Uptake of HIV testing and counseling among tertiary institution students in the Hohoe Municipality, Ghana

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Abstract

HIV Testing and Counselling (HTC) is a critical strategy to reduce the rate of new HIV infections and the key entry point to HIV treatment, care and support services. This study aimed to determine the uptake of HTC among students of tertiary institutions in the Hohoe Municipality of Ghana. This was a quantitative cross-sectional study. A structured questionnaire was used to collect data among a proportionate stratified sample of students from tertiary institutions. Chi-square and Logistic regression analyses were performed using Stata version 12.0 at the 0.05 level of significance. Only 30.6% of the total respondents had ever tested for HIV/AIDS of which, only 22.9% tested less than 6 months before the current study. Students above twenty-four years of age were 3 times more likely to go for HTC than those below 20 years [OR=2.56 (95% CI: 1.07-6.11; p=0.034)]; those in the fourth year of study were 3 times more likely get HTC than those in the first year [OR=3.05 (95%CI: 1.10-8.49; p=0.033)]; and those attending THERESCO, the Midwifery training college and UHAS were more than 2 times more likely to get tested for HIV than those attending FRANCO [OR =2.67 (95% CI: 1.14-6.15; p=0.024)], [OR=2.40 (95% CI: 1.04-5.54; p=0.040)] and [OR=2.63 (95% CI: 1.13-6.13; p=0.026)] respectively. The uptake of HTC among tertiary institution students in Hohoe municipality was considerably low. Policymakers should design programs and interventions that would increase uptake of HTC among tertiary students, with focus on those aged less than 20 years, those at the lower level of study and those in the non-health related institutions.

Introduction

To increase the uptake of HIV Testing, several models suiting individual and provider's needs such as HIV testing and counseling (HTC), provider-initiated testing and counseling (PITC), home-based HIV counseling and testing (HBCT) and HIV self-testing, have been adopted overtime.[1] HIV testing and counseling is the most common mode globally[1] and plays a link between prevention and mitigating activities. For those who are still HIV negative, HTC can be an incentive to change high-risk sexual behavior; while for those who are already positive, it can serve as a link to care, support and treatment options.[2]

Over fifty percent of all HIV cases globally are among young people aged 10–24 years.[2] It was noted that the high likelihood of acquiring HIV among youths is in contrast with their low intake of HIV testing.[3] According to a sub-Saharan Africa (SSA) survey, only 10% male and 15% female aged 15–24 years know their HIV status, implying that majority of young people in this age group are undiagnosed of HIV, thus exposing them to a high risk of either acquiring or transmitting the disease.[3]

There are increasing efforts to increase adolescents' utilization of HTC services; however, its utilization in Ghana in the general population remains low.[4] In 2008 in Ghana, the percentage of people who had ever been tested in the age range of 15-49 was 21% for female and 14% for males.[5] Reasons for this low uptake of HTC services include emotional impact experienced by those tested positive[6]; fear of positive results and HIV-related stigma;[6,7] lack of confidentiality, cost of testing and individual's baseline socioeconomic conditions;[8,9] coercion from healthcare providers, low-quality counseling components and low effectiveness in facilitating linkages of HTC to care.[10] This low HTC uptake implies that a vast majority of youths, including those already infected with HIV, ignore their HIV status. [11]

The university students' population in Ghana falls in the 15-24 age group peculiar among the youth concerning HIV transmission and HTC uptake for several reasons. The students' lifestyle exposes them to high vulnerability to HIV. The university environment[12] combined with peer pressure on students to get involved in transactional sex relations in exchange for money,[13,14] promote sexual activity among the student population. Furthermore, students as any other youth between the ages of 15 and 24 years represent the highest risk group to get infected with HIV.[15]

Although the increasing number of testing sites that followed the rollout of antiretroviral (ARV) program across Africa, increased HTC uptake as an entry point to HIV care, HTC uptake remains low in several African countries. The percentage of youth who went for HIV testing was 21.6% in Metropolitan Kumasi, Ghana,[16] same level in Kenya,[17] 26% in Ethiopia[18] and 18% in South Africa.[19]

A recent review of demographic and health surveys of 4 countries in Africa (Congo Brazzaville, Central Africa Republic, Mozambique and Nigeria) among 23,367 male and female respondents aged 15-24 years showed that only 36.5% of youth has ever been tested for HIV.[20] Furthermore, studies aimed at increasing awareness to get tested among participants led to a high willingness to get tested among participants.[21] Paradoxically, the high willingness to get tested for HIV does not automatically translate to actual testing.[21-23]

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Key words: HTC uptake, knowledge, students, tertiary institutions, Hohoe, Ghana.

Acknowledgements: The authors wish to thank the research participants who accepted to be part of this research endeavor.

Contributions: EA and ET conceived the research idea, wrote the protocol and carried out the data collection. EA, LP, PL, DAA and ET wrote and critically reviewed versions of the manuscripts. All authors read and agreed on the final version of this manuscript.

Conflict of interest: The authors declare no potential conflict of interest.

Funding: None.

Received for publication: 5 February 2019.
Revision received: 2 August 2019.
Accepted for publication: 17 August 2019.

Journal of Public Health in Africa 2019; 10:1044
doi:10.4081/jphia.2019.1044

Others studies conducted in public, as well as private universities in Accra and Kumasi (Ghana), reached the same conclusion regarding the low HTC uptake in Ghana.[15,24] Knowing routes of HIV transmission[15], age, gender, place of residence, perceived susceptibility to HIV,[25] having multiple sexual partners, practising unprotected sex and being aware of HTC services[26] are associated with a high HTC uptake. Inversely fear, being uninformed about HTC, and low HIV risk perception are associated with not getting tested.[1]

There is no information about HTC among the general population in Hohoe municipality regarding either the HTC uptake or factors that are driving the testing; more so, among university youth studying in the municipality. We doubt if the information found on HTC services use among university students in Accra[15] and Kumasi[24] could be valid for students in Hohoe municipality. Moreover, this municipality has an HIV prevalence of 3.4%, which is higher than the Ghana national HIV prevalence of 1.7%,[27] and no study has been conducted on the subject matter in this site. Such information can help in tailoring Hohoe-specific message that could increase the uptake of HTC in this Municipality. Therefore, we conducted this study aimed at determining the level of HTC uptake and to explore factors associated with HTC uptake among university students in Hohoe Municipality, Ghana.

Materials and Methods

Study site description

The study was conducted in the Hohoe Municipality of Ghana, specifically the tertiary institutions in the municipality. The municipality is one of the twenty-five municipalities and districts of the Volta Region of Ghana. It has its administrative capital at Hohoe. The population of the municipality according to 2010 population and housing census stands at 167,016 with 79,967 males and 87,049 females.[28] It has 4 tertiary institutions: 1 university (the University of Health and Allied Sciences [UHAS]), and 3 colleges (Midwifery Training College, St. Theresa's College of Education [THERESCO] and St, Francis College of Education [FRANCO]). The university is owned by the Ghana government, and Hohoe municipality houses the school of public health, while the two colleges of education are owned by the Roman Catholic Church and the Midwifery school is owned by the government of Ghana.

Study population

The study population comprised students who were studying in the tertiary institutions in the Municipality.

Inclusion and exclusion criteria

We included in this study all regular students who were eighteen years and above. Students attending on the non-regular basis (sandwich or top-up) or those above first-degree levels were excluded from this study.

Study design

A quantitative, descriptive, cross-sectional design was used for the current study. This design is relatively inexpensive and can be used in a short period.

Sample size determination

The sample size for the current study was 403. This was determined using the formula below:[29]

$n = (Z_{\alpha/2})2\ P\ (1\text{-}P) / e^2$,

where: n= Sample size to be determined, $Z_{\alpha/2}$ = Z score (reliability coefficient) of 1.96 at 95% Confidence Interval (C.I), P = Proportion (50%) of uptake of HTC among university students in case the prevalence is not known (p=0.5) and e = represents margin of error of 5% = 0.05. Substituting the figures to the formula, gave a sample size of 384. Adding a non-response rate of 5% to this sample size, gave a minimum sample size of 403 respondents for the current study.

Sampling method

A proportionate stratified sampling method was used to select the required number of students from each of the 4 tertiary institutions. This method was used to achieve a greater degree of representativeness. The students were stratified into four strata as year I, year II, year III and year IV. The number of study participants for each stratum was allocated proportionally and samples were selected by simple random sampling technique using the list of students as the sample frame. All students recruited into the study signed an informed consent after the purpose of the study and what their participation entailed had been explained to them.

Data collection procedure

Data collection was done from 12th to 19th of October, 2017 using structured self-administered questionnaires. Three trained data collection personnel of similar age and gender as the respondents assisted in the process of the data collection. The data collection instrument was pre-tested among 20 regular tertiary students in Hohoe municipality, who were not part of the actual study to test the feasibility of the instrument for data collection. After the pretesting, the completion time of the questionnaire was increased in the actual study, to give the respondents enough time to complete the questionnaire.

Data analysis

The data collected were entered into Epi Data 3.1 and exported into STATA 12.0 for analysis. To ensure the quality of the data entered, double-entry was done to address discrepancies and the data were cleaned before the analysis. All data were analyzed using descriptive statistics such as frequencies, means and standard deviation. Chi-square and multiple logistic regressions were performed and p-value of less than 0.05 was considered as statistically significant at a 95% confidence interval.

Ethical issues

The research was conducted after approval was granted by the Ethics Review Committee of the Ghana Health Service, Research and Development Division, Accra (Reference number: GHSERC 105/05/17). Permission to gain entry to the study site was obtained from the Hohoe Municipal Education Service and the Administrative Authorities of each institution before the commencement of the study. Participants were assured of confidentiality and anonymity, that under no circumstance would their names and other details be linked to the data analysis and dissemination of the findings of the study. Data management, storage, analysis and reporting were done in formats that would not expose the details of participants. This was done using codes. There were no direct risks associated with the study and no incentive was made to any respondent for participation. None of the participants opted out of the study.

Results

Demographic characteristics

The study was conducted in four tertiary institutions in the Hohoe municipality. All the 403 students that were approached, participated in the study; however, 386 questionnaires were fully completed, giving a response rate of 95.8%.

Majority of the respondents, 32.6% (n=126) were from school Z, were females 61.4% (n=237) and aged 20-24 years 64.7%

(n=250) (Table 1). The mean age of the respondents was 21.9 years with a standard deviation of 2.81. Most 46.4% (n=179) were first year students, 92.7% (n=358) were single, 93.5% (n=361) were Christians and 52.0% (n=201) were from the Ewe ethnic group (Table 1).

Utilization of HIV Testing and Counseling services

Only 30.6% (n=118) of the total respondents had ever tested for HIV/AIDS, of whom only 22.9% (n=27) tested less than 6 months before the current study. Majority 68.6% (n=81) of the ever-tested respondents were counseled before testing, 89.1% (n=344) would recommend HTC to others and 88.3% (n=341) were interested in taking HTC irrespective of whether they had done it before or not (Table 2).

Barriers to HIV Testing and Counseling

Of the respondents, 21.8% reported never had sexual intercourse, 20.0% reported fear of stigma and discrimination, 22.0% reported fear of positive test results, 17.6% reported lack of trust in HTC service providers and 25.4% reported unavailability of HTC services as barriers to HTC uptake (Figure 1).

Perception regarding the provision of HTC services in schools

Figure 2 shows that majority of the respondents (91.0%) believed that HTC centers should be provided in schools.

Logistic regression analysis showing the factors that affect HTC service utilization

Students from Midwifery training college, THERESCO AND UHAS were more than two times more likely to have utilized HTC services than those from FRANCO [OR=2.67 (95% CI: 1.14-6.15); p=0.024], [OR=2.40 (95% CI: 1.04-5.54); p=0.040] and [OR=2.63 (95% CI: 1.13-6.13); p=0.026] respectively. Furthermore, students above 24 years of age were 3 times more likely to have utilized HTC services than those below 20 years of age [OR=2.56 (95% CI:1.07- 6.11); p=0.034] and fourth-year students were 3 times more likely to have utilized HTC services than first-year students [OR=3.05 (95% CI: 1.10-8.49); p=0.033] (Table 3).

Table 1. Demographic characteristics of respondents.

Variable	Frequency (n=386)	%
Name of school		
FRANCO	97	25.2
MIDWIFERY SCHOOL	80	20.7
THERESCO	83	21.5
UHAS	126	32.6
Sex		
Male	149	38.6
Female	237	61.4
The age group		
Below 20 years	74	19.2
20-24 years	250	64.7a
Above 24 years	62	16.1
Year of study		
First-year	179	46.4
Second-year	133	34.4
Third-year	49	12.7
Fourth-year	25	6.5
Marital status		
Married	27	7.0
Not married	358	92.7
Divorced	1	0.3
Religion		
Christianity	361	93.5
Islam	25	6.5
Ethnicity		
Ewe	201	52.1
Akan	102	26.4
Hausa	15	3.9
Guan	26	6.7
Ga-Adangme	17	4.4
Northerners	25	6.5

Table 2. Utilization of HIV Testing and Counseling services.

Variable	Frequency	%
Ever had HTC in the past (n=386)		
Yes	118	30.6
No	268	69.4
Time of last test (n=118)		
Less than 6 months	27	22.9
6 months	22	18.6
7-12 months	53	44.9
Above 1 year	16	13.6
Where the HTC service was provided (n=118)		
Hospital	59	50.0
Health Center	31	26.3
NGO Clinic	10	8.5
Private Clinic	7	5.9
Church	1	0.8
Home	1	0.8
School	9	7.7
Received counselling before the test was done (n=118)		
Yes	81	68.6
No	37	31.4
Would recommend HTC to others (n=386)		
Yes	344	89.1
No	42	10.9
Interested in having HTC whether I have had it before or not (n=386)		
Yes	341	88.3
No	45	11.7

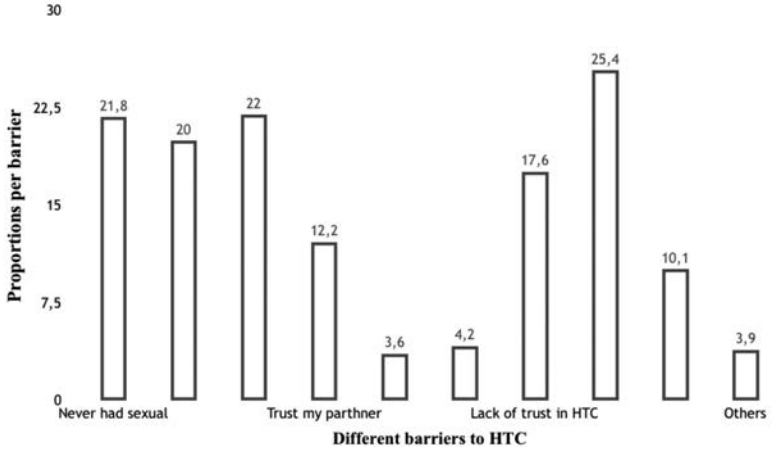

Figure 1. Barriers to HIV Testing and Counseling.

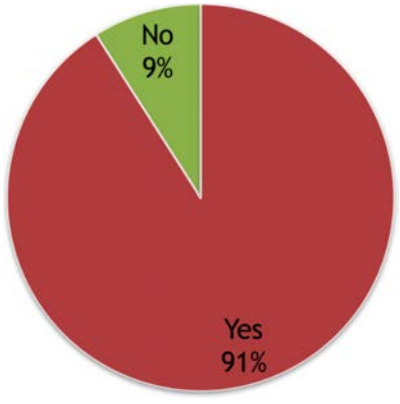

Figure 2. Provision of HTC centers in schools.

Discussion

In the current study, only 30.6% of the respondents had ever tested for HIV/AIDS. This is similar to other results obtained in Ethiopia (21.3%),[18] in South Africa (18.0%)[1] and in Metropolitan Kumasi, Ghana (6.0%).[16] Moreover, very few of the respondents had tested within six months before the current study as recommended by WHO.[30] This can be likewise interpreted that the majority of the few who had ever tested did not follow the routine as required. Inability to adhere to routine HTC might lead to vulnerability to HIV/AIDS. Besides, the findings from the current study showed that majority of the ever-tested respondents had their tests from the hospital (50.0%) followed by the health centre (26.3%), NGO clinic (8.5%) and private clinics 7(5.9%). This implies that very few had HTC services outside the healthcare domain.

This might be because, these services are made available mostly at the healthcare settings and therefore, easily accessible in the township, which provides the young people with easy access to the HTC services. This might also be explained by the fact that people often go to a health facility when they already have a health problem, providing them with more chances of getting to know their HIV status through the health care providers. More students might utilize HTC services if they are extended to schools and even run as outreaches in communities, as 91% of the students in the current study were of the opinion that HTC services should be provided in schools. Majority of the respondents (89.1%) would recommend HTC to others. This is similar to a study conducted in Cameroon, which reported that 78.9% recommended HTC to a family member.[31]

Concerning barriers to HTC uptake, 21.8% of the respondents reported never had sexual intercourse and 12.2% also said they trusted their partners and therefore did not take up HTC, implying low-risk perception to HIV transmission. This is similar to a study conducted in Tanzania by Sanga *et al.,*[3] which states that a significant number of the study participants considered themselves at low risk of contracting HIV infection and therefore did not bother to take up HTC. Nevertheless, there are different ways apart from sexual intercourse, that one can acquire HIV such as through sharp and pointed-infected objects. Ghana is experiencing a generalized epidemic which an HIV prevalence of above 1%, which implies that everybody is at risk of contracting HIV whether one is sexually active or not. Therefore, all the routes of transmission of HIV are important.[27]

Also, 20.0% reported fear of stigma and discrimination as a barrier to utilizing HTC services. This finding is similar to a study conducted in Tanzania, where a significant number of the study participants said that they did not like to go for HTC as they are afraid of being stigmatized particularly as they are likely to be labelled as HIV victims.[3] The current study again revealed that 22.0% of the respondents reported fear of a positive test result as a barrier to HTC uptake. A similar study among Bahirdar University Students at Ethiopia,[32] and two others in Ghana[6,7,] identified fear of positive results as a barrier to HTC uptake. Furthermore, 17.6% of the students in the current study reported lack of trust in HTC service providers as a barrier to HTC uptake, which is comparatively similar to a study conducted by Bwambale *et al*., (2008) in Uganda,[8] which also identified confidentiality of services as the barriers to poor utilization of HTC services among men. More importantly, 25.4% of the students in the current study reported unavailability of HTC services as a barrier to HTC uptake. This is almost similar to finding in Uganda.[8] Few of the students (10.1%) also complained that HTC centers are too open. Because of these perceived barriers, young people may lack the confidence to go for HTC services. There is need for health promotion interventions to increase the self-efficacy of the students and to minimize these barriers so that they will be able to use HTC services.

Majority of the respondents in the current study (91%) showed a great desire for HTC centers in their various schools. This is in agreement with a formative evaluation of the acceptability of HTC at schools in Gauteng and North West provinces in South Africa conducted among high school students,[1] which shows that the acceptability of HTC at school was high (76.9%) and 71.8% were willing to be tested at school. According to the authors, students perceived it as appropriate, convenient, and has the potential to offer the confidentiality of HIV test results and private testing. Therefore, taking HTC services to the school settings may enable students to have increased access to the services.

After controlling for the effects of other variables through logistic regressions, it was discovered that students in the fourth-year of study and those above 24 years of age were more likely to have undergone HTC. This may be due to the higher possibility that fourth-year respondents could have easier access to HTC information since they had stayed longer in their various schools than students in the lower levels of study. The finding that age is a significant factor in HTC utilization could be explained by the fact that as age increases, students become more mature and can better assimilate HIV information. It might also be because as young people grow, they are exposed to HTC/HIV education, which

Table 3. Logistic regression analysis showing the factors that influence HTC utilization.

Factors	Odds ratio	p-value	95% CI
Tertiary institution			
FRANCO	1.00		
MIDWIFERY SCHOOL	2.67	0.024	1.14 – 6.15
THERESCO	2.40	0.040	1.04 – 5.54
UHAS	2.63	0.026	1.13 – 6.13
Age group			
Below 20 years	1.00		
20-24 years	1.60	0.201	0.78 – 3.30
Above 24 years	2.56	0.034	1.07 – 6.11
Year of study			
First-year	1.00		
Second-year	1.11	0.732	0.62 – 1.96
Third-year	1.50	0.308	0.69 – 3.26
Fourth-year	3.05	0.033	1.10 – 8.49
HTC is conducted voluntarily			
Yes	1.00		
No	1.04	0.921	0.41 – 2.62
HTC is important for prevention control of HIV			
Yes	1.00		
No	0.50	0.409	0.10 – 2.58
HTC provision centre is around			
Yes	1.00		
No	0.82	0.480	0.46 – 1.43

makes them realize the importance of knowing their HIV status.

Also, the school of attendance of the students also showed a significant association with HTC utilization such that more students from UHAS and the Midwifery training college were 3 times more likely to have utilized HTC services than those from FRANCO. This might be due to the health-related educational background of these students since both schools are health-based institutions. This finding is in agreement with a study conducted in Cameroon.[31] Also, students from THERESCO were two times more likely to have utilized HTC services than students from FRANCO. Students from THERESCO and the Midwifery training college were all females.

Limitations

The study was based on self-reports by students who might have provided socially desirable responses regarding the issue of HTC. However, the anonymity of the questionnaire might have encouraged students to be honest in answering the questions. The study was conducted among tertiary institution students in the Hohoe municipality of Ghana. Thus, the findings may not reflect some ideas of those who have never been to school and may also not provide a national picture of HTC acceptability. Despite all of these limitations, it is believed this study might be a reasonable source of information for researchers and policymakers.

Conclusions

The uptake of HTC among tertiary institution students in Hohoe was low. School of attendance, age and year of study were the factors influencing the uptake of HTC. The study findings also demonstrated that the acceptability of HTC at school was high, and there was a willingness to uptake the service among students. Policy-makers should consider all the above factors to design appropriate policies targeting students from tertiary institutions in Hohoe Municipality, Ghana to increase HTC uptake.

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