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## The Relationship between HIV Knowledge and HIV Protective Behaviours among University In-Service Teachers

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### Abstract:

*This paper presents findings from a study that was conducted on a sample target population of 557 university teacher trainees in two universities, that is, Makerere University College of Education and External Studies in Uganda (MUCEES) and Dar es Salaam University College of Education (DUCE) in Tanzania. The purpose and objective of the study was to discuss the relationship between HIV knowledge and HIV protective behaviours amongst this population. The research participants who were selected using systematic random sampling were subjected to two types of research instruments, that is, the HIV knowledge (both general and comprehensive knowledge) scale and the HIV-protective behaviours scale. Data was analysed using Pearson Product Moment Correlation Coefficient. The findings show that although the relationship between HIV knowledge and HIV protective behaviours is positive, it is not statistically significant ( $p=0.942>0.05$ ). Hence, although an increase in HIV knowledge is related to an increase in HIV protective behaviours, the former is not a significant factor in explaining the latter. These findings contradict what the Social Exchange Theory (Hormans, 1993) advances, that is, basing on knowledge (HIV knowledge), people are bound to assess their behaviours basing on both projections and behavioural outcomes, which automatically influences the decisions they make about behaviour. This calls for more HIV sensitisation programmes and behaviour change strategies among young adults*

**Keywords:** HIV Knowledge, HIV related behaviours, Protective behaviours, General knowledge, Comprehensive knowledge

### 1. Introduction

Emerging adults in universities are vulnerable to HIV because they do not possess enough HIV knowledge and practice HIV non protective behaviours. The estimated HIV prevalence among university students is about 1.2 percent and although this prevalence is lower than prevalence rates at national levels, it is indicative of an increase from that of 0.6 percent in 2008, which represents a double increase in HIV prevalence rates within two years (East Africa Community /AMREF Lake Victoria Partnership Programme [EAC/EALP],2010). Young people, that is, both adolescents and young adults whose age range is between 14 and 25 years are the most affected (World Health Organisation [WHO], 2004), and as a result, they should be the focal population as far as the strategies to combat HIV are concerned.

Despite demonstrating high knowledge level about HIV, the results from a study on the assessment of HIV knowledge, attitudes and behaviours among students in higher education in Tanzania indicate that the although sexual behaviours among students in higher education, such as those in universities, are characteristically risky, they are not significantly different from the young people in the general population (Mkumbo, 2013). If the health goal is reduction in HIV vulnerability, Kirby (2008) proposes that HIV knowledge (both general and comprehensive) plays a big role in risk perception and perception of self-efficacy and may consequently impact on the overall HIV risky behaviours. Unlike popular beliefs on the relationship between sex and HIV education; and sexual activity, it should be noted that good quality comprehensive sex and HIV education programmes do not increase sexual activity. Instead, they are effective in decreasing sexual activity and consequently improving sexual health (Mkumbo, 2013). The larger population of young people in Uganda lack HIV comprehensive knowledge and specifically, for example, about 39 percent of young people between the ages of 15 to 24 years know the necessary facts about how HIV prevention measures, suggesting a need for more aggressive approaches to sex education (Plus News, 2012).

In the field of HIV prevention, there is a discrepancy between what people, especially the young people, know and what they actually do. Having comprehensive HIV knowledge does not automatically translate into practicing HIV protective behaviours. Risk perception also has ethical dimensions and yet individual judgement of what is ethical and the desire to achieve behavioural gratifications deepens further this knowledge-behaviour gap (Smith, 2003). It is further estimated for example that in Uganda, a small percentage of only 30 percent of young people aged 15 to 24 years know all the necessary HIV facts (AVERT, 2013). These could be facts such as the nature, causes, modes of transmission, symptoms, effects and prevention measures. While progress has been made in understanding the nature of HIV, there has been limited success in preventing transmission of the virus, especially among the youth. It is not enough to consider HIV knowledge when studying HIV vulnerability. Adequate HIV knowledge needs to be accompanied by modifications in both

sexual and non sexual behaviours to achieve a holistic intervention that includes HIV awareness, HIV knowledge, HIV attitudes and HIV related behaviours (Alexander & Uys, 2002). Hence, despite the fact that the young people especially young adults are knowledgeable about how to avoid HIV, there is no corresponding change in sexual behaviour.

The HIV non protective behaviours on the other hand may include sexual intercourse, unprotected sex, concurrent sexual partners, and alcohol and drug abuse, age of first sexual intercourse / early sex debut and exchange of sex for money. Sieving et al., (1997) argues that perceived vulnerability to HIV has a hinge on HIV protected behaviours. This implies that people who are involved in what is termed as HIV risk behaviours such as low rates of condom use and high levels of substance abuse do not usually perceive themselves at risk of contracting HIV yet their behaviours automatically expose them to possible HIV infection (Nunn et al., 2011). Therefore, for vulnerability to HIV infection to reduce, university teacher trainees who are deemed vulnerable to HIV infection by virtue of their social exposure and who ironically are being trained to handle the lives and behaviours of the younger generation in future through their teaching profession, must possess adequate HIV knowledge and practice HIV protective behaviours. A satisfactory HIV education programme should include information dissemination on HIV knowledge and HIV protective behaviours if university students are to be protected from HIV (Mkumbo et al., 2009).

The university social environment is one of the most exciting experiences for young people but with this excitement comes very unique difficulties (Abional & Balogun, 2010). There is a high prevalence of ignorance about HIV in many countries in Africa (EAC/EALP, 2010). HIV knowledge is an instrumental factor in HIV reduction through minimising HIV risky behaviours. According to Kirby (2008), knowledge influences risk perception which in turn influences behaviour control, thereby influencing the health goal of a reduction in the rate of HIV. Teacher trainees are the future ambassadors of upright behaviour (Nias, 1996). They uphold values and are perceived as people of great responsibility and must possess high HIV knowledge and portray positive behaviours that combat HIV. They are transmitters of values to the learners under their care and custodianship. They are expected to have adequate levels of HIV knowledge to be able to protect themselves against HIV and assist the learners under their care to uphold the same.

Theoretically, the study followed the Social Cognitive Theory (Bandura). According to this theory, knowledge enhances a high sense of the self and ultimately enables individuals to practice behaviours that reduce danger. In the context of this study, if young people in universities have adequate HIV knowledge, their sense of self is boosted and as a result, they are able to practice HIV protective behaviours that reduce their vulnerability to HIV infection. Because of this HIV knowledge, university teacher trainees may evaluate alternative courses of action and develop expectancies about the behaviour consequences, which in turn affect their decisions about their behaviour. Therefore, the study intended to examine the relationship between HIV knowledge and HIV protective behaviours among in service teachers.

## 2. The Study

The study was conducted with one major objective: to investigate the relationship between HIV knowledge and HIV protective behaviours among university teacher trainees at MUCEES and DUCE. It was necessary to run the measures for both general and comprehensive HIV knowledge and HIV related sexual and non sexual behaviours before proceeding to run the Pearson Product Moment Correlation Coefficient between HIV knowledge and HIV protective behaviours. The independent variable was HIV knowledge while the dependent variable was HIV protective behaviours.

## 3. Method

The study was purely quantitative, basing on the fact that the objective of the study aimed at correlating HIV knowledge with HIV protective behaviours, which necessitated statistical analysis. It was also a survey with cross sectional and correlation features, that is, studied the respondents at the same time.

The population was 557 in number, that is, 262 university teacher trainees from MUCEES and 295 from DUCE. This population was selected using systematic random sampling. Data was collected using HIV knowledge and HIV protective behaviour scales. From these subjects, 57.1 percent were male while 42.9 percent were female. The age of the subjects ranged from 21 years to 30 years.

HIV knowledge was measured using items related to HIV causes, modes of transmission and measures of prevention. Each item on the HIV knowledge scale was rated on a two point scale, that is, Yes/No response categories. On the other hand, items on HIV protective behaviours tackled debut of sexual intercourse, homosexuality/lesbianism, rape, number of sexual partners, frequency of sexual intercourse, unprotected sex, attitude towards virginity, alcohol consumption, drug abuse and prostitution. This was also rated on a two point scale, that is, Yes/No options. Data was analysed using Pearson Product Moment Correlation Coefficient.

## 4. Results

A Pearson Product Moment Correlation Coefficient was run to establish the relationship between HIV knowledge and HIV protective behaviours. This was preceded by statistics to indicate how the participants in both universities scored on each of the items measuring HIV knowledge. Table 1 shows the percentage of the respondents who responded correctly to items on HIV general knowledge.

	ECR	Percentage	
		DUCE	MUCEES
1. People can't get HIV by shaking hands	YES	96.6	98.1
2. HIV can't be transmitted from mother to child during pregnancy?	YES	43.1	38.2
3. Can people reduce their chance of getting HIV by abstaining from having sexual intercourse?	YES	89.5	94.7
4. People can't get HIV by sharing food with an infected person	YES	93.9	94.3
5. Can people get HIV by sharing needles for drug use with someone with HIV?	YES	93.6	97.3
6. People can't get HIV through kissing	YES	54.9	29.4
7. Can the HIV virus be transmitted from mother to child during delivery?	YES	96.9	97.3
8. Can HIV be transmitted from mother to child through breastfeeding?	YES	85.8	88.9
9. There NO vaccine available to protect people from contracting HIV	YES	72.9	65.3
10. Can people reduce their chance of catching HIV by using a condom each time they have sex?	YES	85.8	93.9

*Table 1: Percentage of Teacher Trainees Who Correctly Responded General HIV Knowledge Items  
ECR=Expected Correct Response*

From Table 1, it was noted that on the item that sought to establish if the respondents knew for sure that HIV can be transmitted from mother to child through breastfeeding, the response to this item was supposed to be in the affirmative, considering the fact that it is possible and more so if the nursing mother has bruised and bleeding nipples and/or any breast infection, and is not on anti retro viral therapy. This means that if a nursing mother doesn't have any of the aforementioned HIV-related conditions, infecting her baby through breastfeeding is minimal (WHO, 2015, Aidsmap, 2011). On this item, the teacher trainees at DUCE of Education who answered this item correctly were 85.8 percent while those at MUCEES were about 88.9 percent. This means that the majority of the respondents from both universities believe that HIV can be spread from mother to child through breastfeeding.

There was a large variation in HIV general knowledge between MUCEES and DUCE students on the item which sought to ascertain if HIV can be transmitted through kissing. The expected correct response was yes, but only 54.9 percent of the teacher trainees at DUCE responded to this item correctly while on the other hand, 29.4 percent of the teacher trainees at MUCEES got it right. The low performance on this item for the MUCEES teacher trainees could be attributed to lack of knowledge that it is only when the infected partner has bleeding gums or oral lesions that he/she can transmit HIV through kissing (CDC, 2016).

The university teacher trainees also performed averagely on item two which sought to establish whether or not HIV can be transmitted from mother to child during pregnancy and the expected correct response was yes. The findings show that student teachers from DUCE who got this correct were only about 56.9 percent while those from MUCEES with correct responses were 61.8 percent, which can be viewed as an average performance. During pregnancy, HIV can actually be transmitted from the expectant mother to the unborn child through what is known as prenatal HIV transmission (UNAIDS/WHO, 2000)).

It should also be noted that HIV general knowledge was tested by asking the respondents if HIV can't be spread through shaking hands. The expected correct response to this item was yes. The findings show that about 96.6 percent and 98.1 percent of the DUCE and MUCEES university teacher trainees answered the item correctly while an almost equally high number of respondents also correctly responded to the item that sought to ascertain if people can reduce their chances of getting infected with HIV by abstaining from sexual intercourse (about 89.5 percent from DUCE and 94.7 percent from MUCEES). About 89.5 percent of the DUCE respondents and 94.7 percent of the MUCEES respondents correctly responded to the item that aimed at ascertaining if HIV can be prevented by abstaining from sexual intercourse. Though this practice has been viewed as a difficult effort, at least the university students are aware that it is a preventive method as far as HIV is concerned.

The university teacher trainees who correctly responded to the item that HIV can't be transmitted through sharing food with an infected person were 93.9 percent from DUCE and 94.3 percent from MUCEES, which is an indication that on this item, their general HIV knowledge was very high. The university teacher trainees also performed high on general HIV knowledge as far as the item concerning if HIV can be transmitted through sharing needles for drug use. Those that got this item correct were 93.6 percent and 97.3 percent from DUCE and MUCEES respectively. An almost equal performance was observed on the item that sought to establish if the respondents knew if HIV can be transmitted from mother to child during delivery, since most of them, that is, 96.9 percent of the DUCE respondents and 97.3 percent of the MUCEES respondents. This may be due to the events that surround birth, such as exchange of blood between the mother and child (AIDS info, 2015). About 72.9 percent and 65.3 percent of the DUCE and MUCEES university teacher trainees seemed certain that there is vaccine to protect people from contracting HIV.

The percentage of student teachers who responded in the affirmative and correctly on the item that sought to establish if people can reduce their chances of getting HIV by abstaining from having sexual intercourse were 89.5 percent at DUCE and 94.7 percent at MUCEES. These scores are indicative of a high HIV general knowledge since it is indeed true that abstinence is the only surest way of protecting oneself from HIV infection amongst this population (Santelli et al., 2006). On the other hand, the university student teachers had high HIV general knowledge because the majority, that is, 93.6 percent from DUCE and 97.3 percent from MUCEES correctly know that an individual can get HIV by sharing needles for drug use with someone that has HIV since it involves exchange of infected blood (Meijerink et al., 2013). The respondents who correctly answered the item on HIV general knowledge that aimed at ascertaining if HIV can be transmitted from mother to child during delivery were 96.9 percent from DUCE and 97.3 percent from MUCEES. This is due to the fact that at birth, there is exchange of blood between the mother and child (AIDSinfo, 2016). Findings from the above HIV general knowledge items indicate that student teachers at MUCEES had higher knowledge than their counterparts at DUCE. The respondents were also generally aware that there is no vaccine available to protect people from contracting HIV, that is, 72.9 percent and 65.3 percent at DUCE and MUCEES respectively, since it is true there is no vaccine against HIV, despite numerous trials.

Lastly, as far as general HIV knowledge is concerned, the respondents were asked if people can reduce their chance of catching HIV by using a condom each time they have sex, and, 85.8 percent of the DUCE teacher trainees and 93.3 percent of the MUCEES respondents answered correctly and in the affirmative, meaning that on this item, their HIV knowledge was very high, although there is an 8.1 percent difference in HIV knowledge on this item between the university teacher trainees, whereby the MUCEES teacher trainees scored higher than their DUCE counterparts. Generally, the university teacher trainees at both MUCEES and DUCE scored highly on general HIV knowledge. All in all, it is observed that generally, general knowledge of HIV was high for the majority of the items since the average percentage for these items was 82.6 percent for DUCE student teachers and 91.6 percent for MUCEES student teachers, thereby indicating that despite a margin of 9 percent, the MUCEES respondents had higher HIV general knowledge than their DUCE counterparts.

The study also considered the responses on HIV comprehensive knowledge, which tackled items that reject common misconceptions about HIV such as HIV is spread by mosquito bites (TACAIDS et al, 2013) and appreciating faithfulness to one uninfected partner, condom use can help limit HIV infection and knowing that a healthy looking person can have HIV and vice versa for one that does not look healthy and disagreeing with the wide spread misconceptions that HIV can be transmitted through witchcraft and that there is a cure for HIV. The findings on correct responses on HIV comprehensive knowledge are shown in Table 2.

	ECR	Percentage	
		DUCE	MUCEES
1. There is NO cure for HIV currently	YES	91.2	93.1
2. A mosquito can't transmit HIV	YES	96.6	92.0
3. Can young people reduce their chance of getting HIV by having just one uninfected faithful sexual partner?	YES	77.3	79.8
4. People can't get HIV through witchcraft	YES	82.4	92.7
5. Can a healthy looking person have HIV?	YES	72.9	93.1

*Table 2: Percentage of Teacher Trainees Who Correctly Responded to HIV Comprehensive Knowledge Items  
ECR= Expected Correct Response*

From the observed percentage scores, the university teacher trainees who responded correctly to item 10, that is, "there is no cure for HIV currently," were 91.2 percent and 93.1 percent from DUCE and MUCEES respectively, implying that the MUCEES respondents scored higher than their DUCE respondents by a margin of 1.9 percent. About 285 DUCE teacher trainees, that is, 96.6 percent responded correctly as far as the item probing is a mosquito can't transmit HIV while this was also the case with 241 (92.0%) of the MUCEES teacher trainees.

However, a lower number of university teacher trainees correctly responded that young people can reduce their chances of getting HIV by having just one uninfected faithful partner, that is, 77.3 percent from DUCE and 79.8 percent from MUCEES. About 82.4 percent of the DUCE and 92.7 percent of the MUCEES respondents correctly agreed that people can't get HIV through witchcraft, and as far as whether a healthy looking person can have HIV, 72.9 percent of the DUCE respondents and 93.1 percent of the MUCEES respondents responded correctly, marking a relative variation of 21 percent between the two groups of respondents, with the MUCEES teacher trainees performing better than their DUCE counterparts.

The average percentage for correct responses on HIV comprehensive knowledge was 84.1 percent for DUCE and 90.1 percent for MUCEES. Still, the teacher trainees at MUCEES possessed higher HIV comprehensive knowledge than their counterparts at DUCE by a considerable margin of 6 percent.

According to this study, HIV related behaviour had two indicators, that is, sexual behaviours and non sexual behaviours. The sexual behaviour items included sexual intercourse (sexual activity, sexual intercourse in the last six months, sexual intercourse after taking alcohol, lesbianism/homosexuality, sex in exchange for money and gifts, and rape), while the non sexual but HIV risk behaviours included absence of individual HIV testing, absence of joint HIV testing,

attitude towards virginity, alcohol consumption and drug abuse). The observed scores from the HIV related behaviour items are shown in Table 3.

		University (%)		Mean	
		Duce	M Ucees	Duce	Mucees
1. Have you ever had sexual intercourse?	No	9.2	12.2	0.88	0.89
	Yes	90.8	87.8		
2. Have you ever had sex with a person of the same gender?	No	95.5	95.7	0.04	0.04
	Yes	4.5	4.3		
3. Have you ever been forced to have sex against your will?	No	80.2	71.7	0.2	0.28
	Yes	19.8	28.3		
4. Have you had sexual intercourse in the last six months?	No	17.9	25.2	0.82	0.75
	Yes	82.1	74.8		
5. I have NOT tested for HIV in the last six months	No	41.4	64.1	0.59	0.36
	Yes	58.6	35.9		
6. I and my sexual partner HAVE NOT tested for HIV together in the last six months	No	27.1	35.5	0.73	0.65
	Yes	72.9	64.5		
7. I Do NOT respect the virtue of virginity	No	74.9	76.7	0.25	0.23
	Yes	25.1	23.3		
8. Do you take alcohol when you go out with your partner?	No	80.0	72.9	0.2	0.27
	Yes	20.0	27.1		
9. Ever had sex after drinking alcohol?	No	75.7	76.5	0.24	0.23
	Yes	24.3	23.5		
10. Do you sometimes have sex in exchange for gifts and money?	No	80.6	89.1	0.19	0.11
	Yes	19.4	10.9		
11. Do you take drugs?	No	94.2	92.7	0.06	0.07
	Yes	5.8	7.3		

Table 3: Percentages on HIV-Protective Behaviours

Table 3 represents the findings on HIV protective behaviours, that is, behaviours that may increase or decrease this vulnerability.

Respondents from DUCE who reported that they have ever had sexual intercourse were 90.8 percent while those from MUCEES were 87.8 percent, implying that the former were more sexually active than the latter, hence more vulnerable to HIV infection as a result, than their MUCEES counterparts. As long as one has sexual intercourse, it is obvious that they have become vulnerable to HIV infection. Respondents were also asked if they have ever had sexual intercourse with a person of the same sex/gender (homosexuality for males and lesbianism for females). Contrary to the performance on the former item, the majority of the respondents from both universities reported in the reverse, that is, 95.5 percent of the DUCE respondents said No while those from MUCEES with the same negative view were 95.7 percent. On this item therefore, the results imply that the respondents were less vulnerable since to a larger extent, they were not involved in this type of sexual behaviour.

A total of 80.2 percent of the respondents from DUCE reported that they have never had sex against their will while those at MUCEES with the same experience were 71.7 percent. This means that rape was a rare experience in their lives, though this unfortunate experience was evident among 28.2 percent of the MUCEES respondents and 19.8 percent of those from DUCE have ever been raped or defiled (forced to have sex against their will), a statistic the researcher found disturbing. Also, the respondents were expected to respond to the question of whether they had ever had sexual intercourse in the last six months. Strange but true was the outcome that showed that in the last six months, 82.1 percent of the teacher trainees from DUCE and 74.8 percent of MUCEES respondents had had sex in the last six months, which marks a recency factor in sexual activity. This indicates that on the whole, they are currently sexually active.

Another expected marker of HIV vulnerability was HIV testing. It was assumed that those who had the habit of testing themselves for HIV were less vulnerable than those who didn't. From DUCE, only 41.4 percent compared to 67 percent of women and 50 percent of men in the general population (TACAIDS, 2015) had tested for HIV in the last six months compared to 64.1 percent from MUCEES compared to 65.8 percent of women and 44.9 percent of men. This is indicative of a lower HIV testing rate in comparison with the general population. But this also implies that MUCEES respondents, for some reason, have tested for HIV more than the respondents from DUCE, making the former less vulnerable than the latter. It was quite worrying to discover that a good percentage, that is, 58.6 percent from DUCE and 35.9 percent from MUCEES admitted to not having tested for HIV in the last six months, a statistic which indicates that as they went about their normal activities and even indulged in sexual activity, they were not aware of their current HIV status, hence they were highly vulnerable, since knowledge of HIV status is supposed to influence one's precautionary behaviour against possible infection.

HIV testing should be done as a couple and hence, respondents were also asked to report whether they had tested for HIV with their partner/s in the last six months. A total of 72.9 percent of teacher trainees from DUCE and 64.5 percent from MUCEES, which represents the majority of the respondents, confirmed that they had not carried out joint HIV testing, implying high vulnerability to HIV on this particular attribute. Joint HIV testing is a necessary step towards safeguarding oneself against infection, hence individual testing alone is useless if not accompanied by joint testing. Couple testing gives an avenue for self disclosure, support and risk reduction (WHO, 2012).

Virginity as a virtue represents abstinence from sex and as a strategy for lowering one's vulnerability to HIV. Respondents from DUCE who reported that they do not respect the virtue of virginity were 25.1 percent while those from MUCEES with the same inclination were 23.3 percent. Disrespect for this virtue or low score on it implies increased vulnerability to HIV. A total of 74.9 percent of the DUCE respondents reported that they respect the virtue of virginity, compared to their counterparts from MUCEES (76.7 percent). It should be noted that respect for such a virtue may not necessarily translate into being virgins since the same respondents reported to already being sexually active so this respect for the virtue of virginity simply remains theoretical. But it can also positively correlate with sexual behaviour (Ajzen & Madden, 1986). However, the average score for this item in both universities was 0.24; meaning high respect for virginity.

Alcohol consumption has been known to impair thinking, judgement and decision making (George et al., 2005; Anna et al., 2007). Respondents were asked if they take alcohol when they go out with their partner. Results show that 20 percent and 27.1 percent from DUCE and MUCEES respectively responded in the affirmative while the majority (80 percent and 72.1 percent from DUCE and MUCEES respectively). This statistical outcome may not necessarily be because they fear to contract HIV as a result of behaviours that might accompany alcohol intoxication, but due to religious, economic and social reasons. Most religions do not condone alcohol consumption and also, economic strains may not favour this behaviour since this would necessitate money which the university students might not have at their disposal. Respondents were also asked if they have ever had sex after taking alcohol. A total of 75.7 percent from DUCE disagreed while those with the same negative view at MUCEES were 76.7 percent. This implies that the minority, that is, 24.3 percent from DUCE and 23.5 percent from MUCEES were the only ones who have ever had sex after drinking alcohol. It should also be noted that 19.4 percent of the respondents from DUCE reported that they have ever had sex in exchange for money. This act of offering sex in exchange for money and gifts was also evident among 10.9 percent of the respondents from MUCEES, showing that on this item; the former respondents were more vulnerable to HIV infection since their score was higher than the latter. It was relieving to discover that the majority of respondents in both universities were not in the practice of exchanging sex for money and gifts, that is, 80.6 percent and 89.1 percent from DUCE and MUCEES respectively. Lastly, the respondents were asked if they take drugs. Only 5.8 percent and 7.3 percent from DUCE and MUCEES respectively answered in the affirmative. However, the majority of the university teacher trainees reported not to have been involved in drug use, that is, 94.2 percent from DUCE and 92.7 percent from MUCEES.

#### 4.1. Correlation between HIV Knowledge and HIV Protective Behaviours

The study considered lack of both HIV knowledge (both general and comprehensive HIV knowledge) and HIV protective behaviours (both sexual and non sexual behaviours) as the variables for the correlation. Therefore, the research also endeavoured to establish the correlation between HIV-related knowledge and HIV-protective behaviours. The findings on this relationship, which was computed using the Pearson product moment correlation coefficient, are presented in Table 4.

		HIV-Knowledge	HIV Related Behaviour
HIV Knowledge	Pearson Correlation	1	.003
	Sig. (2-tailed)		.942
	N	557	557
HIV Related Behaviour	Pearson Correlation	.003	1
	Sig. (2-tailed)	.942	
	N	557	557

Table 4: Correlation between HIV-Knowledge and HIV Protective Behaviours

Table 4 shows findings on the correlation between HIV-related knowledge and HIV protective behaviours. From the findings, there was a positive correlation between the two aspects of HIV, that is,  $r=0.003$ ,  $n=557$  and  $p=0.942$ . The positive correlation value is indicative of the fact that an increase in HIV-knowledge is related to an increase in HIV-protective behaviours, though this relationship is weak. However, this relationship was found to be non-statistically significant, that is,  $p$  value of 0.942 is greater than the significance value 0.05 at which the hypothesis was tested. Therefore, there is no statistically significant relationship between HIV-knowledge and HIV-protective behaviours among university teacher trainees.

## 5. Discussion

In this study, the hypothesis stated that there is no statistically significant relationship between HIV knowledge and HIV protective behaviours. The research findings revealed that the relationship between HIV knowledge and HIV protective behaviours is positive but not to a statistically significant extent. The Pearson product moment correlation

coefficient analysis revealed that HIV knowledge, which was marked by items related to causes, modes of transmission and measures of prevention of HIV, had a positive ( $r=0.003$ ) relationship with HIV protective behaviours, which was marked by both HIV sexual and non sexual behaviours. This led to the acceptance of the null hypothesis. This also means that an increase in HIV knowledge is related to a increase in HIV protective behaviours. These findings are parallel to other related studies conducted by Mkumbo (2013), Kirby (2008), Plus News (2012), Smith (2003), AVERT (2013), Alexander and Uys (2002) and Mkumbo et al., (2009) who argue that sexual behaviours among the young people such as those in this study do not significantly differ from those of the young people in the non academic environment, and that HIV knowledge reduces HIV vulnerability as moderated by protective behaviours and reduction of sexual activity and promotion of sexual health. HIV knowledge, to be an instrumental factor in HIV reduction must be accompanied by emotional intelligence, self efficacy, self esteem, HIV risk perception, behaviour modifications and decision making, and that all sexuality and HIV programmes should aim at targeting young people such as those in universities if this HIV is to be combated amongst this population.

## 6. Conclusion

In this paper, the relationship between HIV knowledge and HIV protective behaviours has been discussed. The teacher trainees at both universities were found to possess high levels of HIV knowledge (both general and comprehensive) but it was also observed that a large number of them practiced HIV non protective behaviours despite this knowledge. It was also established that there is a positive relationship between HIV knowledge and HIV protective behaviours.

## 7. Recommendations

This calls for training of university students in HIV knowledge/awareness, skills in both interpersonal (social) and intrapersonal (individual) life skills. Behaviour change programmes should also be encouraged and facilitated to bridge the HIV knowledge and HIV protective behaviours gap, in order to reduce HIV vulnerability among university teacher trainees.

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