

HIV&AIDS-Related Knowledge Among University Students: A Review

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Abstract: HIV&AIDS continues to pose a public health and developmental threat across the world, ever since it was discovered in 1981. Inadequate knowledge is one of the major barriers to prevention of the spread of HIV&AIDS. More than half of all of new HIV infections occur in young people. The objective of this study was to analyse the levels of HIV related knowledge among university students globally, with a focus on the Sub-Saharan Region. Various electronic databases were searched to review related studies on the levels of HIV and AIDS knowledge among university students. The overall results of the published articles that met the selection criteria showed that there are notable variations in terms of the levels of HIV& AIDS knowledge among the students. The disparities in the levels of HIV&AIDS related knowledge could be attributed to the inconsistencies in the research tools, sample size, academic year of the respondents, geographical locations, social, cultural, ethnicity factors, just to mention a few. This review has revealed that for similar studies in the future, it is important to assess the level of knowledge by using differing approaches that have the potential to provide a greater depth and breadth of information rather than utilizing singular approaches in isolation such as use of quantitative approaches only.

Keywords: HIV, AIDS, Awareness, Knowledge, University students.

1. INTRODUCTION

Human Immunodeficiency virus and acquired immunodeficiency syndrome (HIV&AIDS) have clocked four decades ever since it was first discovered in the United States in 1981. Since then, HIV&AIDS has spread rapidly throughout the world, and to date, there is no cure. As such, it continues to pose a public health and developmental threat across the world. HIV&AIDS has tremendous negative impacts on human health. Healthy is an integral component of human capital that facilitates the process of development. Diseases and economic outcomes are theoretically assumed to be inversely related. Diseases cause pain, suffering, fear, loss of working time, worry, and the breakup of families, disruptions in the life and welfare of the communities, costs of care, coping, and prevention, which are capable of depressing growth and development in the economy. Apart from the direct effect of HIV&AIDS on the health systems, there are significant implications for the economy through the loss of a productive workforce. HIV&AIDS has a direct impact on the labor supply through increased mortality and morbidity which is compounded by the loss of skills in all the key sectors of the economy [1]. It has been reported that in societies where HIV prevalence is high, economic growth rates have been reduced, life expectancy has been cut short, the rate of mortality increased, poverty level deepened, the number of orphans multiplied, business activities shrank, level of investment declined, public and private health expenditures increased, human resources destroyed, industry and agricultural sustainability hampered while household income levels reduced [2]. Studies have shown HIV&AIDS significantly retards economic growth, especially in developing countries with relatively high prevalence rates and low incomes. For instance, African countries in the sample that had an average prevalence rate of 8% were reported to experience a 0.7% decline in GDP [1].

Globally, 84.2 million people have become infected with HIV and 40.1 million people have died from AIDS-related illnesses, since the start of the epidemic (UNAIDS., 2022). AIDS deaths are further projected to reach 75 million by 2030, globally [2]. HIV&AIDS is one of the leading causes of morbidity and mortality globally, and particularly in this sub-Saharan Africa [2].

Although the pandemic has affected all regions of the globe, there are variations among regions on the level of burden of the pandemic [4]. Sub-Saharan Africa (SSA) remains the most heavily affected region of the world, accounting for approximately two-thirds of all incident and prevalent HIV infections and three-quarters of all AIDS-related deaths [5]. A global HIV&AIDS disease burden report published in 2022 shows that around 25.6 million of the 38.4 million people living with HIV in 2021 were from Sub-Saharan Africa which also happens to be the hardest-hit region worldwide (UNAIDS., 2022). Sub-Saharan Africa also accounts for two-thirds of the newly HIV-infected cases in the world, with more than half of all new HIV infections occurring in young people. The new infection rate is projected to rise from 250,000 in 2015 to nearly 400,000 among adolescents annually by 2030 if progress in reaching adolescents stalls globally (Kene et al., 2021).

Malawi is one of the Southeast African countries with the highest HIV prevalence rates among those aged 15 years and older. The 2020-2021 Malawi population-based HIV Impact Assessment (MPHIA 2020-2021) showed that the prevalence of HIV among 15 years and older in Malawi was 8.9%. This corresponds to approximately 946,000 adults living with HIV in Malawi. Further to this, HIV prevalence was higher among women (10.5%) than among men (7.1%). Regional and sub-regional level variations also exist in the prevalence of HIV in Malawi. This spatial analysis showed that the southern region is the worst hit at 13.3%, central at 9.0%, and North at 5.6%. Specifically, the south-eastern region that covers Zomba, Mulanje, Blantyre, Phalombe, and Thyolo have high HIV prevalence rates [7]. The high rates of HIV in the south-eastern region may result from a wide range of reasons that include cultural practices and low socioeconomic status.

Young adults, especially those between 15 and 24 years of age are the most vulnerable group to HIV infection [5]. Youth present specific challenges that predispose them to HIV, some of them being lack of correct health information, lack of access to adequate reproductive health services, economic exploitation, changing lifestyles, global conflicts, exchange of sex to meet their needs, and substance abuse. While the entire spectrum of young people is heavily affected by the pandemic, the degree of severity of their problem may vary depending on the cultural, social-demographic, political, and economic environments that they find themselves in [8].

In Malawi, apart from age, there are considerable variations in HIV prevalence by level of education. Although secondary or higher (tertiary) education is associated with reduced vulnerability to the risk of HIV infection, the 2020-2021 Malawi population-based HIV Impact Assessment (MPHIA 2020-2021) has shown that the prevalence of HIV among 15 years and older in Malawi with post-secondary education is at 5.5% which is still on the higher side. Worldwide, university students have of late deservedly received research attention due to the different circumstantial risks that they face. It is often argued that although the majority of university students are part of the 15-24 age group, due to their life circumstances their vulnerability to HIV while at university is uniquely high. Generally, the environment at universities is sexually permissive, since it is where young people from different backgrounds and sexual orientations meet and live together, often with little or no parental and administrative prohibitions [8]. Research suggests that universities are high-HIV-risk institutions for the transmission of HIV infections because of the predominance of risky sexual activities [8]. Again, university students are primarily prone to HIV, as more than half of all new infections worldwide emerge among youngsters. Several factors put university students at risk of HIV Infection. These include peer pressure, lack of maturity, alcohol and drug abuse, and a higher probability of high-risk behaviors such as unprotected sex [9]. They may also have shorter relationships and more partners and or engage in risky sexual behaviors.

Comprehensive knowledge where individuals know at least two major ways of preventing sexual transmission of HIV, enables people to assess their own risk and facilitates adoption of safer sexual practices. Comprehensive knowledge of HIV&AIDS also helps to reduce stigma and discrimination towards people infected and affected by HIV. Furthermore, comprehensive knowledge of HIV&AIDS helps individuals living with HIV to adhere to antiretroviral treatment [10]. Therefore, the importance of comprehensive HIV&AIDS knowledge in preventing HIV transmission cannot be overemphasized. Knowledge of one's HIV status is also extremely important for both prevention and

initiation of treatment. However, the UNAIDS estimates shows that only 10% of the population have access to HIV testing services in low-to-middle income countries. This poor access to HIV testing services is partially as a result of stigma and discrimination associated with HIV, which makes people unwilling to voluntarily avail themselves for HIV testing [11].

Prevention is the most important way to limit the spread of HIV, globally. A look at the infection trend and high-risk groups shows certain obstacles to the HIV prevention. HIV&AIDS awareness and how it is transmitted is one step towards its prevention. Coupled with prevention, knowledge regarding HIV&AIDS serve as a cornerstone in the fight against HIV. Adequate knowledge is a powerful way of promoting safe practices. However, appropriate knowledge about the various aspects of HIV&AIDS, on its own, does not lead to behaviour change, individual attitudes too, need to change [12]. For example, a study conducted in Botswana showed that half of the students could be perceived to be at risk of HIV, whilst the same participants thought that each sexually active student should be aware of his HIV status through regular testing [5]. Due to the fact that University students are significantly prone to HIV infection and as preventing it requires certain interventions, there is need to assess individual's knowledge and attitudes towards HIV&AIDS

Level of education is considered as one of the socioeconomic risk factors for HIV&AIDS-STI acquisition[13]. Compared with lower (primary) or no education attainment, secondary or higher (tertiary) education is associated with reduced vulnerability to the risk of HIV infection by 37% in the general population [14]. A study conducted among university students in Iran showed that despite the susceptibility of university students to high-risk behaviours, this population does not enjoy an adequate level of HIV&AIDS preventive programs [9].

In Malawi, there is paucity of published data on comprehensive knowledge of HIV&AIDS issues among University Students. This hinders effective prevention and control efforts. Despite efforts to implement HIV interventions in universities, this knowledge gap impedes the development and implementation of effective strategies to address HIV prevention, education, and support among this vulnerable population. To effectively combat the HIV epidemic in Malawi, it is crucial to assess and understand the current level of knowledge, perceptions, and response of university students towards HIV&AIDS, in order to inform the design and implementation of targeted and evidence-based interventions that address the specific needs and challenges faced by university students in the country.

Therefore, this study seeks to understand the levels of HIV&AIDS related knowledge among university students.

2. METHODS

A systematic review of related studies on the levels of HIV and AIDS knowledge among university students was done. Various electronic databases such as PubMed, Google Scholar, JSTOR, African Journals Online, Taylor & Francis, Science Direct and Directory of Open Access Journals (DOAJ) were searched to identify eligible published studies done in the past 10 years, globally and in the Sub-Saharan Region. The snowballing techniques by scanning references of relevant publications were also used to identify extra published studies. Search terms were used to develop a search strategy using the following keywords: ("HIV&AIDS related knowledge" OR "Comprehensive knowledge of HIV" OR "HIV&AIDS awareness") AND ("University students" OR "College students") AND ("globally" OR "Sub-Sahara" OR "Malawi"). Published studies were selected based on the following criteria: i) cross-sectional study design, ii) HIV&AIDS related studies, iii) assessing at least HIV-related knowledge, risk perception and attitudes towards HIV&AIDS among university and college students. If the study did not meet the above criteria, then they were rejected. The title and abstract of the articles were firstly explored to either accept or reject the full text examination.

3. RESULTS AND DISCUSSIONS

Initially, a total of 441 research abstracts were identified from various electronic databases. After further screening and removal of duplicates articles, the number was further reduced to 57 for review of full text. The excluded articles

were either not directly in line with this research or could not provide adequate results. A total of 13 full text academic articles were finally identified as meeting the selection criteria and in line with the present research. Table 1 summarises the findings of this review. According to the results, all studies assessed HIV&AIDS related knowledge, 11 among undergraduate university students and 2 among high school students. All the reviewed studies were conducted in a cross-sectional design and the sample sizes ranged between 140 to 2860. This review has shown that there are notable fluctuations in terms of the levels of HIV& AIDS knowledge among the students.

Table 1: Analysis of published research articles

No	Author	Year of study	Country of origin	Study Design	Sample size	Level of participants	Purpose of study	Findings	Study limitations
1	Abdulateef Elbadawi et al.	2016	Sudan	Cross sectional	556	3rd and 4th year University students	Assess HIV/AIDS comprehensive correct knowledge among Sudanese University	Whilst 97.1% ever heard about HIV&AIDS, 13.8% had comprehensive knowledge. Males showed better level of CCAK than females	Study conducted at 2 Universities only. Study lacked wider participation i.e. only 3rd and 4th year students participated. Only quantitative data collected. Questionnaire response rate was 74.13%
2	Oljira et al.	2013	Ethiopia	Cross sectional	2860	High School students	To assess the level of comprehensive knowledge of HIV/AIDS and the factors associated with it	24.5% of in-school adolescents have comprehensive HIV/AIDS knowledge. The knowledge was better among in-school adolescents from families with a relatively middle or high wealth index. Female students had less knowledge compared to the males.	Only targeted students while the school is wider community comprising of academic and non-academic staff. Only qualitative data was collected
3	Faimau et al.	2016	Botswana	Cross sectional	445	College students	to examine the knowledge of HIV and AIDS transmission and prevention among college students	although more than 90% of students correctly identified routes of HIV transmission, misconceptions regarding HIV/AIDS still exist e.g. HIV infection through witchcraft.	Not provided
4	Oppong Asante & Oti-Boadi	2013	Ghana	Cross sectional	324	Undergraduate university students	To evaluate HIV/AIDS knowledge among undergraduate students'	Mean score of 7.7 of 12 points (64.2%) A significant gender differences in HIV knowledge among university	Use of convenient sampling hence non-probability sampling technique used. Data analyses done based on a cross sectional data; therefore, causal interpretation of the results cannot be established.

								students, with females more knowledgeable than males.	
5	Dzah et al	2019	Ghana	cross-sectional	294	Senior High School students (15-24 yrs)	to investigate the knowledge, attitudes and practices regarding HIV/AIDS	61.6% had good knowledge about HIV/AIDS, 172 (58.5%) showed positive attitudes towards people living with HIV (PLHIV) and 79.1% reported HIVrelated risky practices.	study was restricted to only three schools in the western region of Ghana and all the participating institutions were boarding schools excluding form (grade level) three. This limits the generalisability of the current findings to other regions and today's SHSs.
6	Ntata et al	2008	Malawi	Cross-sectional study	314	First year university students	to determine distributions of HIV/AIDSrelated knowledge, and sexual behaviours.	68.9% of students felt that they knew enough about HIV/AIDS. 19.0% reported that they knew their HIV status. Most (68.4%) students felt that they were not at risk of acquiring HIV infection.	sample was not random, and we had a poor response rate among females, and as such our results may have poor internal validity.
7	Gemeda et al	2017	Dilla, Ethiopia	Cross sectional	441	University students	To estimate the level of knowledge, attitude and practice of HIV/AIDS among university students in Ethiopia	the level of HIV/AIDS knowledge, attitude, and practice were 53%,	The study was cross-sectional in design hence, causality cannot be established.
8	Dlamini et al	2022	Eswatini	Cross sectional	140	final year nursing students	provide information on the knowledge of final-year undergraduate nursing students in Eswatini universities.	87.1% knew that HIV and AIDS were not curable	A nonprobability convenience sampling method was used.
9	Abiodun et al.	2014	Nigeria	Cross sectional	1250	University students	to assess the level of HIV/AIDS knowledge	97.1% of participants having good knowledge of HIV/AIDS, with male students having better knowledge than females.	Study conducted in only one private faith-based university where Christian values are an integral part of learning and the use of self-reported data cannot ascertain accuracy

10	Chala Kene et al.	2021	Southeast Ethiopia	Cross sectional	442	Undergraduate university students	Assessing the level of knowledge of HIV&AIDS among University students	51.4% or respondents were knowledgeable about HIV/AIDS	Study was restricted to a local university which decreases representativeness and the study was a cross sectional hence difficult to ascertain a causal relationship
11	Kumwenda S et al.	2011	Malawi	Cross sectional	295	First year university students	to establish the existing knowledge, attitudes, beliefs and practices of students on HIV and AIDS and the existing risky behaviours.	Varying knowledge and practices about HIV/AIDS	Only one data collection tool was used (self-administered questionnaire). Non random sample, only first year students were targeted.
12	Andrew et al	2018	USA	Cross sectional	400	Undergraduate university students	to assess knowledge about HIV and AIDS among African-American undergraduate students	(96.5%) had good knowledge about HIV and AIDS, although some participants had misconceptions about the modes of HIV infection transmission	Study conducted from a single college, study design difficult to differentiate cause and effect from simple association.
13	Alhasawi et al.	2019	Kuwait	Cross sectional	346	High School students	To assess HIV related knowledge and attitude among high school students	93.9% of the respondents have good knowledge about HIV/AIDS	Small sample size

A study conducted among third-and fourth-year students from two Universities in Sudan, [15] showed that only 13.8% of students had comprehensive correct knowledge of HIV&AIDS and Males showed a better level of knowledge than females. A similar study that was done in Eastern Ethiopia [16] also showed a low rate in that only 24.5% of high school adolescents had comprehensive HIV&AIDS knowledge, yet two other studies done in Ethiopia as well at Dilla University [17] and Southeast Ethiopia [18] showed a slightly higher result of 53% and 51.4% respectively, in the levels of HIV knowledge. The difference in the three study outcomes done in Ethiopia can to some extent be due to methodological differences or assessment tools used. For instance, the study conducted in Eastern Ethiopia defined “comprehensive knowledge”, whereas the study conducted at Dilla and Southeast Ethiopia measured knowledge of HIV&AIDS using general awareness questions. Further to this this, the study conducted in Eastern Ethiopia had a bigger sample size of 2860 unlike the studies done at Dilla and Eastern Ethiopia Universities which had sample sizes of 441 and 442 respectively. Again, female students were less likely to have comprehensive HIV&AIDS knowledge compared to the males, in the eastern Ethiopia study. In Botswana, a study conducted by [19] revealed that more than 90% of the students had fairly good background knowledge of the facts relating to HIV&AIDS infection. In some other research in Ghana, [20] established the mean score of the participants responses to 12 HIV&AIDS knowledge questions to be at 7.7 and thus 64.2% while [21] established that 61.6% of high school students had good knowledge about HIV&AIDS. However, the former study used convenient sampling which might have affected the overall results. In Eswatini [22] found that 87.1% of final year undergraduate nursing students knew that HIV and AIDS were not curable. However, a nonprobability convenience sampling method was also used which could have impacted on the overall results. Similarly, a study conducted in Nigeria [23] showed 97.1% of participants having good knowledge of HIV/AIDS, with male students having better knowledge than females. This Study was conducted in only one private faith-based university where Christian values are an integral part of learning hence the use of self-reported data cannot ascertain accuracy. In USA, a study conducted at a historically black college and university [24] showed that 96.5% of the students had good knowledge about HIV&AIDS, where as in Kuwait, [25] a similar study among high school students indicated that 93.9% of the respondents have good knowledge about HIV&AIDS. Some

studies specifically done in Malawi were also reviewed. Due to the paucity of recent published studies on the levels of knowledge of HIV&IADS issues among University Students in Malawi, studies published from 2008 were considered for this review. [26] found that 68.9% of students felt that they knew enough about HIV/AIDS. In this study, there was no significant differences in HIV&AIDS related knowledge between male and female students. Moreover, the study sample was also not random, and had a poor response rate among females as such the results may have poor internal validity. Similarly, a study conducted to first year Malawi Polytechnic students [27] revealed varying knowledge levels and practices about HIV&AIDS. However, this study lost some power since only one data collection tool was used (self-administered questionnaire), the sample was non-random and only first year students were sampled.

In the light of the research articles reviewed, there are different levels of HIV&AIDS related knowledge among students. These differences could be attributed to the inconsistencies in the research tools, sample size, length of stay at the institution, academic year of the respondents, geographical locations, social, cultural, ethnicity factors, and many more.

CONCLUSION

This study has found that the mean level of HIV&AIDS knowledge among University students is not universal, and thus it varies among universities. For instance, studies from Historically Black College among African-American undergraduate students' university, (America) reported a high (96.5%) level of knowledge whilst Dilla University (Ethiopia) reported a relatively low (53%) level of knowledge. Such disparities in the levels of knowledge could be attributed to the differences in the study methodologies, sample size, research tools used, exposure to HIV&AIDS awareness sessions, just to mention but a few. As such for similar studies in the future, it is important to assess the level of knowledge by using differing approaches that have the potential to provide a greater depth and breadth of information which is not possible when utilizing singular approaches in isolation such as use of questionnaires only.

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DOI: <https://doi.org/10.15379/ijmst.v10i2.2801>

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