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Full Length Research Paper

Education level and (HIV/AIDS knowledge in Kenya

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Education level and human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) knowledge in Kenya investigated secondary and university students' HIV/AIDS knowledge in the City of Nairobi, Kenya. This was motivated by research findings in Sub-Saharan Africa and Asia, showing a correlation between education level and knowledge of HIV/AIDS. The method employed was that of descriptive statistics consisting of frequency, percentage, t-test and probability in the analyses of data. The sample comprised 259 female and male participants drawn from several schools and universities in Nairobi. The results showed that both male and female participants from both schools and universities had a very high knowledge of HIV/AIDS. In terms of comparison between secondary and university respondents, the latter's performance was superior, as the mean difference was statistically significant. Thus confirming what other researchers have reported in their research findings. In conclusion, it was argued that education remains the social vaccine in the absence of a cure for HIV/AIDS, which remains the most effective means for combating the enormously dreadful disease in recent human history. It is important therefore that education be given the highest priority in combating HIV/AIDS on the basis of the fact that it is controllable, manageable and preventable, all of which can be realized through education.

Key words: Human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS), girls' education, correlation, educational attainment, HIV/AIDS free children.

INTRODUCTION

In the World Food Programme (2013) comprehensive literature review in Sub-Saharan Africa, it was reported that education remains the only hope that can immeasurably contribute to prevention of the human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) transmission to children falling under the age of 5 to 14 years identified as free from HIV/AIDS. The observation is made in contrast to the adolescents within the range of 15 to 24 years, who are increasingly being ravaged by HIV/AIDS more than any other given group of population in Sub-Saharan Africa. On the basis

Africa. On the basis of an individual, education places such person in a better position to understand information on HIV/AIDS transmission and prevention; better access to health services, reduced social and economic vulnerability, and higher level of participation in programmes dealing with HIV/AIDS public education.

There is evidence to show that the more education one has, the less vulnerable and the more practice of safer sex. For example, girls with high school education are less likely to contract HIV/AIDS than those who have had lower level of education. The World Bank takes the position

that, against the background of AIDS being incurable, education may well be the alternate vaccine available to mankind. In Botswana, Fako et al. (2010) made a study of 1,294 primary to university students on their knowledge about HIV/AIDS, driven by the motivation that education is one of the factors predicting one's knowledge of HIV/AIDS. The results of the study confirmed what had been hypothesised. Those with higher level of education were more knowledgeable than those who had lower level of education, university students outperformed secondary school students. Quality of education also served as a predictor of one's knowledge of HIV/AIDS. Those who attended better schools were more knowledgeable than those who attended not so schools. Moreover, parents' children whose parents were more educated than others performed better than children whose parents had attained a lower level of education.

Rahman et al. (2006) in Bangladesh investigated adolescents' knowledge and awareness about HIV/AIDS. By use of a multivariate logistic regression analysis they concluded that, the number of years of schooling correlated to their HIV/AIDS knowledge. Similarly, Jukes et al. (2009) state that keeping girls in school serves as a shield against the risk of contracting HIV/AIDS. They further point out that there is a correlation between educational attainment and the chances of contracting HIV/AIDS, in such a way that, the higher the education level attained, the lower the chance of being HIV/AIDS infected. Girls who remain in school at both primary and secondary school contribute to lower chances of their being HIV/AIDS positive. They conclude that merely being in school, as well as higher educational attainment are each sufficient to guard against HIV/AIDS transmission.

According to Baker et al. (2010), there are many research findings showing that, higher education level is associated with lower level of HIV/AIDS risk taking. In an extensive investigation of 19,000 adults' education effect on the use of condom, observed that for every additional year in their education, there was a linear correlation increase in their use of condom. It was further argued that schooling enhances higher level of cognitive skills, in terms of both planning and reasoning. Such abilities contribute to better decision making, regarding the use of HIV/AIDS preventive measures. It was further argued that HIV/AIDS knowledge leads to improvement of attitude towards people who are infected, which comes about as a result of exposure to education.

United Nations International Children Education Fund (UNICEF) (2004) reports that representative surveys in 53 countries have shown that, education particularly geared at girls has the potential to equip young people with the necessary HIV/AIDS knowledge, that facilitates them in the prevention of transmission of HIV/AIDS infection. Comparative analyses of countries and regions have shown concrete evidence that, both young men and women with higher levels of education command higher

levels of HIV/AIDS knowledge; better understanding of prevention of infection, undergoing change of behaving that is likely to predispose them to contracting HIV/AIDS. It goes without saying that, quality education for children will lead to the protection of people threatened with the most dreadful disease in recent human history. According to Carol Bellamy, a UNICEF Executive Director, "Education is crucial to success against the pandemic. In fact, UNICEF remains convinced that until an effective remedy is found, education is one of the most effective tools for curbing HIV/AIDS" (World Food Programme (WFP), 2013).

A nationwide survey of 2,057 respondents in Afghanistan was carried out aimed at investigating their level of HIV/AIDS knowledge/awareness (Mooley, 2008). The results showed that the majority of them were not that well informed about HIV/AIDS. For the few that did well in their response to the survey, education and access to media played a significant role in heightening their HIV/AIDS knowledge and awareness. The level of education for the participants contributed immensely to their knowledge and awareness of HIV/AIDS. Moreover, education served as a bridge for gender divide, as the gap was increasingly narrowed between men and women, leading women who had a high level of education being as good as men with comparable education (Mooley, 2008).

Mondal et al. (2012) assessed ever married women's knowledge and awareness regarding HIV/AIDS and some of the factors associated with such knowledge in terms of both control and prevention. The sample consisted of 10,996 women whose age ranged between 15 to 49 years. The results showed that, among other factors, participants' education and that of their husbands had statistically significant correlation with their level of HIV/AIDS knowledge/awareness. In a related investigation, de Walque (2007) investigated the effect of education campaign on knowledgeability about HIV/AIDS over a period of 12 years in Uganda. This was followed by what the author refers to as "substantial revolution" in the HIV education. The campaign resulted in less and less women contracting HIV/AIDS in the rural areas, which were the focus of the study. In terms of use of condom, it was correlated to the level of schooling participants had attained (De Walque, 2007). Galvez (2012) in Peru examined the protective attitudes and practices against the risk of HIV/AIDS among Peruvian students selected from 52 schools. In comparison between age/education and knowledge, attitudes and practices, statistically significant correlations were observed. Those who were older and had higher level of education in terms of grades scored at the highest level of HIV/AIDS knowledge, respondents whose parents had higher education attainment ranked highest in their knowledge of HIV/AIDS.

According to the World Bank (2013), the education of children should be afforded the highest priority in a world

Table 1. Means in percentage and standard deviations, t-test and probability.

Country: N	SD	M (%)	t-test	P
Kenya: Sec School 157	6.4	78.4	125	0.001
University 102	8.3	80.4		

N = 259.

that is ravaged, daunted and haunted by HIV/AIDS. Such assertion is motivated by the fact that, good and quality based education ranks as one of the most effective and cost-effective ways of HIV/AIDS control and prevention. School children are referred to as the “window of Hope”. For the future, why are they referred to as such? Because school-age children are known as HIV/AIDS free generation between the ages of 5-14 years. This holds true even in countries where HIV/AIDS has hit the hardest. The World Bank refers to education as the “social vaccine” against HIV/AIDS. Research has shown that, for girls remaining in school and completing their basic education, their chances of being HIV/AIDS positive is reduced by 50%. According to Global Campaign for Education projects that by 2015 when education for all is expected to be achieved, 7 million cases of HIV/AIDS will be avoidable (2013).

In summary, it has been argued that, there is a correlation between level of education and HIV/AIDS knowledge. The longer one remains in school, the more the person is likely to know more about HIV/AIDS transmission, infection, and prevention. This does not end there, in so far as there is likely to be transfer of such knowledge in behaviour change. Important national and international organizations have underscored the supreme importance of education, as an effective means of combating HIV/AIDS, particularly in the secure knowledge that there is no known available cure. It was partly in this context that the present investigation resolved to examine how secondary school and university students in Kenya, the extent to which they differ in their knowledge of HIV/AIDS in relationship to their level of education.

METHODOLOGY

Sample

Participants who took part in this investigation were drawn from secondary school and university students in Nairobi, Kenya. Their distribution was as follows: 102 university students and 157 secondary school students, making a sum of 259 participants both females and males.

Procedure

For both secondary school and university participants, the questionnaire was administered by university lecturers known to the researcher. This was preceded by briefing students on what the

questionnaire was all about, and that responding to the questionnaire was voluntary. As such, they were free to either respond to the questionnaire, or choose not to respond to the questionnaire. There was no report of some of the prospective participants refraining from responding to the questionnaire, for all participating students.

Measuring instrument

A questionnaire comprising 25 statements and questions commonly used for testing respondents' HIV/AIDS knowledge, perceptions, attitudes and beliefs was used. Each statement and question had three options, namely “Yes, No Don't know”. Participants were asked to tick whatever option they thought was true of their HIV/AIDS knowledge. For confidentiality purposes, respondents were advised not to write their names or name of the school/university affiliated to. They were, however, requested to indicate their gender and date of birth. While the questionnaire comprised 25 statements and questions, only 19 were included in the statistical analyses. This was so because there was lack of clarity in the six statements/questions they responded to, so that either way they answered would mean the answer was correct.

RESULTS

Descriptive statistics in the form of frequency, percentage, means, standard deviations, “t-test” and probability were used as method of data analyses as displayed in Tables 1 and 2. In Table 1, the response to the questionnaire for secondary school participants was a mean of 78.4%, whereas for university students the mean was 80.4%. The mean difference stood at $t(257\text{ df}) = 125$, $p < 0.001$, which was statistically significant in favour of university students. Meaning that university students on account of their level of education, were more knowledgeable on HIV/AIDS than was the case with high school students. Table 2 displays frequency and percentage of responses for both secondary and university students. For both groups of participants, their HIV/AIDS knowledge was very high. On the other hand, on the basis of what has been shown in Table 1, there was a difference in mean that was statistically significant, showing that the HIV/AIDS knowledgeability for University participants was higher than that of secondary school students. Such outcomes were in alignment with the argument that higher levels of educational attainment correspond linearly with one's knowledge of HIV/AIDS.

DISCUSSION

Extensive research in Sub-Saharan Africa and Asia has been conducted to find out the relationship between educational attainment and knowledge/awareness of HIV/AIDS. In most research findings, a relationship between high level of education and knowledge/ awareness of HIV/AIDS has been observed, such that those who have attained higher level of education happen to be just as knowledgeable in HIV/AIDS in terms of its transmission,

Table 2. University and secondary participants' responses in frequency and percentage.

No.	Statement	University N = 102		Secondary N = 157	
		Freq.	%	Freq	%
2	Sharing cigarette with AIDS person	81	79	145	92
3	Sharing a cup with AIDS person	87	85	147	94
4	Sharing food with infected person	100	98	152	97
5	Using same toilet seat AIDS person	88	86	131	93
6	Kissing an AIDS person	43	42	103	66
7	Taking care of AIDS person	98	96	119	76
9	Sharing clothes with AIDS person	93	91	140	89
10	Blood transfusion from AIDS person	102	100	150	96
11	Having sex an infected person	102	100	149	95
12	Shaking hands with AIDS person	98	96	150	96
13	Mosquito bite	88	86	95	61
14	There is no cure for AIDS	82	80	118	75
16	AIDS is punishment for engaging in sex outside marriage	52	51	78	57
17	AIDS persons should be avoided	94	92	99	63
21	Stand a chance of	56	55	38	24
Contracting AIDS?					
22	Careful in relationship with gender counterpart to avoid AIDS	98	96	150	96
23	Should AIDS children be in the same school with those who do not have AIDS?	73	72	114	73
24	Would you sleep with an AIDS person?	43	42	92	59
25	Would you sit next to an AIDS person?	83	81	138	88

N = 259.

prevention infection and control. This served as the motivation for undertaking the present research investigation which sought to find out, whether in the case of Kenya similar observation would be confirmed in relationship with secondary school students and those at university in the City of Nairobi. It was hypothesized that on the basis of research findings, the performance of university students, on a questionnaire of 25 statements/questions, would outperform secondary school students.

The analyses of data showed that, both secondary and university students performed at high level in responding to the questionnaire, as shown in frequency and percentage. While this was so, further analysis on the basis of descriptive statistics by testing mean difference, the difference between the two groups was statistically significant. University students scored higher than secondary school respondents did. Such findings confirmed what other researchers in Sub-Saharan Africa and Asia have frequently reported (Fako et al., 2010; Baker et al., 2010; Mooley, 2008; Galvez, 2012). More-over, this also has confirmed what world organizations such as the World Food Programme (2013), UNICEF (2004) and the World Bank (2013) have advocated, regarding the supreme importance of education, as effective means of combating HIV/AIDS transmission and infection.

Fako et al. (2010) carried out an investigation in Botswana consisting of primary, secondary and university students on their knowledge of HIV/AIDS in relationship with their level of education. In every instance, students at higher level performed significantly better than those at low level of education. In Bangladesh, Rahman et al. (2006) reported that, among adolescents, the number of years of schooling correlated with their HIV/AIDS knowledge. Jukes et al. (2009) pointed out that there is a correlation between educational attainment and the chances of contracting HIV, in such a way that the higher the educational level attained, the lower the chance of being HIV/AIDS positive. It is further pointed out that, keeping girls in school serves as a shield against the rise of contracting HIV/AIDS. All these findings and more have been confirmed by the present investigation, so far as university students were more HIV/AIDS knowledgeable than those who were at secondary school level. It is partly in this context that world organizations, as mentioned earlier on, underscore the importance of education, starting at primary school level as a social vaccine in the control of HIV/AIDS, which is responsible for the millions of people the world over who have died, are dying and will continue dying. This need not continue, if education is accepted by all those concerned, as a "social vaccine".

Conclusion

Education level and HIV/AIDS knowledge in Kenya has confirmed a relationship between level of education and knowledge of HIV/AIDS. University participants compared to secondary school respondents performed at higher level in their knowledge of HIV/AIDS. Such results are gratifying, given the importance of education in the control of HIV/AIDS transmission and infection. Such results also serve as a challenge to society in relationship to the enormous damage and destruction of millions of lives. The cure for HIV/AIDS is nowhere in sight, though the quest for it continues through research. What has been established is that HIV/AIDS is manageable, controllable and preventable. This can be very well realized, if education is afforded the priority it deserves.

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Full Length Research Paper

Why do patients refuse antiretroviral therapy before they complete tuberculosis treatment? A qualitative enquiry

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In Sub Saharan Africa, human immunodeficiency virus (HIV) and tuberculosis (TB) co-infections are common, and patients often find out about their HIV positive status during consultation for pulmonary tuberculosis. Reports from the HIV and TB hospital unit in Swaziland indicate that many deaths are related to low uptake of antiretroviral therapy among patients co-infected with TB, and anecdotal evidence suggests reluctance and refusal by some TB/HIV co-infected patients to initiate antiretroviral therapy (ART) before completing TB treatment, and this phenomenon is not well understood. The aim of this study was to explore the reasons for refusing antiretroviral therapy among HIV co-infected tuberculosis patients, prior to the completion of tuberculosis treatment, at a regional hospital in Swaziland. A qualitative descriptive study was conducted to understand patients' views and concerns, which results in their refusing to initiate ART before completing tuberculosis treatment. A sample of convenience, consisting of nineteen HIV/TB co-infected patients was selected to answer the research question. Reasons given were the clients' un-readiness for ART, the perception that one was still in good health, the fear of adverse outcomes being precipitated by combining ART with TB medicines, preference for traditional medicines, and health systems-related problems.

Key words: Antiretroviral therapy, human immunodeficiency virus (HIV)/tuberculosis (TB) co-infections, tuberculosis, HIV.

INTRODUCTION

The scourge of human immunodeficiency virus (HIV) continues to significantly contribute to morbidity and mortality in Sub-Saharan Africa, and it is estimated that 70% of the worldwide acquired immune deficiency syndrome (AIDS) mortality occurs in Sub-Saharan Africa (UNAIDS, 2009). *Mycobacterium tuberculosis*, which is one of the opportunistic infections for HIV infected people, has been identified as a major factor in these deaths. The HIV/TB co-infections therefore remain a major public health challenge in Sub-Saharan Africa (Hesseling, 2009).

Tuberculosis is the most frequent opportunistic infection among HIV infected individuals, and also accounts for the majority of deaths in these patients in developing countries. Despite effective tuberculosis chemotherapy in HIV/TB co-infection, tuberculosis is associated with substantially increased case fatality rates. HIV is the strongest risk factor for TB infection in countries that have a high prevalence of HIV (Karim et al., 2010). Not only do recurrent or persistent co-infections increase the risk of

HIV transmission, and thus HIV incidence, but this may be reversed with treatment (Barnabas, 2011), thus confirming the need for concurrent treatment of HIV and TB.

In the developing world, many HIV-infected individuals only become aware of their HIV positive status after being initially diagnosed with tuberculosis in a healthcare facility (Akksilp et al., 2007), and this has resulted in the clinical protocol of testing people who present with tuberculosis for HIV. Treatment with highly active antiretroviral therapy (HAART) significantly improves the outcomes of HIV-infected people, and clinical trials have confirmed the benefits of initiating antiretroviral therapy during the course of tuberculosis treatment (Karim et al., 2010), with HIV co-infected tuberculosis patients who did not receive HAART while on TB treatment being reported to have a six times greater risk of death when compared with those co-infected patients who received HAART prior to completion of TB therapy (Sanguanwongse, 2008). Thus, the World Health Organisation's recommendation that TB patients who are on treatment, are co-infected with HIV and are eligible for antiretroviral therapy, should be initiated on HAART within two to eight weeks after beginning TB treatment (Sanguanwongse, 2008).

Swaziland is reported to have the world's highest HIV prevalence (Mah et al., 2010), and cases of TB co-infections are common. Karim et al., (2010), concluded that the initiation of antiretroviral therapy during tuberculosis therapy in patients with confirmed HIV/TB co-infection reduced mortality by 56% and that a delay in initiating ARV therapy increased the death rate from 5.4 per 100 person-years to 12.1 per 100 person-years when the initiation of HAART was delayed until the completion of tuberculosis therapy. The interval between completion of TB treatment and the initiation of HAART is important because a considerable number of deaths in the sequential therapy group occurred during this period. Furthermore, tuberculosis accounts for more than 20% of all hospital admissions and is responsible for an estimated 50% of deaths among HIV infected persons. These statistics confirm that the mortality and morbidity of the current TB epidemic is being fuelled by the high prevalence of HIV infection in the general population, and that efforts to control the TB epidemic is not likely to be successful if equally serious attention is not given to HIV infection control.

Although WHO recommends that all HIV co-infected TB patients should be commenced on antiretroviral therapy within two to eight weeks of initiating TB therapy, when the patient is clinically stable (Sanguanwongse, 2008), quarterly hospital statistics in Swaziland indicate that there is a significant proportion of TB/HIV co-infected patients who are not on antiretroviral therapy. Anecdotal evidence from health care workers has identified reluctance and refusal by some TB/HIV co-infected patients to take concurrent TB and ARV therapy, preferring rather to commence ART after completing TB treatment. However, this phenomenon was not confirmed or fully understood, hence this study.

The purpose of the study

The purpose of this study was to explore reasons why HIV and TB co-infected patients who are on tuberculosis treatment refuse antiretroviral therapy before they complete tuberculosis treatment.

METHODOLOGY

Study design

This was a qualitative descriptive study, using in-depth interviews.

Study setting

The study was conducted at the TB Clinic of a regional hospital in Swaziland. The hospital is the sub-region's referral facility and offers integrated TB/HIV management services at its TB Clinic. The TB Clinic offers TB screening services to an average of ten TB suspects per day, and an average of thirty new TB cases are detected per month. The clinic has fully integrated HIV management services so that TB/HIV co-infected clients access all services under one roof. Thus, HIV counseling and testing is offered to all TB suspects during the process of screening for TB and to all TB patients at the time of diagnosis.

Study population and sampling

The study population consisted of patients who have been diagnosed with TB, are HIV positive and have refused ART until the completion of TB treatment offered to them. Purposive sampling was used to recruit patients who met the inclusion. Eligible patients were identified by clinic records because when a patient states that he/she is not prepared to initiate ARVs when they are offered by a healthcare worker, this is recorded in red ink as refusal of ART on the patient's outpatient records, and against the patient's name in the facility's TB register. This serves as an alert for healthcare workers that the patient needs further counseling and health education on the importance of HAART, until he/she accepts ART initiation. Potential participants were contacted by telephone and/or face to face contacts through the facility's mobile treatment adherence officers. They were then informed about the study and given an appointment for an interview on the day that coincides with their regular visit to the clinic.

Ethical considerations

The study was approved by both the Medunsa Research Ethics Committee and the Ministry of Health's Research Ethics Committee in Swaziland. Permission to conduct the study was obtained from the management of the hospital. The purpose of the study was explained to recruited participants who were given an opportunity to ask questions, and those that agreed to participate in the study were requested to provide written informed consent.

Data collection

After obtaining informed consent from each patient, data was collected by using a self-developed in-depth interview guide and the interview was conducted in a private room in the clinic, using ISiswati, which is the local language. A digital voice recorder was used to capture the interview discussion. Interviews were conducted until the researcher reached a point of data saturation, which is when the data collection process no longer gathered any

new information. The point of saturation was reached after conducting nineteen (19) interviews.

Data analysis

The audio recordings from the digital voice recorder were transcribed verbatim and written as transcripts, translated into English, typed into word and uploaded into Nvivo 9 program for analysis. A codebook of codes or themes and corresponding definitions was developed, and the codes were applied to all the transcripts using Nvivo 9 software.

RESULTS

The demographic profile of the participants

A total of 19 patients, 10 males and 9 females participated in the study, with ages ranging from 22 to 63, and 68% (n = 13) being in the 30 to 49 year age groups. The majority (89.5%, n = 17) live in a rural area, and 63%, (n = 12) had attained secondary education. The majority (63%, n = 12) were monogamously married, and the number of children ranged between 0 and 8, with an average of 3 children per participant. Fifty three percent (n = 10) were self-employed, 16% (n = 3) were smokers and about a third drank alcohol. The majority (84.2%, n = 16) had been on TB treatment for a period exceeding two months,

Qualitative results

The qualitative results are presented as themes that emerged from the coding of the data using Nvivo. Themes 1 to 8 are majority voices, which mean that each of these themes emerged from transcripts of at least 9 participants. The remaining themes are categorized as minority voices, because each of these were coded from scripts of at least 4 participants. The differences between the majority and minority do not refer to the importance or significance of the theme, but rather to the number of scripts that the theme emerged from.

Theme 1

Relationship between TB and HIV: This theme refers to the respondent's views on the relationship between tuberculosis and HIV infections. The respondents stated that HIV predisposes one to TB.

"Through health education I now know that there is a relationship between these two diseases. If you are infected with HIV you are more vulnerable to TB, especially if you are not on antiretroviral therapy because your

immunity is progressively declining thus increasing susceptibility to TB." 32-year-old female respondent.

"Yes, there is an association. If you have TB, you may also be HIV infected. If you have TB you must also test for HIV and if you are infected with HIV you must be screened for TB," male respondent.

"I think if you are diagnosed with TB, it is also very likely that HIV infection may be present in association with the TB. These two diseases are so inter-related that if you are diagnosed with one of them chances are very high that you also have the other one." 29-year-old male respondent.

Theme 2

Comparison between health challenges of TB and HIV: This theme refers to respondents' opinions about whether HIV or TB poses more health challenges than the other. There is a general opinion that TB poses more health challenges than HIV.

"In the absence of treatment, TB progresses fast and may result in a person being bedridden in a short period of time while HIV may slowly progress over years, especially if a person takes good care of herself, such as eating a healthy diet," 40-year-old male.

The finding suggests that patients delay ART initiation during TB treatment because they view TB to be posing immediate health threat, and thus is not seen as urgent. However, some were of the opinion that in the long term, HIV poses more psychological challenges than TB because it is known to be fatal.

"I think the one living with HIV will face more challenges because of the fear of death, and the stress of knowing that you are HIV positive for life because there is no cure for this disease," 36-year-old male.

Additionally, here is a view that the two conditions pose equal threats.

"In my opinion there is no better disease between the two. I mean TB is curable and HIV is manageable despite being non-curable when one takes ARVs," 26-year-old female respondent

"Both diseases have equal health challenges because both diseases result in death if an individual does not take care of one's self," 33-year-old male

This indicates that despite the views that in the long term HIV poses a threat to life and that both diseases pose

equal health challenges, the respondents still give TB treatment first preference over ART by delaying the initiation of HIV treatment until they complete their TB treatment.

Theme 3

Views on the complications of TB medication: This relates to the side-effects of TB medicines that were experienced by the respondents, which resulted in them being reluctant to initiate additional HIV medication because they anticipate that complications will increase. Examples of such complications include skin rashes and itchiness, as well as increased appetite.

Theme 4

Preparation of participants for TB treatment: This theme refers to the preparation of respondents for TB treatment before they actually start with the treatment. The preparation for TB treatment included health education on the TB medicines, their side-effects, and the importance of adhering to the full course of treatment until being discharged by the doctor, as well as the role and importance of a TB treatment supporter.

"I received health education. The healthcare workers informed me about TB medicines. They stressed the importance of taking them on time daily and taking the full course of treatment until discharged by a doctor," 31-year-old female respondent.

"The nurses offered me health education concerning TB therapy. They told me about the various side effects of the medications, they encouraged me to take all my medications," 32-year-old female.

"I received health education on the duration of TB treatment and the fact that TB is curable. I was educated about the TB medicines and the importance of protecting people around me from contracting the disease, including children," 31-year-old male respondent.

Theme 5

Preparation of participants for ART: This theme refers to the preparation of respondents for antiretroviral therapy by healthcare workers before they actually start with the treatment. The preparation was through health education, counseling and the provision of information on the ART regimen.

"I received relevant health education. The nurse informed me that I needed ART initiation regardless of my CD4 count because I have TB/HIV co-infection. She also explained about ART and the fact that I needed the ARVs to improve my immunity because TB worsens the decrease in the CD4 count in the absence of ART," 32-year-old female.

There were some, however, that stated that they did not receive any preparation for ART although it is not clear how this occurred, given the specific process that aims to ensure that all patients access all components of the treatment regime.

Theme 6

The complications of taking TB and HIV medicines: This refers to the participants' opinions on perceived or anticipated complications of simultaneously taking TB and HIV medicines. Among the anticipated complications are overlapping side effects which may make it difficult to tell which of the two medications is actually responsible for any given side-effects, fear of confusing TB medicines with the antiretroviral medications, increased or compounded side-effects, deteriorating health status and increased pill burden.

"I thought that rushing to take ARVs could lead to deterioration in my physical well-being. When I was commenced on TB treatment my condition was critical hence I was afraid that being put on ART early would result in both medications being too strong for my incapacitated body with negative consequences," 42-year-old male.

Theme 7

Satisfaction with preparations: This theme refers to reported satisfaction of respondents who had already been prepared for ART with the manner in which they were prepared for the HIV medicines by the healthcare workers. Mostly, the respondents stated satisfaction with the way they were prepared for ART.

"I am content with the health education that is being offered. I am content with the way that I was prepared for ART," 32-year-old female respondent.

"I am satisfied with the way in which we are being prepared for ART," 29-year-old male.

Theme 8

Barriers to taking HIV medicines: This theme refers to minority voices on a range of reasons perceived as barriers

to initiating ART while on TB treatment.

a. HIV treatment has to be taken for life: "In the case of HIV, what de-moralises me is being on medication forever," 63-year-old male.

b. Lack of readiness to start ART: "I was still not psychologically ready for ART," 26-year-old female.

c. Self-perception of still being in good health despite being HIV positive: "I was undecided because I perceived myself to be still in a good state of health," 26-year-old female.

d. Preference for traditional medicines: "The Swazi belief that traditional medicine is better than medical one is also another barrier," 36-year-old male.

e. Anticipated side-effects of antiretroviral medicines: "I saw one patient who was initiated on ART yet he was not fully willing to be put on the treatment. He developed severe side-effects which resulted in his death," 35-year-old male.

f. Long distance between home and health facility: "This place is too far from home and I can't afford the transport costs," 63-year-old male.

g. Non-disclosure of HIV-positive status to partner: "I have been reluctant to open up," 33-year-old male respondent.

"The nurses asked if I had disclosed my HIV-positive status to my wife. After I told them that I had not yet done so, they explained the importance of disclosure in marriage," 42-year-old male respondent.

i. Lack of food: "My main problem is the lack of food," 43-year-old male study participant.

j. Stigmatization and the increased pill burden: "The barriers to taking HIV medicines include the fear of being stigmatized by friends and relatives, the lack of food, and the increased pill burden," 51-year-old female.

k. Health systems-related issues: "I was ill-treated by healthcare workers in this hospital's ART clinic. The way they treat patients in that building, you feel like you have already died. If I have to receive my ART from there I would rather stay at home," 32-year-old female.

"I am still not ready to start taking ARVs and this has been reinforced by the poor relationship with the Pre-ART counselor at my local clinic," 34-year-old male.

"I was also unable to do my CD4 test when I came for the baseline tests for ART initiation because the machine

was out of order," 40-year-old male.

Theme 9

Enablers for concurrent taking of HIV and TB medicines: This theme refers to a group of factors that are perceived to make it easier for the TB/HIV co-infected participants to start taking HIV medicines while they were still on TB treatment.

a. A regular source of income and food security: "I think getting adequate food and having a job are essential. The health education that I received made me understand that even recovery from TB is faster when you take both medications together," 26-year-old female respondent.

b. Involvement of HIV/TB co-infected expert clients during pre-ART counseling of HIV/TB co-infected patients: "The involvement of people who are already on both TB and HIV medicines, co-infected expert clients, in the health education sessions will make it easier for fellow HIV co-infected TB patients to take ARVs," 33-year-old male participant.

c. Acceptance of HIV-positive status by the patient and good interpersonal skills among the healthcare workers: "The fact that some of healthcare workers are good at communicating with clients, and acceptance of one's positive HIV status are also strong factors to encourage people to start with HIV medicines," 32-year-old male.

d. Deterioration of one's physical condition: "A sudden deterioration of my general state of health, will push me to take HIV medication" 29-year-old male respondent.

e. Involvement of spouse or partner: "The availability of my husband for us to undergo couple counseling so that he can be counseled appropriately about our discordance," 48-year-old female.

f. Health education on the importance of initiating ART on time: "We need to be educated that these medicines are life-saving," 32-year-old female.

DISCUSSION

The dearth of literature on the reluctance and refusal of patients to take ARTs before completion of TB treatment makes it difficult to assess how widespread this phenomenon is. However, the results of this study highlights the importance of further studies of this attitude and behavior, as it may explain the reason for some deaths among HIV infected persons who practice this behavior. It is not known how widespread this reluctance and refusal is, but it deserves further investigations and

address. The findings of this study suggest that although knowledge about the relationship between HIV and TB exists, it does not necessarily translate to acceptance of ART initiation during their TB treatment by HIV/TB co-infected patients. Despite stating satisfaction with the preparation for ART, the results show that this preparation was not adequate to influence the respondents to take TB and ART medications concurrently.

Although the participants acknowledge that both HIV and TB infections pose health problems, the participants view HIV as posing a lesser health threat than TB; hence their prioritization of TB medication and a decision to first complete this course of treatment before they can start with the perceived less threatening HIV infection. Interestingly, the fear of deterioration in state of health was identified both as a reason for not initiating HIV treatment before completing TB treatment, as well as a factor that will compel patients to initiate HIV treatment. The low socio-economic status, as reflected by inadequate resources for transport to the health facility, is similar to other studies in low income countries (Zachariah et al., 2007).

Of concern are reports that some patients reported that they did not receive preparation for ART, which is standard for all patients prior to initiating treatment. Failure to prepare patients by health professionals often results in them seeking and receiving information from other non-professionals, and may thus be contributing to failure to initiate treatment or failure to fully adhere for those who initiated treatment. Clinics that manage HIV disease need to take the results of this study to account, and address specific fears of patients, which goes beyond just imparting knowledge on ART. Considering that for immune compromised HIV infected patients, the deterioration in health often occurs within a short period, the findings of this study highlight the importance of an intervention to address this delay of ART by some patients, because the completion of TB treatment takes a minimum of six months, which may be too late to save lives.

LIMITATIONS OF THE STUDY

This was an exploratory study which did not seek to investigate the prevalence of the reluctance or refusal to complete TB treatment before initiating HIV treatment. The study therefore did not identify the extent to which this reluctance prevails among HIV positive patients, nor whether this is within a localized geographical area of Swaziland.

Conclusion

This study has identified a challenge that frustrates

effective treatment of HIV/TB co-infections, which are common in Sub Saharan Africa. The findings may explain some of the reasons why patients continue to die despite availability of drugs and treatment regimen. A responsive health system is one that understands the specific challenges in its operations, and this study may assist health care systems to focus on an area not previously given adequate attention. It is possible that the reluctance and refusal of ART is not limited to the community studied and that this practice is responsible for delaying initiation of ART and thus resulting in a number of deaths. The recommendation emanating from this study is that it be extended to other facilities and countries in Sub Saharan Africa.

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Full Length Research Paper

African university adolescents' gender differences in HIV/AIDS vulnerability

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African university adolescents' gender differences in human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) vulnerability investigation examined adolescents' frequent perception that they are not susceptible to HIV/AIDS infection. Specifically, it sought to find out whether there are gender differences in the belief that adolescents are not at risk of HIV/AIDS infection. The investigation was based on 366 male and female participants selected from diverse countries comprising Kenya, South Africa and Tanzania. The measuring instrument was a questionnaire dealing with HIV/AIDS transmission, infection and prevention. The statistical analysis was descriptive. There were statistically significant gender differences in the belief that adolescents were not susceptible to HIV/AIDS transmission. In conclusion, it was argued that high level HIV/AIDS knowledge and belief in invulnerability is a contradiction in terms, and that such belief has serious implication on sexual behavior change. Therefore, it is imperative that, HIV/AIDS public education underscores this misconception of invulnerability, to advance the conquest of the most dreadful and life-threatening disease in recent human history.

Key words: Adolescents' vulnerability, human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) transmission, HIV/AIDS prevention, sex differences, public HIV/AIDS education, HIV knowledge, risk perception.

INTRODUCTION

There is an increasing number of studies showing that many adolescents hold the view that they are immune to being human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) infected, believing that only others will contract HIV/AIDS. Partly in view of this stance, Mwale (2008) advances the argument that, if there is personal vulnerability to HIV infection, the person concerned will be on guard against HIV infection. Those who take the position of invulnerability are likely to engage

in HIV high risk sexual behavior. There is a belief among adolescents that only others can contract HIV, but not me. Failure to acknowledge one's vulnerability will lead to one ignoring the advice for safer sex or make use of condom once engaged in sexual activity.

According to Kibombo et al. (2007), perception of one being susceptible to contacting HIV/AIDS works as catalyst for undertaking the necessary precautionary measures. In their study of 5,112 adolescents' and their

perceptions of HI/AIDS, they noted that those concerned about contracting HIV and have a low self-perceived risk use such state of affair for avoiding sexual behaviour, that placed them on the verge of contracting HIV. Their study showed that one in five of the participants did not think they were in danger of contracting HIV.

Opt et al. (2010) examined college students knowledge and perceptions of HIV/AIDS and sexual practices in which it was observed that despite their knowledgeability about HIV/AIDS, they were not just as concerned about their becoming infected.

In a comprehensive report produced by the University of California (2011), it is reported that young people have the myth that they are immune to HIV infection, and that it can only happen to others. In a large sample of 650 American college students, Inungu et al. (2009) made a study of HIV knowledge, attitudes and practices which showed that 86.8 of the participants did not perceive themselves as likely to be infected by HIV. In view of this, the researchers drew the conclusion that there is a coexistence of misconception regarding the transmission of HI/AIDS and the denial of participants contracting HIV. This calls for proactive approach to resolve such challenge among college students (Idid).

In a South African investigation, van Wyk (2006) made a study of 290 undergraduate students' perceptions, attitudes and awareness towards HIV/AIDS with the results that they were informed about HIV/AIDS. This was not all, as they were some who were not well informed about HIV/AIDS and others who denied the existence of HIV/AIDS. In a Nigerian study based on 370 college students, Ching et al. (2005) investigated HIV knowledge, perception and sexual behaviors. The overall results showed that participants' knowledge of HIV/AIDS was not sufficient; they engaged in sexual activity that was rather risky and perceived themselves to be at low risk to HIV/AIDS infection. Ebeniro (2010) studied 324 Nigerian university students and reported that 6% of the participants neither had knowledge of how HIV/AIDS is transmitted, nor did they believe that there was such a thing as HIV/AIDS.

In a Kenyan investigation of persistent gap between HIV/AIDS knowledge and prevention investigation, Njogu and Martin (2003) reported that the majority of participants considered themselves less vulnerable to contracting HIV/AIDS, when they engaged in sexual activity. In a similar investigation of youths, Kabiru and Orpinas (2009) observed that, in a sample of 931 high school students, the majority of them were of the view that their chances of contracting HIV/AIDS was rather low if not nonexistent. The tendency for adolescents to hold the perspective that HICV/AIDS poses danger to anyone else except them, is a fallacy and misconception. Everyone remains vulnerable to HIV so long as he/she engages in what is referred to as HIV risk behavior. It is

important therefore for everyone to know the facts and the various ways of protecting oneself from being infected.

In the City of Lagos, Nigeria, Durojaiye (2009) reported that over 70% of the participants did not think that they were at risk of contracting HIV/AIDS. This was in spite of the fact that close to 70% of them were involved in sexual activity with multiple partners. It was nevertheless gratifying to know that those who thought that there was possibility of being infected, made use of condoms on a regular basis. With those who had low perception of contracting HIV/AIDS, there was no commitment to behavior change (Durojaiye, 2009).

Related to this, there are studies that have investigated gender differences among adolescents on their knowledgeability of HIV/AIDS transmission, infection and prevention. In summary, the outcomes have been divergent comprising four categories. Namely, there are results showing that either female or male participants are more knowledgeable than the others; the third category shows convergence that there is no significant difference between the forementioned groups and fourth has both male and participants doing better than the other on the basis of various questions/statements responded to. Such research findings will be reported here to support the narration advanced.

Durojaiye (2011) refers to HIV/AIDS as one of the most dreaded and devastating diseases in human recent history. It is therefore argued that behaviour change on the part of men and women presents the most effective way of controlling transmission and infection of HIV/AIDS. In a sample of 315 students consisting of both married and single participants. Their knowledge of HIV/AIDS was very high. It was observed that participants who were married were more knowledgeable than those who were single. On the other hand, a statistical analysis on the gender differences between male and female participants was non-significant. On the other hand, it was observed that married participants were more knowledgeable than those who were single.

In Malaysia, Wong et al. (2008) young adults' knowledge of HIV/AIDS was moderate given that they had of 4.6 out of 17 points. The majority of participants knew what HIV/AIDS was about. There were gender differences with female participants showing higher scores than male participants. In Afghanistan, an investigation of 1,054 university students drawn from four universities examined the level of HIV/AIDS knowledge, perception, attitudes and practices and gender differences (Mansoor et al., 2008). It was observed that there was gender parity in attitudes and general awareness. On HIV/AIDS knowledge, female participants were more informed than male participants.

Fraim (2011) investigated knowledge level and misconception about HIV/AIDS among 1,925 university

students in Turkey. Almost the entire sample claimed that they had heard about HIV/AIDS. In terms of knowledge of HIV/AIDS, it was average to moderate. The gender difference on level of knowledge and misconceptions was statistically significant. Men were able to identify people who were HIV/AIDS positive; secure HIV information from health care workers, the internet, friend and associates more than it was in the case with women participants. In terms of defining, HIV/AIDS women were excelled compared to their counterpart. It was further shown that in some questions/statements, women performed better than men, whereas in others men outperformed women.

Knowledge and attitudes of person living with HIV/AIDS towards HIV/AIDS in Iran was examined by Mahin et al. (2010). There were 100 family members who participated. Their responses to the questionnaire varied from question to question so that in some cases the scores were very high, whereas in others they were not so high. Female participants who had a high income and those whose level of education was high commanded a greater HIV/AIDS knowledge than men.

METHODOLOGY

The sample of the present study comprised adolescents selected from university students in Kenya, South Africa and Tanzania both males and females. The total number of participants added up to 366 with a distribution of 102 Kenya university students, 164 South Africa university students and 100 Tanzania university students.

Measuring instrument

The questionnaire comprised 25 questions/statements soliciting a response on the basis of three options, namely "Yes, No, Don't Know". This sought to identify gender differences in frequency and percentage. All that was expected was to tick the option that was descriptive of what they knew about HIV/AIDS. The focus question on HIV/AIDS invulnerability read as follows: "Do you think you stand a chance of getting AIDS?"

Procedure

Since the researcher could not be in all places at the same time, arrangement was made for university lecturers to be responsible for administering the questionnaire to their respective students. This was to be done after meeting what was expected of them by their institutions in administering such a questionnaire. The responding to the questionnaire was preceded by the lecturer concerned explaining to the participants what was expected of them. They were also advised that they had the choice of responding to the questionnaire, as a

matter of volition. In addition to the questions, participants were to fill in their gender and date of birth. For the purpose of confidentiality, participants were not permitted to write their names or institution of affiliation. On completion of the questionnaire the lecturers collected the papers which were sent back to the researcher in New York for scoring and statistical analyses.

RESULTS

Descriptive statistics in the form of frequency, percentage, chi-square and probability were used as a method of data analyses as displayed in Table 1. The analyses were carried out for each country separately independently of each other. In such analyses there were three approaches used, namely the frequency and percentage of female and male participants on the entire questionnaire consisting of 25 statements and questions (Test One); the frequency and percentage of gender differences on the focus question measuring respondents' HIV/AIDS vulnerability and a chi-square for the purpose of determining whether the HIV/AIDS invulnerability was statistically significant (Test Two).

In terms of the overall 25 statements/questions, Tanzania respondents performed as follows: men had a knowledge score of 76.7% compared to a score of 73.2% for women; for Kenya participants, men scored 79.8%, whereas women scored 80.6%; for South Africa men scored 77.4% compared to a score of 73.4%. From the scores obtained by each of the three diverse groups of university students, it was clear that their performance was high and comparable to what other researchers in these specific African countries and those from outside the continent of Africa had. As regards the HIV/AIDS invulnerability based on each country and for male and female participants separately, the results in percentage was as follows: Tanzania male participants had a score of 75% compared to women with a score of 80%; Kenya male respondents had a score of 87% compared to women who scored less than 1%; for South Africa, women scored 81% while men had a score of 78%.

The use of chi-square for determining the statistical gender mean differences for the three sets of participants showed that all of them had a statistically significant gender mean difference as follows: Tanzania $X^2(1df, N98) = 30.7$ $p < 0.001$; Kenya $X^2(1df, 100) = 66.4$, $p < 0.001$; South Africa $X^2(1df, N162) = 56.2$, $p < 0.001$. The gender mean difference in the case of Tanzania university students meant that women felt more HIV/AIDS invulnerable than their counterparts felt. Specifically, it means women did not think that it was possible for them to be infected by HIV/AIDS more than was the case with male respondents. In the case of Kenya university students, male participants were of the stronger view that

Table 1. Frequency Percentage Chi-Square and Probability. Do you think you stand a chance of contracting HIV/AIDS?

Country	Test One		Test Two		χ^2	P
	Frequency	%	Frequency	%		
Kenya						
Male	982	79.8	56	87	66.4	0.001
Female	2362	80.6	2	0.05		
South Africa						
Male	1041	77.4	56	81	56.2	0.001
Female	1274	73.4	72	78		
Tanzania						
Male	795	76.7	44	75	30.7	0.001
Female	516	73.2	33	80		

they were unlikely to contract HIV/AIDS. This was a great contrast to females who overwhelmingly felt that they stood a chance of being HIV/AIDS infected. As regards South Africa, male respondents claimed invulnerability more than was the case with women. In short, women in Tanzania considered themselves more invulnerable to HIV/AIDS than their counterparts. In Kenya, men felt that they were HIV/AIDS invulnerable, whereas women assumed the opposite stance. In South Africa men considered themselves more invulnerable than women respondents.

DISCUSSION

Research findings in many countries around the world have shown that university adolescents command a high knowledge of HIV/AIDS. It has also been made known that there are gender differences in HIV/AIDS knowledge. Such findings fall under three categories namely those which show that men are more knowledgeable than women; others have shown that women are more knowledgeable than men respondents; others have indicated that gender differences vary from question to question, meaning that in some questions women perform better than men and vice-versa. The fourth set of findings have declared gender parity, meaning that there is no difference as both genders perform equally well.

While attempts were made to examine the mentioned views and findings, the focus of this study was to look at the stance adolescents in various parts of the world have associated themselves with, when it comes to HIV/AIDS. That is the majority of adolescents entertain the belief that, they do not stand a chance of HIV/AIDS ever being transmitted to them. Surprisingly this is also claimed by

adolescents who engage in high risk behavior. Such stance was a driving force and motivation of undertaking the present investigation. Specifically, given that indeed adolescents subscribe to such belief, would it be possible that, there might be gender difference in such belief? Would female or male respondents be more inclined to think this way than their counterparts? The data analyses showed mixed findings, though there was predominance of male participants claiming invulnerability more than their counterparts, the women. In Tanzania, women participants more than men claimed invulnerability; in Kenya men participants claimed invulnerability more than was the case with women; in South Africa, male university students laid claim on invulnerability more than their counterparts. This leads to a sum of two sets of participants attributing invulnerability to men, and only one set of participants attributing invulnerability to women. Such divergent outcomes confirm other investigations which have reported similar results in various parts of the world (Mansoor et al., 2008; Wong et al., 2008; Mahim et al., 2010; Sadegh et al., 2010; Durojaiye, 2009).

According to the Tanzania set of sample, female participants were more HIV/AIDS invulnerable than male participants, which confirms what was reported among American college women students who did not believe that they stood a chance being HIV/AIDS infected (University of California, 2011). In fact, overall the majority of college students ranging from 75 to 85% did not feel that they were at risk of HIV/AIDS transmission. Fischhoff et al. (2011) argue that adolescents are known to engage in risk behavior on account of their belief in invulnerability, which is referred to as "the current conventional wisdom of adults views of adolescents' behaviour".

In the study conducted by Ebeniro (2010), it was reported that many participants did not believe that they were susceptible to contracting HIV/AIDS. It is argued that other adolescents engage in risk behavior because they attach vulnerability to a point of hopelessness. In other situations, such invulnerability places adolescents in a position of making wrong decisions, thus leading them to risk behavior physically or psychologically (Ibid). "The belief that HIV could happen to some people and not themselves is a prevalent thought among the students". On the basis of such belief, adolescents see no need for the use of condom and this gives them the licence to engage in multiple sex partners relationship.

In the present investigation, it was observed in Kenya and South Africa that male respondents associated themselves with HIV/AIDS invulnerability more than female respondents. According to Gupta (2009), in many societies, traditions lend support to the belief that men are associated with risk-taking behavior in a wide range of behavior, and therefore this accounts for the behavior of male participants, as demonstrated in this investigation.

Conclusion

The present investigation has confirmed the existence of statistically significant gender differences of HIV/AIDS invulnerability among African university adolescents in Kenya, South Africa and Tanzania. In the Tanzania sample, female participants claimed greater HIV/AIDS invulnerability than their counterparts. In Kenya and South Africa, male participants showed greater HIV/AIDS vulnerability than was the case with female respondents. All participants had a high level knowledge of HIV/AIDS knowledge and awareness. However, such knowledge is incongruent with reality when adolescents do not believe that they are susceptible to HIV/AIDS transmission, particularly when they freely engage in behavior that predispose them to HIV/AIDS infection. According to Inungu et al. (2009), there is a coexistence of misconception regarding the transmission of HIV/AIDS and the denial of participants controlling HIV/AIDS. This, therefore, poses a challenge to society and underscores the continued importance of public HIV/AIDS education for the control, management and prevention of the most dreaded disease in recent human history.

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Full Length Research Paper

Correlates and consequences of internalized stigma of mental illness among people living with HIV/AIDS in Nigeria, West Africa

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There is evidence that internalized stigma significantly impacts the lives of depressed people living with human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) (PLWHA). Nevertheless, there is paucity of data on the extent, domains and demographic correlates of internalized stigma among PLWHA; hence the need for this study. This was a hospital based, cross sectional, descriptive study of one hundred and seventy depressed PLWHA. The PHQ-9 was used to screen for depression. The severity of the depression was classified as minimal, mild, moderate and severe. The three keys of social determinants of depression (SDS) were assessed and the association with stigma sought. A modified version of stigma of mental illness scale (ISMI) was used as a measure of their self stigma. The prevalence of depressive disorders was 57%. The spectrum of stigmatization was as follows, 103 (60.6%), minimal, 33 (19.4%), mildly, 19 (11.2%), moderately and 15 (8.8%) severely stigmatized. There was a strong association between stigma and age group, educational level, monthly income, stressful life events as well as social cohesion. Self-stigma is a common phenomenon in depressed PLWHA. It is not possible to manage PLWHA without considering the highly stigmatizing context in which they are embedded. Moreover, due to the high burden of depressive disorders and its association with AIDS related stigma, routine screening of PLWHA for both conditions is recommended.

Key words: Internalized stigma, mental illness, human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS), Nigeria.

INTRODUCTION

Self stigma is the prejudice which people with depression turn against themselves (Corrigan, 2000). It is a product of internalization of shame, blame, hopelessness, guilt

and fear associated with depression (Corrihan, 1998). In self stigma, patients may hold negative belief about self as being incompetent with character weakness.

Moreover, internal stigma is a powerful survival mechanism aimed at protecting oneself from external stigma and often results in thoughts or behavior such as the refusal or reluctance to disclose a positive human immunodeficiency virus (HIV) status, denial of human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) and unwillingness to accept help (Greeff et al., 2008). Eandeshaw (2012) while trying to study the role of stigma in depression at Gonder University Hospital, Ethiopia found that majority of the HIV patients (78%) reported experience of stigma.

Nearly two-thirds of all people with diagnosable depression do not seek treatment (Farina et al., 1968). Stigma surrounding the receipt of mental health treatment was among the many barriers that discourage people from seeking treatment. The stigmatization of depression and the lack of information of the symptoms of depression are seen as the main barriers of seeking helps for mental health. Stigma leads to low self-esteem, isolation and hopelessness. Furthermore, low self-worth in response to stigmatization is found to be a predictor of poorer social adjustment (Farina et al., 1968). Social support is a useful resource that helps minimize psychological stress. It also plays a key role in buffering the negative effects of HIV-related stigma (Brouard, 2012). Social support is particularly important for women as they rely more on social relationships compared with men in similar situations (Hurdle, 2001). There is a well-documented inverse relationship between social support and depression in people living with HIV/AIDS (PLWH) (McDowell, 2007).

The dual existence of AIDS related stigma and depressive disorders among PLWHA could lead to a number of adverse health outcomes. Stigma in Sub-Saharan Africa seems to be particularly common because what happens to one person concerns the whole community. The communal life in itself poses a dilemma because it brings about stigmatization when PLWHA are faced with low social cohesion (Greeff et al., 2008). Other studies show that family members of a person who died of HIV/AIDS or family members who live with PLWHA are stigmatized; therefore family members encourage PLWHA to remain silent to avoid social rejection (Wood et al., 2008). Receiving assistance from the government also enhances a perception of difference from other members of the community since it is assumed that only PLWHA are offered such support in a community where almost everybody is poor and needs support (Greeff et al., 2008).

The effectiveness of efforts designed to address mental illness stigma will rest mainly on our ability to comprehend stigma processes, the factors that produce such processes, and the mechanisms that lead from stigmatization to detrimental consequences. Critical to such an understanding is our capacity to measure the essential components of stigma processes. Little work

had been done to find out the association between AIDS related stigma and depressive disorders in Sub-Saharan Africa (Kalichman, 2003; Simbayi, 2007; Sorsdahl, 2011), despite the fact that examining the relationship between AIDS related stigma and major depressive could be useful in holistically assessing the patients.

METHODOLOGY

This study was conducted at the HIV/AIDS clinic at Kwara State Specialist Hospital, Ilorin, in North Central Nigeria. This study was a descriptive, cross-sectional study carried out from 1st of June to 31st August, 2013. The sample size was estimated using the Fisher formula (Araoye, 2003), using 21.3% from a previous study (Ndu et al., 2011), as the best estimate of depressive disorders among people living with HIV/AIDS. A minimum size of 218 was calculated using Fisher's formula but 300 was used to increase the power and reliability of the study. Every adult HIV/AIDS patients who consented were recruited until the sample size of 300 was obtained.

The patients health questionnaire PHQ-9 (Appendix A) is a brief, 9-item, patients self-report depression assessment tool that was derived from the interview-based PRIME-MD (Kroonenke et al., 2001, 2003). It was specifically developed for use in primary care general medical settings. It is the only short self-report tool that can reasonably be used both for diagnosis of DSM-4 major depression as well as for tracking of severity of major depression over time (Liang, 2001). In Nigeria, Abiodun et al. (2006) found out that the internal consistency was 0.85. The PHQ-9 had good concurrent validity. It also had good test-retest reliability. Sensitivity was 0.897. Specificity was 0.989, while the positive predictive value (PPV) was 0.875.

Based of existing research (World Health Organization (WHO), 2008, 2010; Stewart et al., 2007), we used three keys SDH: socioeconomic status, social cohesion and negative life events (Appendix B). Socioeconomic status included two indicators: years of schooling and self-reported economic status of the family, in general, in the previous year. Categories for years of schooling were as follows: above average (7 years and above), average (1 to 6 years) and below average (0 years). Economic status of the family was self-reported as good, average or poor. Social cohesion was assessed from responses to two questions: (1) in the previous year, how often did you ask someone for help when you had problems? (Never = 1; Seldom = 2; Sometimes = 3; Often = 4), and when you had problems? (spouse or lover; parents, brothers, sisters or children; other relatives; people outside the family; organization or schools with whom you are affiliated; government, party or trade unions; religious or non-governmental organizations; other organizations) (no = 0; yes = 1). (2) Negative life events were gauge using a 12-item scale (serious illness in oneself, serious illness in the family, financial difficulties, conflict with spouse, conflict with other family members, conflict with people in the village, conflict between family members, infertility issues, problems at work or school, problems in an intimate relationship, abuse and other events).

Age, gender, marital status, education level, self-rated financial status, social support and social cohesion, employment status and estimated monthly income were the socio-demographic variables and potential confounders. Monthly income was assessed using the minimum wage stipulated by the Federal Government of Nigeria, which is Twenty Thousand Naira (₦20, 000).

Internalized stigma of mental illness (ISMI) was the questionnaire used in the present study which included 55 items pertaining to internalized stigma, which were abridged to produce the 29-item ISMI (Stephannie, 2013). Each statement is assessed on the

following 4-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Items were grouped theoretically a priori into five subscales: Alienation, stereotype endorsement, perceived discrimination, social withdrawal, and stigma resistance. In sub-Saharan African, the internalized stigma scale was internally consistent, as suggested by Cronbach's alpha of 0.73 (95% confidence interval [CI], 0.69 to 0.78) (Alexander et al., 2013).

Completed questionnaire and measurements were entered into a computer data base. The data were analyzed using the Epidemiological information (Epi-info) (2005) software package. The 2 by 2 contingency tables were used to carry out Chi-square test and to find out the level of significance and values less than 0.05 were regarded as statistically significant.

RESULTS

Table 1 shows the socio-demographic characteristics of the respondents. A total of one hundred and seventy sero-positive respondents with depression were recruited to the study. The age range 36 to 40 years had the highest number of respondents 50 (29.4%). Females 139 (81.8%) outnumbered males 31 (18.2%), giving a male: female ratio of 1:4.5. Majority of them 56 (32.9%) had no formal education 55 (32.4%). Table 2 displayed the treatment variables. Sixty eight (40%) were on AZT+3TC+NVP while 5 (2.9%) were on AZT+3TC+LPV/r. Table 3 shows that 103 (60.6%) were minimally, 33 (19.4%) mildly, 19 (11.2%) moderately and 15 (8.8%) severely stigmatized. The p value was statistically significance ($p < 0.001$). Table 4 displayed the association between socio-demographic factors and level of stigma. Females had higher stigma scores. Stigma was very common among 36 to 40 years, as well as those with low social-economic status. Table 5 shows that higher level of internalized stigma was associated with stressful life events 13 (24.5%) and low social cohesion 13 (9.7%). Table 6 shows the evaluation of the components of the Internationalized Stigma of Mental Illness Scale (ISMI), adjusted for depressive disorders, the mean scores and the standard deviation

DISCUSSION

The prevalence of depressive disorders among HIV/AIDS patients attending the highly active anti-retroviral therapy (HAART) clinic, at the Kwara State Specialist Hospital Sobi, was 57%. One hundred and nine (36.3%) had minimal depression, while 4 (13%) were severely depressed. Depressive symptomatology in the population mirrored presentation of depression in other setting (Bing, 2001; Pence, 2007). The study replicates previous findings among PLWHA patients in Nigeria in particular. It also falls within the rates seen internationally (Chikezie, 2013; Olisah, 2010; Bradley 2013).

The highest age group 36 to 40 years was similar to 30 to 39 years of Hassan et al. (2012), but different in terms

of gender, where 64% of the PLWHA were male and 35% female compared to our study, where 18.2% were male and majority 81.8% were female. Contrary to our finding, where female were more severely stigmatized, Hassan et al. (2012) found that the males were more likely to experience a higher level of internalized stigma. Zierler et al. (2000) found no gender differences in reporting stigma, nor were there ethnic or age differences.

In this study, internalized stigma was associated with stressful life events and low social cohesion. Social support is a useful resource that helps minimize psychological stress. It also plays a key role in buffering the negative effects of HIV-related stigma (Brouard, 2006). There is a well-documented inverse relationship between social support and depression in PLWHA (Catz, 2002). As regards level of stigma, the group that developed ISMI (Ritsher 2003) suggests using the midpoint of the scale (an average score equal or above 2.5 on the 1 to 4 point scale) as a possible level of high internalized stigma. Similarly, Adewuya et al. (2011) reported high self-stigma. Another way of determining the level of stigma was suggested by Lysaker et al. (2012). They proposed that a score of 2 or less should be labeled "minimal stigma", scores between 2 and less than 2.5 could be labeled as "mild stigma", scores between 2.5 and 3 could be labeled as "severe stigma".

Army et al. (2013) reported 35% of moderate to severe levels of internalized stigma. Similarly, Santos et al. (2011) reported that individual with depressive symptomatology showed significant levels of HIV stigma in comparison to non-depressed participants. In Jamaica (White 2005), there was a high level of stigma associated with being HIV-positive and therefore many HIV-infected patients do not disclosed their status. The stigma associated with being known to be HIV-infected has been found to correlate significantly with having depressive symptoms (Li Li, 2009). The HIV-infected patients tend to go to clinics outside their communities to ensure that they are not recognized by members of their local community. This level of anonymity and reduced isolation may act as a buffer for depression. Similarly, PLWHA in Thailand (2009) face tremendous challenges, including HIV-related stigma, lack of social support, and mental health issues such as depression.

Dranpalski et al. (2013) also reported moderate to severe levels of internalized stigma. Elaine et al. (2010) found out that over one fifth of the participants (21.7%) reported moderate or high levels of self-stigma, 59.7% moderate or high stigma resistance, 63% moderate or high empowerment, and 71.6% moderate or high perceived discrimination. In a reduced multivariate model, 27% of the variance in self-stigma scores, among people with a diagnosis of bipolar disorder or depression, was accounted for by levels of empowerment, perceived discrimination, and number of areas of social contact, education and employment. These observed differences

Table 1. Socio-demographic characteristics of respondents.

Variable	N = 170	(%)	Others	
Age group (years)				
< 26	19	11.2		
26 – 30	27	15.9		
31 – 35	20	11.8		
36 – 40	50	29.4		
41 – 45	11	6.5	Mean age is 39 years with SD of ± 10.8	
46 – 50	19	11.1		
51 – 55	6	3.5		
56 – 60	11	6.5		
>60	7	4.1		
Gender				
Male	31	18.2		
Female	139	81.8	-	
Ethnicity				
Hausa	39	22.9		
Yoruba	92	54.1		
Igbo	28	16.5	-	
Others	11	6.5		
Religion				
Christianity	30	17.6		
Islam	139	81.8	-	
Traditional	1	0.6		
Marital Status				
Single	14	8.2		
Married	14	8.2		
Separated/divorced	116	68.3	-	
Widowed/widower	26	15.3		
Educational level				
Non-Formal	56	32.9		
Primary	55	32.4		
Secondary	42	24.7	-	
Tertiary	17	10.0		
Occupation				
Trader	91	53.5		
Civil servant	16	9.4		
Self employed	43	25.4	-	
Unemployed	14	8.2		
Students	6	3.5		
Monthly Income				
No Income	20	11.8		
≤ 20000	129	75.9		
20001-30000	10	5.8		
30001-40000	6	3.5	-	
40001-50000	3	1.8		
>50000	2	1.2		

Table 2. Treatment variables of HIV patients at the Specialist hospital, Sobi, Ilorin, Nigeria.

Combination	Frequency	Percentage (%)
AZT+3TC+NVP	68	40
AZT+3TC+EFV	34	20
4DT+3TC+NVP	13	7.6
TDF+FTC+EFV	28	16.5
TDF+FTC+NVP	15	8.8
ABC+3TC+NVP	7	4.2
AZT+3TC+LPV/r	5	2.9
Total	170	100

AZT = Zidovudine, 3TC = Lamivudine, NVP = Nevirapine, EFV = Efavirenz, TDF = Abacavir.

Table 3. Association between stigma and depression among HIV/AIDS patients at Kwara State Specialist Hospital Sobi, Kwara State.

Score	Stigma level	Depressed (%)	P-value
<2	Minimal	103 (60.6)	0.0001
2.0-2.49	Mild	33 (19.4)	
2.50-2.99	Moderate	19 (11.2)	
≥ 3.0	Severe	15 (8.8)	
	Total	170 (100.0)	

Table 4. Association between ISMI, gender, age group and educational level as a measure of socio-demographic factors.

Sex	Level of stigma				Total (%)	p-value
	< 2	2.00 – 2.49	2.50 – 2.99	≥3.00		
Male	23 (74.2)	5 (16.1)	1 (3.2)	2 (6.5)	31 (100.0)	0.289
Female	81 (58.3)	28 (20.1)	18 (13.0)	12 (8.6)	139 (100.0)	
Total	104 (61.2)	33 (19.4)	19 (11.2)	14 (8.2)	170 (100.0)	
Age group						
<26	14 (73.7)	0 (0.0)	0 (0.0)	0 (0.0)	19 (100.0)	0.001
26-30	14 (51.9)	4 (14.8)	8 (29.6)	1 (3.7)	27 (100.0)	
31-35	18 (90.0)	2 (10.0)	0 (0.0)	0 (0.0)	20 (100.0)	
36-40	29 (58.0)	15 (30.0)	3 (6.0)	3 (6.0)	50 (100.0)	
41-45	5 (45.5)	4 (36.4)	5 (26.3)	0 (0.0)	11 (100.0)	
46-50	10 (52.6)	4 (21.1)	5 (26.3)	0 (0.0)	19 (100.0)	
51-55	3 (50.0)	1 (16.7)	2 (33.3)	0 (0.0)	6 (100.0)	
56-60	7 (63.6)	2 (18.2)	0 (0.0)	2 (18.2)	11 (100.0)	
>60	4 (57.1)	1 (14.3)	1 (14.3)	1 (14.3)	7 (100.0)	
Total	104 (61.2)	33 (19.4)	19 (11.2)	14 (8.2)	170 (100.0)	
Educational level						
Non-formal	37 (66.1)	10 (17.9)	5 (8.9)	4 (7.1)	56 (100.0)	0.035
Primary	35 (63.6)	10 (18.2)	8 (14.5)	2 (3.6)	55 (100.0)	
Secondary	17 (40.5)	13 (31.0)	5 (11.9)	7 (16.7)	42 (100.0)	
Tertiary	15 (88.2)	0 (0.0)	1 (5.9)	1 (5.9)	17 (100.0)	
Total	104 (61.2)	33 (19.4)	19 (11.2)	14 (8.2)	170 (100.0)	

Table 4. Contd.

Monthly income						
No Income	11 (57.9)	1 (5.3)	3 (15.8)	4 (21.1)	19 (100.0)	
Less or equal to 20000	80 (61.5)	27 (20.8)	15 (11.5)	8 (6.2)	130 (100.0)	
20001-30000	5 (50.0)	5 (50.0)	0 (0.0)	0 (0.0)	10 (100.0)	
30001-40000	6 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	6 (100.0)	0.003
40001-50000	1 (33.3)	0 (0.0)	0 (0.0)	2 (66.7)	3 (100.0)	
>50000	1 (50.0)	0 (0.0)	1 (50.0)	0 (0.0)	2 (100.0)	
Total	104 (61.2)	33 (19.4)	19 (11.2)	14 (8.2)	170 (100.0)	

Table 5. Association between ISMI, negative life events and social cohesion as a measure of social determinants of health.

Negative life events	Level of stigma				Total (%)	p-value
	< 2	2.00 – 2.49	2.50 – 2.99	≥3.00		
0	22 (66.8)	8 (25.0)	2 (6.2)	0 (0.0)	32 (100.0)	
1	33 (66.0)	11 (22.0)	5 (10.0)	1 (2.0)	50 (100.0)	
2	27 (77.1)	5 (14.3)	3 (8.6)	0 (0.0)	35 (100.0)	0.000
>3	22 (41.5)	9 (17.0)	9 (17.0)	13 (24.5)	53 (100.0)	
Total	104 (61.2)	33 (19.4)	19 (11.2)	14 (8.2)	170 (100.0)	
Social cohesion						
Low	82 (6.12)	20 (14.9)	19 (14.2)	13 (9.7)	134 (100.0)	
Fair	20 (58.8)	13 (38.2)	0 (0.0)	1 (2.9)	34 (100.0)	0.018
High	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)	
Total	104 (61.2)	33 (19.4)	19 (11.2)	14 (8.2)	170 (100.0)	

Table 6. Internationalized stigma of mental illness scale (ISMI), adjusted for depressive disorders.

No.	Alienation	Mean score	SD
1	I feel out of place in the world because I have depression	1.58	0.81
2	Having depression has spoiled my life	1.66	0.79
3	People without depression could not possibly understand me	1.59	0.76
4	I am embarrassed or ashamed that I have depression	1.67	0.79
5	I am disappointed in myself for having depression	1.67	0.79
6	I fell inferior to others who don't have depression	1.65	0.78
Stereotype endorsement			
7	Stereotypes about depression affected people apply to me	1.60	0.78
8	People can tell that I have depression by the way I look	1.64	0.77
9	Because I have depression, I need others to make most decisions for me	1.83	2.66
10	People with depression cannot live a good, rewarding life	1.64	0.72
11	Depression affected people should not marry	1.82	2.66
12	I can't contribute anything to society because I have depression	1.62	0.72
Discrimination experience			
13	People discriminate against because I have depression	1.64	0.75
14	Others think that I cant achieve much in life because I have depression	1.64	0.77
15	People ignore me or take me less seriously just because I have depressive	1.71	0.84
16	People often patronize-me, or treat me like a child, just because I have depression.	1.91	2.67
17	Nobody would be interest in getting close to me because I have depression	1.68	0.78

Table 6. Contd.

Social withdrawal			
18	I don't talk about myself much because I don't want to burden others with my depression.	1.08	1.08
19	I don't socialize as much as I used to because my depression might make me look 'weird'	0.79	0.79
20	Negative stereotypes about depressive keep me isolated from the normal world	0.80	0.80
21	I stay away from social situations in order to protect my family or friends from embarrassment	0.77	0.77
22	Being around people who don't have depression makes me feel out of place or inadequate	0.76	0.76
23	I avoid getting close to people who don't have a mental illness to avoid rejection	0.79	0.79
Stigma resistance			
24	I feel comfortable being seen in public with a person obviously affected by depression	1.69	0.77
25	In general, I am able to live life the way I want to	2.10	0.96
26	I can have a good fulfilling life, despite my depression	2.04	0.99
27	People with depression make important contribution to society	2.13	0.99
28	Living with depression has made me a tough survivor	2.14	0.98

could be attributed to the sample size, culture, differences in diagnostic groups and regional variations.

Similarly, the prevalence of internalized stigmas among 420 HIV-positive men and 643 HIV-positive women from having HIV infection and one in five had lost a place to stay or a job because of their HIV status. More than one in three participants indicated feeling dirty, ashamed, or guilty because of their HIV status.

The results confirmed that internalized stigma does erode morale over time-even in this group of people who had already been coping with stigma and mental illness for years. The most consistently harmful consequences were those of alienation. People who experienced alienation related to their SMI were likely to deal with more distress, as their morale worsened further. This suggests that feeling different and divided from others may be a powerful component of internalized stigma. These results indicate an urgent need for social reform to reduce AIDS stigmas and the design of interventions to assist people living with HIV/AIDS to adjust and adapt to the social conditions of AIDS in Nigeria.

Conclusion

The stigma of mental illness is strong in our society and causes harm to many people with severe mental illness (SMI). The most obvious form of stigma is when people reject, put down, or discriminate against those with mental illness because of negative stereotypes. Previous research has found that when people with SMI believe recruited from AIDS services in Cape Town, South Africa. The anonymous was found to be 40% of persons with HIV/AIDS who had experienced discrimination resulting that most people reject and devalue people with mental illnesses, they may suffer a number of negative outcomes, such as demoralization, lowered self-esteem,

impaired social adaptation, unemployment, income loss and reduced psychiatric medication adherence. People with SMI who do not hold these beliefs as strongly suffer fewer of these negative consequences. It is important to recognize that the harmful effects of stigma may work not only through the external effects of discrimination by others, but also through the internal perceptions, beliefs and emotions of the stigmatized person.

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Appendices

A.

The Patient Health Questionnaire -9 (PHQ-9).

Over the last 2 weeks, how often have you been bothered by any of the following problems?		Not at all	Several days	More than half the days	Nearly every day
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3
3	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4	Feeling tired or having little energy	0	1	2	3
5	Poor appetite or overeating	0	1	2	3
6	Feeling bad about yourself-or that you are a failure or have let yourself or your family down	0	1	2	3
7	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8	Moving or speaking so slowly that other people could have noticed, or the opposite-being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9	Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
		Add columns:			
		0	±	±	±
		= Total Score:			

Scoring: 1-4: Minimal depression; 5-9: Mild depression; 10-14: Moderate depression; 15-19: Moderately severe depression; 20-27: Severe depression

B

The variables of social determinants of health.

SELF REPORTED ECONOMIC STATUS OF FAMILY

Poor

Average

Good

YEARS OF SCHOOLING

Below average (0 year)

Average 1-6 years

Above average 7 years and above

SOCIAL COHESION

Low 1-2 points

Fair 3-5 points

High 6-9 points

NEGATIVE LIFE EVENTS

> 3 2 1 0

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