school and 39% of youth out of school knew the cause of AIDS. Both are still lower than the percentage of adults that knew the cause of the disease. The percentage of the youth who did not know the exact cause of AIDS is higher than the adults as 45% of the youth in school and 50% of youth out of school are ignorant of the cause of AIDS.

#### **Knowledge of the respondents about the mode of transmission of HIV/AIDS**

The cause of AIDS notwithstanding, the three categories of respondents above that is, the adults, the youth in and out of school demonstrated a high level of awareness on

the mode of HIV transmission. About 88% of the adult agreed that HIV could be transmitted through sexual intercourse and 77% mentioned mother-to-child as another mode of transmission. The youth in school (75%) were also aware of sexual intercourse as mode of transmission while about (99%) of the youth out of school mentioned sexual intercourse as a mode of transmission followed by mother-to-child (79%). The groups are also aware of several other means HIV could not be transmitted. These include: Air, water, food, clothing, and insect bite, shaking of hands/hugging or touching. The proportion of the respondents aware and knowledgeable about the mode of HIV prevention is equally very high across the group as presented below. The respondent have knowledge about ways HIV could not be prevented. This is very crucial for this study because it is around this knowledge that the issue of care and support hinges on. In serial number 5 in Table 1, you can find the proportion of respondents who know about how HIV/AIDS is not prevented. What is common across the groups is the fact that the proportion of the respondents that know that HIV is not prevented by the ways mentioned is far below the proportion that knows how HIV/AIDS could be prevented.

#### **Care and support of PLWA**

Care and support of PLWA cannot occur in vacuum. In other words, the PLWA deserving acceptance, care and support must be known by the people. The respondents were asked in this regard, if they know anyone that has



AIDS, dead or alive, how they got to know them and what is the relationship between them and the PLWA. Among the adults, 37% knew at least one person with HIV infection. Most of the PLWA known by the adult respondents (about 60%) lived outside the community. About 67% of the adult respondents got to know about PLWA through someone who told them. Only in 8% of cases did the PLWA directly inform respondents about their HIV (positive) status. In most cases, 65% known PLWA were not relations of respondents, except for 10% of the respondents. The experience of the youth is so different from the adult in this context. At least 45% the youth in and out of school knew one person with HIV infection, most of who lived outside their community. They got to know the PLWA through information from someone else, and the PLWA were in no way related to the respondents.

### **Attitudes of the respondents about HIV/AIDS and PLWA**

The attitude of the respondents first about HIV/AIDS and second about or towards people living with AIDS was investigated through both quantitative and qualitative instruments. This was done because the attitude of the people has lot to do about acceptance, care and support for PLWAs. Among the adults, 49% agreed that AIDS patients deserve to be cared for. For the youths in schools, only about 42% agreed that AIDS patients deserve care while about 57% of the youth out of school agreed that care should be given to AIDS patient. In all, it is evident that the people were supportive of care for PLWA irrespective of their social category or gender. In specific terms however, the groups indicated who should give care to the PLWA. The community was ranked highest of those to care for PLWAs, with an average of 77%. This is followed by the willing individuals within the community with 76.5%. The health workers ranked third (46%) and the family the fourth (37.5%) and the last. This showed that respondents see the problem of PLWA as a community one that need the contribution all to redeem.

### **Perception of acceptance**

Besides the different levels of care, the respondents identified as necessary for PLWAs in the community through the quantitative instruments, we investigated further, through the qualitative instruments, what acceptance means to the people and indeed acceptance of PLWA. The general consensus about acceptance centres on some attributes include:

- (a) Good behaviour/character/attitude.
- (b) Usefulness.
- (c) Good appearance/dressing.

The attitudes identified above as a condition for acceptance in this community fits into what Shoremi (1985) described as "Omoluwabi". For him, "Omoluwabi in Yoruba land is an epitome of good character in all its ramifications". This may include the dressing/appearance, the behaviour and contribution of the individual to the community. However, for the PLWA, acceptance would mean providing for him/her in all its ramifications. Such provisions will include food, clothing, bathing, visits, counselling and prayers, cleaning the environment and drugs (in some cases). What is apparent in the feelings of the respondents on the acceptance of PLWA is that since taking care of a PLWA is almost a herculean task, the extent to which such a PLWA was an "Omoluwabi" before the infection may influence the degree of acceptance he/she will get and subsequently the care and support.

*"Acceptance is in different ways, you know there are some people who come home to take-care of the family and relations. If such a person now contact AIDS, the family and relations would be ready to accept him/her but some others will have money and would not care for the family and relations, if such a person contacts AIDS, the people will say since he has money he should take himself to the hospital for treatment and the family would not accept him".*

Apart from the general conditions for acceptance of PLWA, each groups opinion on what constitutes acceptance was also documented.

### **Adult male**

For the adult male, the only 'cure' for AIDS is 'Mado' that is, "do not have sex" meaning abstinence. However, if any have been infected, such a person would need additional 'care'. This is captured in the following statement:

*"Since we know that this disease is in her body, we would have to be good to such person, we would give him/her some spiritual and emotional words of encouragement/counselling. We would eat together, play together, drink together and lots of things like that, all these are for the person not to loose hope before the time (of death)".*

Acceptance to this group will be demonstrated by paying physical, emotional and spiritual attention to a PLWA. This may include visitation, care and sharing of food, words of encourage, money and many other needs. The group however recognized the fact that what so ever is done to show acceptance is a matter of emphasizing the 'importance of living' and 'pushing ahead the dieing days'. For them, a positive person could actually live a positive life through the nature of acceptance accorded

the PLWA.

### Male youth

The male youths did not agree on acceptance of PLWA. While some claim that since it is not a contagious disease they should be accepted as normal and do all interactions with them. Others felt the PLWA should be separated but must be cared for through provision of food and drugs. The group agreed that care should be given but the area of difference is whether there should be social distance or not. A part of the youth felt that:

*“Anybody discovered to have the disease should be kept in certain place different from others and care should be given to them, in the areas of drugs and food”.*

Another part however again that:

*“If a person is infected with HIV/AIDS we would think of how to take care of the person. Then we make sure the person goes to the hospital for normal treatment, then we would contribute money for such a person to feed with. We would advise him/her so that she/he would not feel neglected among the family”.*

### Female adult

The opinions of the female adult on what constitute acceptance is similar to both the male adult and male youth respondents. Acceptance of a PLWA means that they should be shown love and care-by preparing the persons food, fetching water for the person. When going to church, they should be invited because God is a miracle God and God can rescue such a persons life. Some others however rejected the whole idea of acceptance claiming they do not have such cases in their community. However if anybody must accept them it is the government that should accept them- “because people would not want to be infected with this disease, it is only government that can help them”.

### Female youth

The female youth expressed same feeling on acceptance of PLWA. They are however careful in how acceptance should be demonstrated to a PLWA particularly when there is no cure for the disease now. For them, provision of accommodation will mean acceptance but such should be in the hospital where the disease could not be spread within the community. Acceptance will also mean giving of drugs to them in the hospital. Some of the respondents were even more forceful when they argued that:

*“The person who has AIDS, after being tested in the hos-*

*pital such person should be detained in the hospital so that the disease would not be transferred to us at home. One is not saying they should be killed but the person should be detained in the hospital till his/her death”.*

The general consensus is that acceptance is a necessary condition for care and support of PLWA. It must however be done with all precautions that it requires to prevent any further spread within the people.

### Hospital based providers

The hospital based care providers (HBCP) describe acceptance as receiving the PLWA into the hospital and providing comfortable services. To them, acceptance is a must because “anybody that is sick and comes to the hospital needs treatment”. Definitely, we must accept them and care for them too”. They felt that not accepting the PLWA will make them feel unwanted and this may affect their psyche as well.

### Gender and acceptance of PLWA

There was a general consensus among all the categories of respondents that male and female PLWA should be accorded same and equal treatment. The sex should not determine difference in treatment so far they are patients with a common problem. However, female PLWA are more likely to be rejected or sent away by their husbands. Such cases have been attended to in the past through the PLWA support group within the Sagamu Community Centre (SCC) to reduce the additional burden on the part of such female PLWA. In fact, social support for patients with HIV/AIDS has shown a strong potential to influence quality of life especially when their emotional, tangible, and informational needs are met (Hays et al., 1992). In deed, there have been cases of contributions made to secure accommodation for such affected female PLWA as one PLWA in the support group observed.

### Difference in acceptance from other diseases

There is consensus among all the respondents that there is a wide difference between acceptance of PLWA and patients of other diseases. Their reasons include the fact that “other diseases have drugs but HIV does not have”. Other diseases may come and go definitely but HIV would not, it will rather lead to death”. For example whooping cough patient could still be accepted than those living with AIDS because it has curable medicine but AIDS does not have. The fear of the spread, in the first instance, and the ultimate end that occur to AIDS patients are identified as major reasons by all the groups as factors determining the difference in acceptance of PLWA and other patients suffering from curable diseases.

## Perception of rejection

The general view of the respondents on rejection was also anchored on the concept of "Omoluwabi". They were unanimous in anchoring rejection on a popular adage "owo ti omo bayo ni a o fi gbe" meaning "the manner of approach determines the manner of response". One of the respondents buttresses the point when he said:

*"If a person behaves well and lives well within the community, there will be no problem of acceptance. But if other wise, then, rejection is the answer".*

The rejection of PLWA was more pronounced among the female youth than other groups. The female youth felt that PLWA should not only be detained in the hospitals some even felt that they should be injected to die. Their fears centred around possible infection of others and the stigma on the community as a whole. One of them noted that:

*"If tested and confirmed of AIDS, I would advice that the person should be detained and drugged to death so that the person would not come and implicate us at home (community)".*

Despite the extreme perception of rejection exhibited by the female youth, not all the groups suggested outright withdrawal of assistance for the PLWA. Even some of the female youth still show some degree of acceptance of PLWA. The hospital health care providers felt that it is unethical to reject a patient. What they do is to refer the PLWAS to the appropriate centres such as Olabisi Onabanjo University Teaching Hospital or Sagamu Community Centre for attention.

*"Apart from that, when we see them among us (that is, within the community), the initial thing we do is to let those who are elderly in the family know the health condition of the person. He or she will know how to encourage the person and really take care of him/her.*

Generally, however rejection of PLWA will mean:

1. Keeping them in a separate room in the house.
2. Not sharing household utilities with them.
3. Not sitting or discussing with them.
4. Avoiding all manner contact with the person.
5. Reacting negatively to them within the family and community.
6. Not touching them.

The extreme or harsh indicators of rejection exhibited particularly by the female youth are an indication of having not seen a full-blown AIDS patient by many of the respondents. Many still believe in the community that it is a disease affecting "them" and not "us" or "Me". This shows prominently in their discussions as a respondent prayed *"may we not see it in Jesus name"*.

## Perception of PLWA

Since the twin issues of acceptance and care directly affects the PLWA, their views were also sought on the issue. The general feeling expressed by the PLWA was that 'we are really accepted and we have been cared for very well' one of them commented further that:

*"People have been kind and nice particularly at the centre (SCC) they do care and support us they give us free drugs at the end of each month and even advise us and give us money for transportation".*

Beyond the care and support received at Sagamu Community Centre (SCC), family members of PLWA are also beginning to show some degree of acceptance as it was noted by a PLWA:

*"When I visited Dr. Martins at Sabo, he told me that I had HIV and even called my children and he told them and they were afraid, because of their fear, I went for another test to reconfirm and it was true, that I have HIV, so when it happened like that, I now told those taking care of me and since then they have accepted me and I have been praising my God. I have been very grateful to them. They are next to God in my own view".*

Even the scope of acceptance seems to have extended to the work place as a PLWA declared that:

*"My co-workers have been so helpful and loving. We do eat together, play together even if I want to do anything they would assist me".*

The degree of acceptance and care enjoyed by the PLWA in this case must have been as a result of proper pre-and post-counselling offered by the health care providers both to the PLWA and the family members. The degree of acceptance of PLWA may however vary from place to place depending on how close the people are to the PLWA apart from the issue of proper counselling. What could be deduced between perception of the PLWA, on this issues of acceptance and care, and those of the respondents is that the respondents were merely providing theoretical answers about *"what they would do"* while the PLWA demonstrated their real experience about acceptance and care in the family and the health facilities visited. It is not unlikely that when/if a family member of the respondents is infected, their views on acceptance may change gradually.

## Implications of HIV/AIDS for family and community

The socio-economic implication of providing care for PLWA mentioned by the categories of respondents are shown in Table 2. Generally, both male and female

**Table 2.** Socio-economic implication of providing care for PLWA.

Men	Women
Reduction in farming activities or a abandonment in extreme cases	Reduction in trading activities
Reduction in supply of food items in the family	Additional burden of care for the sick and the well members of the family
Waste of money on the sick	A PLWA may be avoided by people if they sell things in the community
Money meant for community development will be diverted to take care of PLWA	Gari production will be affected and the money to realize. This may lead to poverty
It is a thing of shame for the family and community	Loss of economic and valuable time attending to the sick
It depicts the family member financial resources when they contribute for the PLWA.	Abandonment of school
Too much money spent on PLWA may even lead to misunderstanding within the family. This may lead to family disorganization and extreme cases divorce or separation	It may hinder the opportunity of marriage for members of the family
-	When many people are infected it will affect market activities in the community. Buying and selling will be difficult

respondents emphasize the effect on material resource. The female however went further to identify the effect on future plans such as marriage prospects of their children.

**Suggestions to improve quality of care and support for PLWA**

The various groups gave suggestions on how quality of care and support for PLWA can be improved. The suggestions include the following:

1. Many of the groups suggested that both the family and the community should contribute money to assist the PLWA financially.
2. The children of the PLWA should be supported since their PLWA parent(s) may not be able to finance their livelihood.
3. Apart from giving financial assistance, some other groups suggested that the PLWA should be monitored by the family members in the use of their drugs.
4. The family and the community should create friendly environment for the PLWA. Unnecessary social distance must be avoided so as not to discourage them.

5. More than eight groups suggested that the PLWA should be helped in changing their cloth, washing and feeding them.
6. All the groups are aware that there are no drugs that could cure AIDS now. They however stressed that PLWA should still be taken to hospital for treatment. This is the family responsibility.
7. It was suggested by some other groups that if the community must show care to PLWA then, they should find the drug that will cure the disease permanently.
8. Others suggested that the government should demonstrate care/support PLWA by collaborating with foreign countries to produce drugs that will cure the diseases.
9. While the search for the drugs for AIDS is on at both community and government levels, some suggested that government should give money to the PLWA to do small-scale business in the community.
10. Prayers in religion homes and counselling were suggested, as some believe that there is nothing God cannot do. 'Spirituality is an important contributor to feelings of well-being. Spirituality among HIV-infected individuals was perceived as a bridge between hopelessness and

- meaningfulness in life' (Fleishman et al., 2000).
11. The rich people should be asked to donate towards the care and support of PLWA.
  12. PLWA should be given adequate information on where they could get all forms of care they need. "If they know where they could be spoken to that they can still live a normal life and, they are well encouraged in such gathering they would feel and have sense of belonging".
  13. A PLWA suggested that anything people have in care should be given to them. Specifically however:

*"They can give us money to assist us in trading, may be if we too can start trading some outstanding obligations would be met. I could remember some of us, their husband died and all the burden fell on them. So, if the government can give us money to start business it would be better.*

**CONCLUSION**

The care and support of PLWA in a community is a function of acceptance of the PLWA and acceptance itself depends on the knowledge of the people that is, both theoretical and practical

experience and the lifestyle of the PLWA before infection. In essence, a combination of factors interacts to influence whether a PLWA will be accepted and cared for in a community. Once a PLWA is accepted and not stigmatized or rejected, the responsibility of care becomes a collective issue typical of any African setting. The family, community and the government have roles to play toward the survival of a PLWA, prevention of the disease and finding final cure for the disease.

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*Full Length Research Paper*

# American college students and HIV/AIDS knowledgeability and sexual behavior change

Tuntufye S. Mwamwenda

Nelson Mandela Metropolitan University, 50 Holzner Road, Pinetown 3610, South Africa.

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**This study aimed at investigating the extent to which US College students know about human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) transmission, infection and prevention, and the transfer of such knowledge to sexual behavior change. The findings showed that college students' knowledge about HIV/AIDS was very good, and that such knowledge was transferable to real life experience, in their interaction with members of the opposite sex. The investigation was based on 58 college students drawn from a private college in New York City. The method of data analysis was quantitative, consisting of frequencies, percentage and chi-square. The implication of the study was that public education on HIV/AIDS is fruitful, and that at the same time, there is need for its continuation, as there are still misconceptions about HIV/AIDS regarding its transmission, infection and prevention.**

**Key words:** College students, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) transmission, HIV/AIDS prevention, knowledge of HIV/AIDS, HIV/AIDS denial.

## INTRODUCTION

In the past two decades, many American researchers have extensively carried out research investigations to establish whether the threat of Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) would lead college students to avoid engaging in behaviour that is associated with HIV/AIDS infection (Adefuye et al., 2009; Davis et al., 2007; Khostrovani et al., 2011; Rose, 2008; Sutton et al., 2011). While some studies have shown change in sexual behaviour practices, others have not shown a correlation between increased knowledge of HIV/AIDS and transfer of such knowledge to safe sex.

There are many American adolescents aged 15 to 19 years who engage in sexual behaviour without the use of preventive/contraceptive means such as condoms. Consequently, infection has increased among adolescents (Summerfield, 1990). According to Szekeres (2000), American adolescents constitute the largest

HIV/AIDS invisible population. Many of the adolescents infected are not aware of their HIV status as a result of not having been tested for HIV/AIDS. In the case of those who have undergone testing, they do not receive the necessary treatment for lack or shortage of money, or simply refusing to believe that indeed they are HIV positive.

According to a comprehensive report from the University of California, many adolescents engage in sexual behaviour without the use of condoms. Consequently, the sexually transmitted rate of infections among adolescents is one of the highest in the population. According to the Centres for Disease and Prevention and the American College Health Associations, it is reported that for every 500 American college students, one student is HIV positive (Adefuye et al., 2009; California University, 2011)

Sutton et al. (2011) surveyed the knowledge of college



students regarding HIV/AIDS for the purposes of facilitating efforts towards HIV prevention, for which 1,230 participants responded to a questionnaire presented online. From this, 82% scored average to high scores on their knowledge of HIV. Of these, 79% considered themselves as being at low HIV risk infection; 64% had two or more partners and used condoms the last time they had sex. It was concluded that there was need for educating students regarding assessing sex partners' risk which would improve HIV knowledge and prevention. Despite their knowledge of HIV/AIDS, they did not know their personal risk of acquiring HIV/AIDS and there was no behavior change in sexual behaviour practices (Adefuye et al., 2009).

According to Adefuye et al. (2009), college environment appears to be conducive to HIV high risk behaviour, unsafe sex and multiple sex partners. HIV infection has been on the decline, though such decline among young people has not declined proportionately among the young population. Their study examined sexual behaviours, and perception of HIV increases among College students for a sample of 390 sexually experienced students. The results showed that older students were less likely to use condom; younger students below the age of 30 reported inconsistent use of condoms. Perception of HIV risk was rather poor: 54% aged 30 or older, 48.1% below 30, and 57% for those below 20 years. Many of the participants did not think they were likely to contract HIV/AIDS. The authors concluded that there is a need for targeted HIV prevention and intervention for college students.

Opt et al. (2010) examined college students' knowledge and perception of HIV/AIDS and their sexual practices. It was observed that students were knowledgeable about HIV and the risk involved. However, they were not that concerned about becoming infected, thus confirming a lack of transfer of knowledge.

In their study of college students and HIV/AIDS, Mongkuo et al. (2010) reported that college students were knowledgeable about HIV/AIDS and its transmission, and also had understanding of the risk behaviour associated with HIV/AIDS; prevention and willing to associate with those who were HIV positive and had keen interest in HIV/AIDS education. Such factors served as predictors of students practising safe sex. The sample was based on 300 students aged 15 to 25 years. Similarly, Rose (2008) studied a sample of 222 participants with a mean age of 18 years. Most students were knowledgeable about HIV prevention and transmission. Their knowledge was based on their indicating that they would use a condom if they were to engage in sexual activity in future, should they engage in sexual intercourse. On the other hand, their high level of HIV knowledge did not have a bearing on their engaging in risky sexual behaviors.

Khostrovani et al. (2011) asserted the view that the literature shows that a high knowledge of HIV/AIDS was not sufficient to prevent students from engaging in high risk sexual behaviour; It is therefore argued that the

media has an important role to play in the dissemination of knowledge on HIV/AIDS, which leads to people avoiding high risk sexual activity.

A sample of 331 college students was used. The results showed that students were knowledgeable about HIV/AIDS. However, their knowledge was not sufficiently accompanied by avoidance of high risk sexual behavior. There were 77% who were sexually active and of these, 55% used condom for safe sex, whereas 37% neither protected themselves nor their partners. In view of this, Khostrovani et al. (2011) underscored that there is need for media and other institutions in society to play a significant role in the control of HIV/AIDS transmission.

Davis et al. (2007) advanced the argument that there is a decline of HIV infection in the USA, though such decline does not match the population of those below the age of 25 years. College students are particularly vulnerable to HIV infection as a result of a number of factors such as the influence of drugs and alcohol. Yet this does not seem to bother college students engaging in high risk sexual behaviour. Their investigation aimed at demonstrating whether HIV/AIDS knowledge, attitudes and vulnerability could be used as predictors of engaging in safer sex behaviors.

In a random sample of 650 college students, Inungu et al. (2009) examined their knowledge and attitudes towards HIV/AIDS. Those who claimed to be familiar with HIV/AIDS were 77.3%. It is nevertheless argued that, while college students have a good knowledge of HIV/AIDS, there is still a lot of misconceptions regarding HIV/AIDS. This therefore underscores the need for more public education about HIV/AIDS among college students. Participants conceded that they were engaged in sexual intercourse with multiple partners, and that either they did not use condoms, or they were used twelve months prior to the survey being carried out (Unungu et al., 2009). Moreover, they did not believe that they were at high HIV risk, though they were engaged in multiple relationships. A large number of respondents did not see the need for being tested, implying that in the event they were unknowingly HIV positive, they would be infecting others. This therefore calls for educating and promoting HIV/AIDS testing of college students.

It was therefore noted that there is a co-existence of misconception regarding the transmission of HIV/AIDS and the denial of participants contracting HIV. This therefore, calls for proactive approach to resolve such challenges among college students.

## METHODOLOGY

### Sample

The sample of this study comprised 58 participants drawn from one of the private colleges in Manhattan, New York City. The participants were registered in a Psychology course taught by the researcher. There were both male and female participants who answered the questionnaire.

### Procedure

Inasmuch as the researcher was responsible for teaching the course they were registered for, there was no need to seek permission to administer the questionnaire to students. Consent was sought from the participants who were advised that participation in the exercise was voluntary, and that those who wanted to participate were free to do so. They all volunteered to participate in answering the questionnaire. This they were able to complete in twenty minutes, and the researcher collected them. For the purpose of confidentiality, participants were advised not to write their names or the name of the College.

### Measuring Instrument

A questionnaire of 25 statements and questions was used to measure their knowledge of HIV/AIDS dealing with its transmission, infection and prevention. Only 19 questions and statements were considered for scoring and statistical analysis. Such decision was informed by the fact that the six left out were rather ambiguous and therefore unfit for statistical analysis purposes. For each statement/question, there were three possible responses which participants were to tick, if in their view they were most descriptive of their knowledge regarding HIV/AIDS. The answers were "Yes, No, Did not know".

## RESULTS

For analysis descriptive statistics: frequencies, percentage and chi-square were used as displayed in Table 1. The objective of the investigation was to determine the extent to which participants were knowledgeable about HIV/AIDS, as well as such knowledge having learning transfer in relationship with members of the opposite sex. From Table 1, there is ample evidence that indeed the participants' HIV/AIDS knowledge was very high in terms of percentage and significant chi-square values.

In response to whether participants would share a cigarette with a person who is HIV/AIDS positive, 84% did not support the statement and this was statistically significant,  $\chi^2$  (2df, N 56) = 68,  $p < 0.001$ . Similar outcomes were observed when asked whether they would drink from the same cup used by someone infected by HIV/AIDS, as 84% rejected the statement which was significant,  $\chi^2$  (2df, N 56) = 13,  $p < 0.001$ . Regarding sharing food with an HIV/AIDS person, 83% had no problem with it which was significant  $\chi^2$  (2df, N 56) = 53.6,  $p < 0.001$ . As regarding using the same toilet seat, 79% said they would do so which again was significant,  $\chi^2$  (2df, N 56) = 56,  $p < 0.001$ .

When asked whether respondents would be prepared to kiss an HIV/AIDS infected person, 60% indicated that they would do so. This was also statistically significant  $\chi^2$  (2df, N 56) = 19.5,  $p < 0.001$ . In terms of taking care of an AIDS patient, 83% had no problem taking care of such patient. Statistically, such a response was significant  $\chi^2$  (2df, N 56) = 66,  $p < 0.001$ . Sharing clothes with an infected person was supported by 84% of respondents at the level of significance of  $p < 0.001$ . In response to if

receiving a blood transfusion from an infected person would lead to infection, overwhelmingly, 98% of respondents agreed. This was significant  $\chi^2$  (2df, N 56) = 112,  $p < 0.001$ . When asked whether if engaging in sexual activity with an infected person would lead to infection, there was another overwhelming response of 98% in support of the statement, which was also significant at  $p < 0.001$ . Shaking of hands with an infected person was rejected by 95% as a source of transmission. This was statistically significant,  $\chi^2$  (2df, N 56) = 101,  $p < 0.001$ .

Mosquito bite was rejected as a source of HIV/AIDS infection, and the rejection was significant at  $p < 0.001$ . Similar rejection was expressed regarding the existence of a cure for AIDS. HIV/AIDS being God's punishment for those who engage in sexual practice outside marriage was rejected by 93% of the respondents, and this was statistically significant  $\chi^2$  (2df, N 56) = 94.5,  $p < 0.001$ . The statement that if infected persons should be avoided as much as possible was rejected by 93% participants which was significant,  $\chi^2$  (2df, N 56) = 94.5,  $p < 0.001$ .

Many adolescents do not believe that they are likely to contract HIV/AIDS. For this reason, participants were asked to state whether they thought they had a chance of being infected by HIV/AIDS. Only 28% agreed with the statement. Those denying the statement were significantly more, thus confirming what other researchers have reported in the HIV/AIDS research literature.

In response to whether based on their knowledge of HIV/AIDS, participants were careful in their relationship with members of the opposite sex, 88% agreed with the statement and this was statistically significant  $\chi^2$  (2df, N 56) = 84.7,  $p < 0.001$ . HIV/AIDS children attending school with those who are not infected was accepted by 64% and was significant statistically at  $p < 0.001$ . Responses for sleeping on the same bed and sitting next to an HIV/AIDS person were both accepted at significant level ( $p < 0.001$ ).

## DISCUSSION

The present investigation aimed at examining the extent to which American College students were knowledgeable about HIV/AIDS, and the extent to which such knowledge was transferable to sexual behavior. The results overwhelmingly confirmed that indeed American college students are versatile in knowledge pertaining to HIV/AIDS transmission, infection, and prevention. On the question of knowledge transfer to real sexual behavior, the majority of participants responded that they were very careful in their relationship with members of the opposite sex, with the sole purpose of avoiding contracting HIV/AIDS.

Such outcomes were either like or unlike other studies reported in the review of literature as presented in the introductory section. They were like other reported

**Table 1.** Participants' correct responses frequencies, percentage, Chi-squares and probability N = 58.

No.	Statement	Frequencies	Percentage	Chi-square ( $\chi^2$ )	Probability (P)
2	Sharing cigarette with AIDS person	49	84	68	0.001
3	Sharing a cup with AIDS person	49	84	13	0.001
4	Sharing food with infected person	48	83	53.6	0.001
5	Using same toilet seat AIDS person	46	79	55.6	0.001
6	Kissing an AIDS person	35	60	19.5	0.001
7	Taking care of AIDS person	48	83	66	0.001
9	Sharing clothes with AIDS person	49	84	71	0.001
10	Blood transfusion from AIDS person	57	98	112	0.001
11	Having sex an infected person	57	98	120	0.001
12	Shaking hands with AIDS person	55	95	101.8	0.001
13	Mosquito bite	32	55	22.7	0.001
14	There is no cure for AIDS	42	72	53	0.001
16	AIDS is punishment for engaging in sex outside marriage	54	93	94.5	0.001
17	AIDS persons should be avoided	54	93	94.5	0.001
21	Stand a chance of Contracting AIDS?	16	28	33.6	0.001
22	Careful in relationship with gender counterpart to avoid AIDS	51	88	84.7	0.001
23	Should AIDS children be in the same school with those who do not have AIDS?	37	64	26.5	0.001
24	Would you sleep with an AIDS person?	39	67	31	0.001
25	Would you sit next to an AIDS person?	49	84	68.8	0.001

findings to the extent that, they confirmed that American college students' knowledge of HIV/AIDS is indeed very high (Adefuye et al., 2009; Rose, 2008; Sutton et al., 2011; Tagoe and Aggor, 2009).

In terms of transfer of knowledge, they were unlike some of the other reported findings, as those cited in the preceding statement. In the review of literature, researchers were inclined to assert a lack of correlation more than the converse. In this study, there was clear evidence that there was a correlation between HIV/AIDS knowledge and applying it to real sexual behavior. This was based on the majority of participants showing a high level of knowledge which matched a similar number of those who said they were very

careful in their relationship with members who predisposed them to contracting HIV/AIDS. Such finding confirms what other researchers have reported (California State, 2011; Khostrovani et al., 2011; Mongkuo et al., 2010)

This discourse may well be summarized by what has been presented in a comprehensive narration from the University of California. It is pointed out that research has been carried out extensively to establish whether the threat of contracting HIV/AIDS would lead college students to avoiding engaging in the behavior that is associated with HIV/AIDS infection.

While some studies may show change in sexual behavior, others have shown no correlation between increased knowledge of HIV/AIDS and

transfer of such knowledge to safe sex. For example, men who are knowledgeable in HIV/AIDS engage in safe sex. Moreover, they engage in sex less frequently and are inclined to take precaution by use of condom, when they engage in sexual act. On the other hand, college women's knowledge about HIV/AIDS is not associated with the use of precautionary measure such as condom use on false hope that they are not vulnerable to being infected.

In summary, the investigation has shown ample evidence that American College students are very knowledgeable about HIV/AIDS transmission, infection and prevention. This is in keeping with what other researchers have reported for the past two decades. In addition to this, this investigation

has shown a correlation between HIV/AIDS knowledge and the transfer of learning of such knowledge. This is a contrast with other findings which have not reported such outcomes.

## CONCLUSION

In the present investigation, it has been confirmed that the American college students' knowledge about HIV/AIDS is very good, and that there exists a relationship between such knowledge and its transferability to sexual behaviour change. Both aspects of the investigation contribute to knowledge in confirming and strengthening what other researchers have reported. It is a further contribution to knowledge, as it informs the reader that battle against HIV/AIDS is far from over, since there are still misconceptions which call for further public education on HIV/AIDS. Moreover, there are people who are knowledgeable about HIV/AIDS and yet they engage in sexual behavior that predisposes them to contracting and transmitting the disease. This calls for better strategies of reaching such audience.

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## UPCOMING CONFERENCES

**6th International Meeting on HIV Persistence, Reservoirs and Eradication Strategies,  
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