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HIV PrEP, Associated Risk Behaviour and Practices Among University Students; A Case of Nkrumah University

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Abstract

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Background: The use of Pre-exposure prophylaxis to prevent HIV infections has become widespread, so are concerns that PrEP leads to risky behaviour that can results into infections. While it is standard protocol for the healthcare personnel to conduct routine HIV screenings, no standardized procedure for educating people exists. PrEP gives an opportunity for adolescents and young adults to access a prevention option that respects their particularities and vulnerabilities. The objective of the study was to assess the Knowledge, Attitudes and Practices of students towards PrEP and if it is associated health risk behavior

Methods: A cross sectional quantitative research design was used to determine the knowledge, attitudes and practices of students towards PrEP and its' associated risk behaviour using a self-administered questionnaire. The data was analyzed using a computer Soft-Ware-Statistical Package for Social Sciences. The sample size was 367 students of Nkrumah University student in Central Province

Results: There is an existing gap in comprehensively knowing and understanding PrEP and guidelines. About 36.8% of the respondents indicates they had poor knowledge on PrEP further, the results indicate 61% of the respondents had general negative attitude towards PrEP.

Conclusion: More effort by government and stakeholders is needed to educate and inform students on PrEP. There is need to establish ways of dispelling myths and improve the perception towards PrEP thus reducing stigmatization.

Keywords: *PrEP, student, HIV, knowledge, attitude, behavior*

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INTRODUCTION

Whereas the use of pre-exposure prophylaxis (PrEP) to prevent HIV infection has become more widespread among most population in recent years, concerns that PrEP uptake may be associated with health risk behavior. [1]. PrEP offers an exciting opportunity for adolescents and young adults such as college students to access a new prevention option, respecting their particularities and vulnerabilities. A current report that was published by UNAIDS, revealed that since 2010, the annual number of new infections (all ages) has declined from 2.1 million to 1.7 million, a 16% reduction that leaves the world far off the 2020 target of fewer than 500, 000 new infections. [2].

In response to HIV epidemic, the Zambian's government has focused its efforts on both short-term and long-term efforts of fighting the pandemic. The Zambia's National HIV and AIDS Strategic Framework (NASF) 2017-2021 recognizes the need for PrEP to be provided to at-risk populations. However, a gap still exists with regard to guidance on how PrEP should be implemented and put into practice. National guidelines on PrEP exist but implementation linked to an enabling environment for certain key populations is currently lacking (NAC/UNAIDS, 2017). [3,4] The PrEP against HIV is available for people who are at risk of acquiring HIV infection and are not positive for HIV infection [5]. However, lack of knowledge or due to attitudes, people at risk may misuse or underutilize thereby increasing the risks of been infected.

While PrEP can provide very effective protection against HIV, it does not provide protection against other sexually transmitted infections (STIs) and blood-borne illnesses. [6]. The effectiveness of PrEP is also largely dependent on adherence, defaulting of PrEP regularly may increase the risk of contracting HIV infection substantially. It is therefore important that the users of PrEP are provided with the right information and knowledge needed.

METHODS AND MATERIALS

A cross sectional quantitative research design was used. The analytical study design was employed to determine the relationship of students' knowledge, attitude and practices and associated risk behaviour. The study population included 4500 students of Nkrumah University. The estimated sample size was calculated using formula n= N/1+N (0.05)2, giving 367 participants selected from the full-time students.
A simple random sampling method was used to select participants. A self-administered questionnaire was used to collect data which was then analyzed using SPSS to get the frequency distribution, chi square test, cross tabulation.
Data management and quality control was employed by checking for completeness, consistency and accuracy. The data acquired was validated and protected, access was limited to intended users. Ethical Considerations was employed cleared by the University of Lusaka ethical committee with code IORG0010092/MPH18213829. The principles of beneficence, respect for human dignity were employed. The respondents' right to self-determination was honored. The respondents' privacy and right to anonymity and confidentiality were respected at all times.

RESULTS

A total of 367 students of were recruited in, 55.3% were male. The age distribution shows that, more students were in the age category of 18 to 24 amounting to 51.0%, with the least in the 32 to 38 age categories with 2.2 %. The table further, respondent's marital status shows that majority of the students are single amounting to 71.9%. When respondents were asked about their year of study, the table shows that 4th year students were the majority participants with 52.3%.

Students' Knowledge about PrEP

Table 2 shows information about the students' knowledge on PrEP. 63.2% participants reported to have heard of PrEP. While 74.6% of the students refused to have knowledge of any students using PrEP. Majority of participants reported that students had no sufficient knowledge on the use of PrEP with 68.7%. However, among the total participants, 54.5% agreed that it is right for students to use PrEP.

Table 1: Students' Knowledge about PrEP

Statement	Yes (%)	No (%)	Don't know (%)
1. Have you ever heard of PrEP?	232 (63.2)	134 (36.5)	1 (0.3)
2. Do you think students at this college have sufficient knowledge on the use of PrEP?	100 (27.2)	252 (68.7)	15 (4.1)
3. Do you think it is right for students to use PrEP?	200 (54.5)	150 (40.9)	17 (4.6)
4. Do you know of any students using PrEP?	74 (20.2)	274 (74.6)	19 (5.2)

According to table 3, 55.6% of the participants agreed that one needs to be tested for HIV before receiving PrEP medication. 51.8% of the students also agreed that PrEP refers to antiretroviral (ARV) medication used to prevent HIV infection. While 49.9% participants reported that PrEP helps prevent the transmission of HIV and 45.8% reported that PrEP is medication given to HIV negative people to prevent acquisition of HIV before been exposed to HIV. However, some students do not know if PrEP can prevent the transmission of STIs accounting for 49.3%.

Table 2: Students' Knowledge about PrEP

Statement	True (%)	False (%)	Don't know (%)
5. PrEP refers to antiretroviral (ARV) medication used to prevent HIV infection	190 (51.8)	48 (13.1)	129 (35.1)
6. PrEP is medication given to HIV negative people to prevent acquisition of HIV after been exposed to HIV.	168 (45.8)	62 (16.9)	137 (37.3)
7. You need to be tested for HIV before you can receive PrEP medication	204 (55.6)	40 (10.9)	123 (33.5)
8. PrEP helps prevent the transmission of HIV?	183 (49.9)	74 (20.2)	110 (30.0)
9. PrEP can prevent the transmission of STIs	71 (19.3)	115 (31.3)	181 (49.3)

Table 3 presents the statistically significant differences in knowledge among the students according to the year of study. The results of inferential statistics indicated no significant difference in knowledge by gender. Responses to nine of the knowledge statements were however statistically different by year of study. Significantly higher rates of agreement with statements on whether students have ever heard about PrEP, students have sufficient knowledge on the use of PrEP and knowledge of any students using PrEP were highest among 4th year students as compared to the 1st, 2nd and 3rd year students. The results further showed that fourth year students had shown significantly higher rates of agreement with statements on one needs to be tested for HIV before receiving PrEP than students in respective years. However, gender of the university students did not have significant influence on the level of knowledge about PrEP, P-value < 0.05.

Table 3 Differences in knowledge among the students according to their year of study

Year of Study	YES	NO	Don't Know	X^2	P-value
Statement: Have you ever heard of PrEP?					
1st year	13	9	-	13.192	0.04
2nd year	55	29	-		
3rd year	37	21	1		
4th year	127	65	-		
Statement: Students at this college have sufficient knowledge on the use of PrEP					
1st year	8	24	-	19.777	0.00
2nd year	20	63	1		
3rd year	28	28	3		
4th year	44	137	11		
Statement: Do you know of any students using PrEP?					
1st year	9	23	-	15.440	0.02
2nd year	19	64	1		
3rd year	16	42	1		
4th year	30	145	17		
	TRUE	**FALSE**	**Don't Know**	**X^2**	**P-value**
Statement: PrEP refers to antiretroviral (ARV) medication used to prevent HIV infection					
1st year	11	2	19	14.910	0.021
2nd year	34	71	2		
3rd year	13	64	25		
4th year	5	22	2		
Statement: PrEP is medication given to HIV negative people to prevent acquisition of HIV after been exposed to HIV.					
1st year	11	2	19	16.663	0.01
2nd year	50	9	25		
3rd year	23	12	24		
4th year	84	39	69		
Statement: You need to be tested for HIV before you can receive PrEP medication					
1st year	12	1	19	19.015	0.00
2nd year	55	4	25		
3rd year	36	6	17		
4th year	101	29	62		
Statement: PrEP can prevent the transmission of STIs					
1st year	2	9	21	25.299	0.00
2nd year	31	19	34		
3rd year	11	19	29		
4th year	27	68	97		

Note: X^2 =Chi Square value; DK= Don't know

Figure 1 shows the overall means of the respondents' knowledge of PrEP. 36.8% of the respondents shows that they have poor knowledge about PrEP, while 29.2% shows that they have good knowledge about PrEP and 34% reported to have excellent knowledge on PrEP.

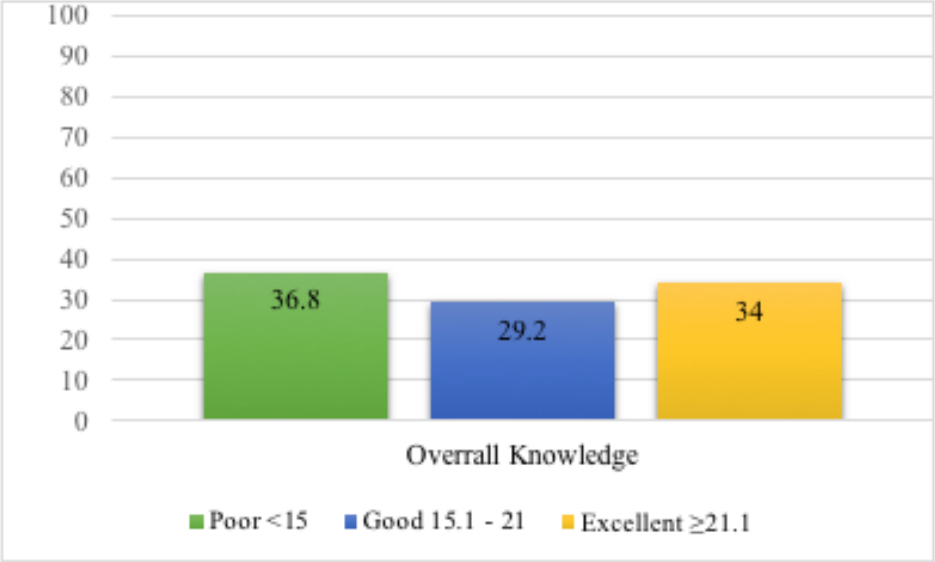

Figure 1: Mean scores of respondents' knowledge towards PrE

Students' Attitude towards PrEP

Table 4 demonstrates students' attitude towards PrEP and table 6 gives information on the reason why students wouldn't use PrEP. Of the total study participants, 68.9% agreed that all the students should have access to PrEP. Many students also agreed that they would prefer to use PrEP after sex with 64.6%, while 61.3% reported that they could encourage other students that are sexually active to use PrEP and those who agreed to use PrEP as an HIV prevention measure accounted for 53.7%. However, some students mentioned that they would prefer to use PrEP before sex (30.0%). Regarding to the reasons why the students would not use PrEP, some respondents reported that because of the fear of possible side effect accounting for 26.4% while those who reported fear of stigmatization were 17.2% PrEP

Table 4: Students' Attitude towards PrEP

Statement	Yes (%)	No (%)	Don't know (%)
1. Would you use PrEP as an HIV prevention measure?	197 (53.7)	160 (43.6)	10 (2.7)
2. Would you encourage other students that are sexually active to use PrEP?	225 (61.3)	120 (32.7)	22 (6.0)
3. Should all the students have access to PrEP?	253 (68.9)	90 (24.5)	24 (6.5)
4. Would you prefer to use PrEP before sex?	110 (30.0)	187 (51.0)	70 (19.0)
5. Would you prefer to use PrEP after sex?	237 (64.6)	30 (8.2)	100 (27.2)

Practices and Attitude of students and risk behaviour associated with PrEP.

Table 5 presents information on the practices of students and risks behaviour associated with PrEP among students. 56.9%of the respondents reported that even if one is taking PrEP, it is not right to keep having multiple sexual partners. Further some students reported not to know if it is necessary to use other HIV prevention methods such as condoms when having sex with someone who is taking PrEP accounting to 53.8%. Nonetheless, some students also agreed that it is necessary for one to strictly follow the prescribed guidelines when taking PrEP with 53.7%. Further,

some respondents said that PrEP can be useful to those couples who are unable to convince their partners into using other HIV prevention measure such as condoms with 52.6%.

Table 5: Students' practices and risk behaviour associated with PrEP

Statement	Yes (%)	No (%)	Don't know (%)
1. When one is taking PrEP, is it ok to keep multiple sexual partners?	38 (10.4)	209 (56.9)	120 (32.7)
2. Do you think it is necessary for one to strictly follow the prescription guidelines when taking PrEP?	197 (53.7)	58 (15.8)	112 (30.5)
3. Is it necessary to use contraceptives when having sex with someone who is taking PrEP?	129 (35.2)	40 (10.9)	197 (53.8)
4. Do you have any difficulties in accessing PREP?	104 (28.4)	185 (50.5)	77 (21.0)
5. Will PrEP be useful to those couples unable to convince their partners into using other HIV prevention measures such as condoms?	192 (52.6)	142 (38.9)	31 (8.5)

Table 6 shows the respondents responses with True/False/Don't know statements. Some respondents agreed that students fear talking about PrEP because of stigma accounting for 51.0% and further the table shows that, it is important to practice safe sex even when one is taking PrEP with 48.6%. However, 61.7% reported that they did not know whether drugs and alcohol consumption affect ones use of PrEP.

Not shown is the overall mean scores of respondents' attitude towards PrEP, which is 61% as sign of negative attitude towards PrEP

Table 6: Students' practices and risk behaviour associated with PrEP

Statement	True (%)	False (%)	Don't know (%)
1. It is important to practice safe sex such as the use of condoms even when one is taking PrEP.	178 (48.6)	41 (11.2)	147 (40.2)
2. Students fear talking about PrEP because of stigma.	186 (51.0)	143 (39.2)	36 (9.9)
3. Drug and alcohol consumption does not affect ones use of PREP	31 (8.5)	109 (29.8)	226 (61.7)

Association between attitude, religion and marital status regarding accessibility to PrEP.

Table 7 presents the relation between students' marital status and if they think, students should have access to PrEP. It is important to note that majority of the students who reported to be single also said yes to students having access to PrEP. However, we had a good number of cohabiting students who reported that students must not have access to PrEP. Statistically there is significant association between marital status and if students should have access to PrEP among the students.

Table 7; Relationship between students' marital status and accessibility to PrEP

Marital status	YES	NO	DK	X^2	P-value
Statement: students access to PrEP					
Single	136	123	5	30.727	0.0001
Cohabiting	56	21	3		
Married	5	7	2		
Separated/divorced	-	8	-		
Widowed	-	1	-		

DK=Don't know, X^2 = Chi Square

DISCUSSION

In this study, the results showed that students generally had poor knowledge about PrEP. Further the results showed a negative attitude towards PrEP. More than half of the students reported that they had heard of PrEP, they further reported that many have insufficient knowledge on the use of PrEP and how it is used as compared to another study among Women in New York City revealed that the 74% of the participants and 57% of staff members of the health care facility had not heard about PrEP before participating in the study [10]. It is worth noting that fourth year students showed better knowledge of PrEP than those who were in lower academic years. However more than half of the students agreed that it is right for students to use PrEP as HIV prevention measure. It is important to note that, health facilities recorded the highest source of information for most of the students. More than half of the participants agreed that one needs to be tested for HIV before receiving PrEP medication. However, when respondents were asked to define what PrEP is, more than half agreed that PrEP refers to antiretroviral (ARV) medication used to prevent HIV infection. While almost half of the participants agreed that PrEP helps prevent the transmission of HIV and further reported that PrEP is medication given to HIV negative people to prevent acquisition of HIV before being exposed to HIV. However, only a few students reported that it is true PrEP does not prevent the transmission of STIs accounting.

More than half of respondents said they would recommend PrEP to other students. A very small fraction of respondents reported that they don't know if they could recommend PrEP to sexually active students. Close to half of the respondents said they could not use PrEP as an HIV prevention measure, when asked further why, the respondents reported that fear of possible stigmatization while a few others said they feared possible side effects. When respondents were asked what they thought about all students having access to PrEP, a few said no, suggesting the need to improve on the information about PrEP and its importance in the fight against HIV. The findings of the study generally indicated a negative attitude towards PrEP which is different from what was found in another study conducted among student nurses who showed that they had a neutral opinion for their attitudes towards PrEP [12].

When respondents were asked if it is important to practice safe sex when one is taking Prep, almost half of the participants said yes, further majority of the student did not know if drugs and alcohol consumption affects the uptake of PrEP. Adherence to any drug is important and alcohol or drug use can have effects on ones use of PrEP, more than half of the students reported that they did not know whether drugs and alcohol consumption affects ones use of PrEP. It is therefore important that emphasis is placed on the adherence to the regulations and guidelines given by health experts, as well as informing them on better practices that reduce on the level of one's exposure to contracting the virus.

Slightly above half of the respondents reported that they did not know if drug and alcohol consumption does not affect ones use of PrEP. Alcohol consumption whilst taking drugs can affect adherence to the drug and also affect the effectiveness of the drug. PrEP on its own does not prevent one from contracting other sexually transmitted diseases, when respondents were asked if PrEP can protect them from contracting other sexually transmitted diseases close to half of the respondents said they did not know. When respondents were asked if it is necessary to use a condom even if when is taking PrEP, majority of the respondents said yes. Comparing this to a similar study conducted on men who have sex with men, the findings of the study indicated that, the proportion of men with no condomless anal

sex partners dropped from 60.6 % in 2004, to 58.2 % in 2008, to 54.2 % in 2011, to 40.2 % in 2014. Consistent condom use decreased from 36.8 % in 2004, and 30.5 % in 2008 and 2011, to 18.3 % in 2014. PrEP's introduction and scale-up enters in a pre-existing trend of decreasing condom use and increasing sexually transmitted infections among MSM which may be accelerating in recent years. While PrEP use should be scaled up as a prevention option among those who would benefit most, we believe that public health officials need to be realistic about the possibility that condom use could very well continue to decline as PrEP use increases, and to an extent that may not be directly or indirectly offset by PrEP [11, 12, 13]. The study further established that cultural factors could be among the reasons why most of the students cannot use PrEP, acceptability of the drug greatly influences the level of use among students, majority of the students don't know about the drug as an accepted HIV prevention in the community and hence it has generally affected their level of use.

CONCLUSION

The negative attitude among students are somewhat related to the fact that, students do not have sufficient knowledge of the use or even the existence of PrEP for HIV prevention. Therefore, if more sensitization and awareness campaign are done on the use and importance of PrEP especially among students, it would greatly improve usage of the drug and in the long run reduce on the number of new infections. Emphasis in the information been disseminated on PrEP should also cover adherence to the drug by all users if it has to be effective in the prevention of HIV transmission.

DECLARATION

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