

Knowledge of HIV Status and Barriers to HIV Testing Services among the Youth

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Abstract: Globally, human immunodeficiency virus (HIV) infection remains a public health threat and is worse in Sub-Saharan Africa. HIV/AIDS in Ghana is a serious concern and a threat to the youth, which constitute the workforce. Innovative HIV Services have the potential to address low HIV testing rates; however, the dynamics of HIV uptake are not well understood among the youth. This study, therefore, examined the evidence of knowledge of HIV status and barriers to uptake of HIV Services among the youth in Asutifi North District. The study adopted a quantitative approach by administering questionnaires to 387 youth in the district. Subsequently, the data were coded and analyzed in STATA 14.0 Statistical Software. Findings from the study demonstrated that there was inadequate knowledge of HIV status among the youth, and they preferred to know their HIV status. A high proportion of youth have never heard of HIV Testing and Counseling (HTC) Services. All barriers that prevented the efficient uptake of HIV testing and counseling services included personal level barriers (stigma and discrimination) and health workers' attitudes that hindered the efficient uptake of HTC services. HIV testing and knowing one's HIV status are most common among married young women (OR = 3.52; p 0.001; 95% CI = 1.80–7.88). The most preferred HIV testing strategy is the "Know Your Status" campaign, while PITC has the potential to improve knowledge of HIV status. The study concludes that among the youth in Asutifi North District, there is low knowledge of HIV status, and personal and health system barriers prevent the uptake of HTC services. Being married among the youth is associated with knowledge of one's HIV status, especially for young women. The Know Your Status campaign is also the most preferred HIV testing strategy among the youth in Asutifi North District.

Keywords: youth, barriers, HIV status, HIV/AIDS, Ghana, Asutifi North District

1. INTRODUCTION

Globally, Human-Immunodeficiency Virus (HIV) infection remains a public health threat. Out of an estimated 37.9 million people living with HIV worldwide at the end of 2018, 68.2% resided in Africa, and an estimated 1.1 of the 1.7 million people who became newly infected in 2018 (UNAIDS, 2018; WHO, 2019). Efforts to achieve zero new infections and zero Acquired Immunodeficiency Syndrome (AIDS) related deaths through the 90-90-90 goal require increased uptake of HIV testing as a gateway to HIV prevention, treatment, care, and ending the AIDS epidemic (UNAIDS, 2014). To address this health problem, coupled with increasingly wider availability of antiretroviral

therapy (ART), many countries in SSA have in recent years dramatically scaled up HIV testing services. For instance, results from a study by Musheke et al., (2013) titled "a systematic review of qualitative findings on factors enabling and deterring uptake of HIV testing in Sub-Saharan Africa" indicated that HIV which previously was regarded as a death sentence is now seen as an opportunity to extend one's life when tested positive (Musheke et al., 2013).

Despite efforts to reach the 90-90-90 goal, Sub-Saharan Africa has only achieved 45% of the first which implies that only sub-Saharan Africa has achieved 50% of the set target of ensuring that 90%

of the population know their HIV status (Maheu-Giroux et al., 2019; UNAIDS, 2014).

HIV Testing facilitates early diagnosis for HIV positive persons which helps reduce the risk of further transmission, provides access to care and treatment while motivating people who test HIV negative to maintain their negative status (Bandason et al., 2016). This suggests that HIV Testing and Counselling (HTC) is vital for both knowledge of one's HIV status and HIV prevention. However, there are still people who do not know their HIV status. Traditionally, low HIV testing rates were associated with the reliance on Voluntary Counseling and Testing (VCT) which is initiated by the client, as the sole approach to HIV testing (Leon et al., 2010). In 2006, the World Health Organization and The Joint United Nations Program on HIV/AIDS developed draft guidance on Provider-Initiated HIV Testing and Counseling (PITC) to increase the opportunities for HIV diagnosis, thereby reducing the barriers associated with HIV testing (Leon et al., 2010). The PITC approach recommends routine HIV testing and counseling to clients who attend health services regardless of their presenting illness (WHO & UNAIDS, 2007).

Several studies conducted in health clinics and hospitals between 2006 and 2010 worldwide have investigated the impact and acceptability HIV testing and counseling concerning the routine offer of HIV testing (Bassett et al., 2010a) Overall, routine HIV testing was perceived to be acceptable and helped to increase testing rates, thus enabling awareness of HIV status for patients who had never tested. For instance, in a Ugandan study in two hospitals, of the 98% participants who accepted testing, a 28% HIV prevalence was found in patients who had never had an HIV test previously (Bassett et al., 2010b). These findings were consistent with another Ugandan study where 95% of participants accepted testing and about half had an HIV diagnosis (Loos et al., 2014a). In terms of HIV diagnosis of previously undiagnosed patients, these findings were consistent with two South African

studies, one of which identified an HIV prevalence of 40% overall while the other study had a 32.7% HIV prevalence of which 64.9% had never had an HIV test before. In terms of the increase in testing rates, however, both studies had lower HIV testing acceptance rates compared to the two Ugandan studies, one had a 76% testing rate which was lower than their targeted rate and the second study only achieved a 48.6% HIV testing rate of the eligible participants (Leon et al., 2010; Staveteig et al., 2017). It is evident from these studies that although HIV testing uptake has improved over the years, barriers to testing may still exist.

A current focus of research is how patients perceived and actual HIV risk influences decisions around HIV testing, as it is thought that patients who decline HIV testing may be at greater risk for HIV infection. A study in a Boston found that 15% of subjects who perceived a need for testing based on their risk for HIV infection ultimately refused to test. In Washington D.C., researchers tested identified blood samples from decliners and found nearly three times the risk of HIV infection compared to patients who accepted testing.

To appreciate the need for taking action on HIV testing, it is necessary to know how HIV and AIDS directly or indirectly affect Ghanaians. The following are some of the effects of this disease: The first burden is on the health sector. HIV/AIDS patients tend to utilize a lot of hospital resources, meaning that other ailments may have to be prioritized less. In addition to this, medical practitioners are also straining as they need more training to administer drugs and take care of patients. Families get dissolved when AIDS kills parents. When this happens, children are left without people to take care of them. In most cases, they are spread among relatives, and the idea of having a family is dissolved. In most cases, some of these children grow without love and are thus emotionally scarred for life. Sometimes the children are forced to fend for themselves in destitution when relatives refuse to step in. More often than not, children have to quit school. The burden of taking care of the sick may

cause serious financial strains on the family, which means that school becomes a secondary priority. Women may also be forced into prostitution in a bid to fend for their families in the absence of their husbands. When males die as a result of the disease, there tends to be a strain in the households, and the cycle of infection continues as dependents turn to providers. In the process of providing for their families through prostitution, these women contribute to spreading the disease to other people. With most of the infected Ghanaians aged between 15 and 49 years, the labor force is affected, and in turn, productivity reduces. Infected people cannot work optimally. A poor-quality workforce leads to poor results and an overall economic decline. The impact of this disease, therefore, is felt in the entire household as providers fail to meet their roles effectively. With a reduced labor force, the government is also affected since income is reduced. When this happens, government income also declines. As a government without people to pay tax, the revenues to be used for development are minimized. With an understanding of the possible effects of HIV in Ghana, the issue needs to be addressed. HIV/AIDS in Ghana is a serious issue, especially if the statistics indicate an increase in this prevalence instead of the expected decline. All stakeholders need to come together to fight the spread and discourage new infections.

HIV/AIDS in Ghana is a serious concern for the government and other stakeholders. A healthy nation is a working nation. It is, therefore, a reason for worry when a disease as serious as HIV/AIDS continues to spread instead of decreasing. This is alarming for any government as it translates to a sick nation which could affect the working force of the country if something is not done. When the workers are affected, the economy suffers negatively and this may impact the overall growth of the state. As such, every country will look into issues of health and Ghana is no exception. There is a global agenda to end HIV epidemic through the 90-90-90 goal by the year 2020 (UNAIDS, 2014), despite the increase in uptake of Antiretroviral Therapy (ART) Services in Ghana which takes care

of the second 90, there is still an estimate of close to 16,000 deaths related to HIV/AIDS as at the end of 2017 (Ghana AIDS Commission, 2017), this, therefore, requires a study to investigate knowledge and barriers to uptake of HIV Testing. It would be considered an achievement if updated reports indicate that new infections have reduced over time. Since 1986, Ghana has paid less attention to HIV not until the year 2003 when the spread of the disease was at its peak, more than 76, 139 people were in the record as infected although more than 395,000 people were infected since a majority of them were undocumented. This may still not be a true representation of the facts considering that more than 60% of Ghanaians living in rural areas depend on traditional practitioners. This means that numerous cases go unrecorded and that there could be many more cases of infection that could have been present but unknown. In addition to this, the lack of many Ghanaians knowing their status also contributed to inaccurate facts.

Based on previous reports, it appears as though the efforts of eradicating the disease in 5 years were being defeated. This follows the 70.15% increase in infections over 12 months. In this period, the number of infections rose from 12,000 people in 2015 to a whopping 20,148 in 2016. This is alarming and a serious cause of concern as the National AIDS Control Program report indicated.

According to the 2017 HIV Sentinel Survey (HSS) and Estimates Report which was jointly announced by both the National AIDS and STI Control Programme (NACP), the Brong Ahafo was highly ranked in 2016 to have the highest rates of AIDS prevalence in Ghana.

According to HSS outcome in 2017, 4 regions in Ghana recorded a higher prevalence of the disease than the national median which was 2.1 %. The above-mentioned statistics on HIV rate in Ghana 2017 are worrisome since, instead of registering a decline, there is a significant increase. On the brighter side though, it appears that the prevalence in women attending antenatal clinics has reduced.

However, there is a serious concern among the youth aged 15 years to 24 years. The possibility of new infections rose from 1.1 % to 1.5% within a year. It is alarming considering that this is the productive age. Chances are that the same statistics represent the reality of HIV in Ghana 2018.

2. MATERIALS AND METHOD

Location

The Asutifi North District is one of the 27 administrative district/municipality in the BrongAhafo Region. The district share boundaries with Sunyani Municipality to the north, Tano North District to the northeast, Dormaa Municipality and Dormaa East to the northwest, and Asutifi South District to the south and East. The district has a total land surface area of 800 sq.km. There are about 68 communities in the district with three traditional paramount chiefs, namely: Kenyasi No. 1, Kenyasi No. 2 and Ntotroso. Kenyasi (a twin-community, i.e. Kenyasi 1 and Kenyasi 2) is the district capital, and it is about 50km away from Sunyani, the regional capital of BrongAhafo Region.

Population

From the National Population and Housing Census of 2010. The district has a population of 65,754 with a growth rate of 2.3% per annum.

Study Design and Type

A cross-sectional study design was adopted to assess the knowledge of HIV status and barriers to the uptake of HIV Testing services among the youth in Asutifi North District at a specific point in time. Cross-sectional study design is well known for its ability to give the researcher the opportunity to measure both exposures and outcomes at the same time. This study used a quantitative approach to answer the research questions. Quantitative data is information about quantities, and therefore numbers, are very relevant. (McLeod, 2019). Questionnaire was developed capturing the various specific objectives and themes. The study was community-based involving the youth in the district.

Study Population

The study population involved young people between the ages of 15-24 years are regarded to be within the youthful ages. Youth is defined to be a group of people transiting from childhood into adulthood within the age bracket of 15-24 years (The United Nation, 2008).

Sampling

The type of sampling used was convenient sampling. Convenience sampling (also known as availability sampling) is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study. Facebook polls or questions can be mentioned as a popular example for convenience sampling.

Convenience sampling is a type of sampling where the first available primary data source will be used for the research without additional requirements. In other words, this sampling method involves getting participants wherever you can find them and typically wherever is convenient. In convenience sampling, no inclusion criteria identified prior to the selection of subjects. All subjects are invited to participate.

In its basic form, convenience sampling method can be applied by stopping random people on the street and asking questionnaire questions.

Sampling Frame

The recent Ghana Population and Housing Census (2010), register for Asutifi North District was collected from the Ghana Statistical Service Department and used as the sampling frame for all the project number of youths in 2019 who qualified for this study. This sampling frame was used to guide convenience selection of samples because it provided a detailed information of all the ages from 0 to 80 years and above.

Sampling Technique

Non-probabilistic sampling technique was employed for the study, precisely Convenience Sampling. This is a type of sampling technique in which respondents are not given equal chance of

selection but, rather based on specified criteria of selection. Four (4) sub-districts within the district were selected for the study. Again, convenient sampling was used in the selection of young people within the ages of 15-24 years for administration of the data collection tools.

Assumptions

It was assumed that the sample size of 385 subjects that was used for the study was normal based on the Central Limit Theorem, which states that the sampling distribution of any statistic will be normal or nearly normal, if the sample size is large enough or more than 30. Hence all responses and information that were provided by the respondents were assumed to be accurate and a true representation of the study area. It was also assumed that recall and interviewer biases, if at all, was minimal.

Data Collection Tool and Technique

Data-collection techniques allow us to systematically collect data about our subject of interest (people, objects, phenomena) and about the settings in which they occur. In the collection of data, we have to be systematic. If data are collected haphazardly, it will be difficult to answer our research questions in a conclusive way. Various data collection techniques can be used based on the variables of interest e.g. Observation, Interviewing (face-to-face), administering written questionnaires, and Focus group discussions. This section underscores the data collection tools for the study and how these tools were used to achieve the research objectives. In this study, all the only the administration of questionnaire was employed.

3. RESULTS

Table 1: Characteristics of the Respondents

Variable	Frequency	Percent (%)
Gender		
Male	217	54.8
Female	179	54.2
Age		
15-17	61	15.4
18-20	186	47.0
21-24	149	37.6
Marital Status		
Single	350	88.4
Married	46	11.6
Religion		
Christian	237	59.8
Protestant	8	2.0
Muslim	151	38.1
Educational Status		
Primary Education	1	0.3
Secondary Education	269	67.9
Tertiary/Post-Secondary Education	126	31.8
Occupation		
Student	386	97.5
Business	1	0.3

Variable	Frequency	Percent (%)
Professional	9	2.3

Table 1 represents the socio-demographic characteristics of respondents which included: gender; where males were 217 (54.8%) respondents and females were 179 (45.2%). Regarding the age of respondents, a total of 61 (15.4%) respondents were within the age group of 15-17 years, 186 (47%) were within the age group of 18-20 and 149 (37.6%) were within the age group 21-24 years. For the religious affiliation, 8 (2%) were protestants, 236 (59.8%) were orthodox and 151 (38.1%) were Muslims. Table 4 further presents the marital status of respondents where 46 (11.6%) were married while 350 (88.4%) were single. On educational background, 269 (67.9%) were in the Senior High school education, tertiary and post-secondary education constituted 126 (31.8%) while only one (1) had only primary education. On occupation, 386 (97.5%) of the respondents were students, only one (1) respondent was a business man and 9 (2.3%) were professionals in the education sector.

Knowledge of Youth on their HIV Status

In order to ascertain the level of knowledge the youth had in the Asutifi North District, with respect to HIV testing Counseling as well as the rate of testing among the respondents, the study revealed that, the level of knowledge of respondents with regard to HIV Testing and Counselling Services was low such that 93 (23.5%) responded that they have ever heard of HIV Testing and Counselling Services before whilst 303 (76.5%) responded that they have never heard of HIV testing and counselling services before. Interestingly, from table 2, 98.3% of the respondents who did not know their HIV status were interested in knowing their status and only 1.7% didn't want to know their HIV status. Again, 44.7% of respondents took an HIV test with the aim of taking measures to prevent contracting the virus meanwhile 18.7% wanted to reduce the spread of the HIV virus. Moreover, all respondents 396 (100.0%) said that it was very important for them to undertake an HIV test and most importantly only 101 (25.5%) of respondents knew their HIV Status.

Table 2: Knowledge variables of Respondents on HIV/AIDS

Knowledge Variables	Sub-category	Freq.	Percentage (%)
Ever Heard of HTC before	Yes	93	23.48
	No	303	76.52
Source where Respondents heard of HTC	Hospital	14	3.54
	Friends	15	3.79
	Private clinic	14	3.54
	NGO	50	12.63
	Never Heard it	303	76.52
Knows where HTC Services are provided	Yes	161	40.66
	No	235	59.34
Knows HIV Status from a Previous Test	Yes	101	25.51
	No	295	74.49

Knowledge Variables	Sub-category	Freq.	Percentage (%)
Ever paid Money for an HIV Test	Yes	0	0.00
	No	99	25.00
If you do not know your status, do you intend to take an HIV Test?	Yes	292	98.32
	No	5	1.68
Reasons for taking an HIV Test	Know my Status	144	36.36
	Prevent Myself	177	44.70
	Reduce HIV spread	74	18.69
	Missing	1	0.25
Do you think it is important for you to take an HIV test?	Yes	396	100.00
	No	0	0.00

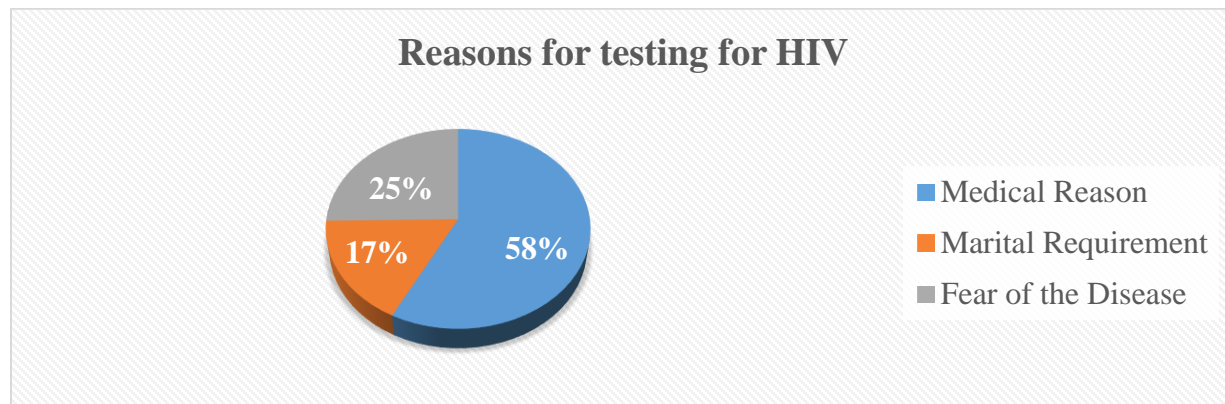


Figure 1: Reasons for taking an HIV Test

Figure 1 presents the reasons accounting for HIV testing among the youth. It shows that 57 (58%) of respondents tested because of medical reasons, 25 (25%) test because of fear of contracting the disease, and 17 (17%) test for HIV because it was a marital requirement.

Persons-level Barriers to HIV Testing and Counseling among the Youth

Table 3, displays Personal and Health Worker barriers that affect the uptake of HIV Testing and Counselling Services among the youth. It demonstrated that 35.4% of the youth do not subscribe to HTC Services for fear of stigma, 34.9% was for fear of discrimination whilst 1 person (0.25%) gave some other personal reasons as a

barrier to uptake of HTC Services. Meanwhile 81.3% of the youth strongly agreed that Health Workers' behaviour and attitudes were a major hindrance to the uptake of HIV Testing and Counselling Services and the remaining 18.7% agreed that Health Workers' behaviour was a barrier to accessing HIV Testing and Counselling Services.

Table 3: Barriers that prevent the uptake of HTC Services

Barriers Variables	Sub-Categories	Freq.	Percent
Personal Barriers	Fear of stigma	140	35.35
	Fear of discrimination	138	34.85
	Fear of positive results	77	19.44
	Confidentiality Issue	34	8.59
	Partner and self-trust	6	1.52
	Other	1	0.25
Health Workers Attitude prevents	Strongly Agree	322	81.31
	Agree	74	18.69
	Disagree	0	0.00

Health Systems as Barriers to HIV Testing and Counseling among the Youth

From table 4, the study found out that 295 (74.5%) of the respondents have never tested for HIV before, because the health system has inherent hindrances which they attributed to the health workers. A section of the respondents numbering up to 82 (25.5%) agreed that health workers were barriers to HTC despite the fact that they have ever tested for HIV before.

Table 4: Health Workers and Barriers

Health Workers as Barriers to HTC	Testing for HIV Before	
	Yes N (%)	No N (%)
Strongly Agree	82 (25.47)	240 (74.53)
Agree	19 (25.68)	55 (74.32)
Disagree	0 (0.00)	0 (0.00)
Total	101 (25.51)	295 (74.49)

Association between Socio-Demographic Characteristics and Knowledge of HIV Status

A multiple variable analysis was conducted to establish the association between the demographic characteristics and knowledge of HIV Status. The variables involved in the logistic regression model included; Marital Status, Religious Affiliation, Age, and Gender. The results of the model is demonstrated in table 5. The logistic regression model that best predict the Knowledge of HIV status

from the various variables is considered to have p-value <0.05. In the model 396 observations are included. The odds of taking an HIV test and knowing one's HIV status highest among married young women (OR=3.52, p< 0.001, 95%CI=1.80-7.88). There is also a positive relationship between years of education and knowledge of HIV status among the youth (OR=1.34, p=0.26, 95% CI= 0.81 – 2.22), the model predicts that respondents at a given level of education is 1.25 times more likely to

know their HIV status than the next lower level of education.

Table 5: Association between Socio-Demographic Characteristics and Knowledge of HIV Status

Test for HIV & Knows Status	Odds Ratio	Std. Err.	z	P>z	[95% Conf. Interval]
Educational status	1.341561	0.3461295	1.14	0.255	0.8090887 2.224461
Occupation	1.046492	0.2569196	0.19	0.853	0.6467865 1.693209
Marital Status	3.762671	1.418359	3.52	0.000*	1.797344 7.877008
Religious affiliation	1.193287	0.1472091	1.43	0.152	0.9369943 1.519682
Age Range	1.105401	0.2131422	0.52	0.603	0.757517 1.613049
Gender	0.885261	0.2181391	-0.49	0.621	0.5461663 1.434887
Cons	0.0184857	0.0189759	-3.89	0.000	0.0024721 .1382327

HIV Testing Approaches Preferred by the Youth in Asutifi North District

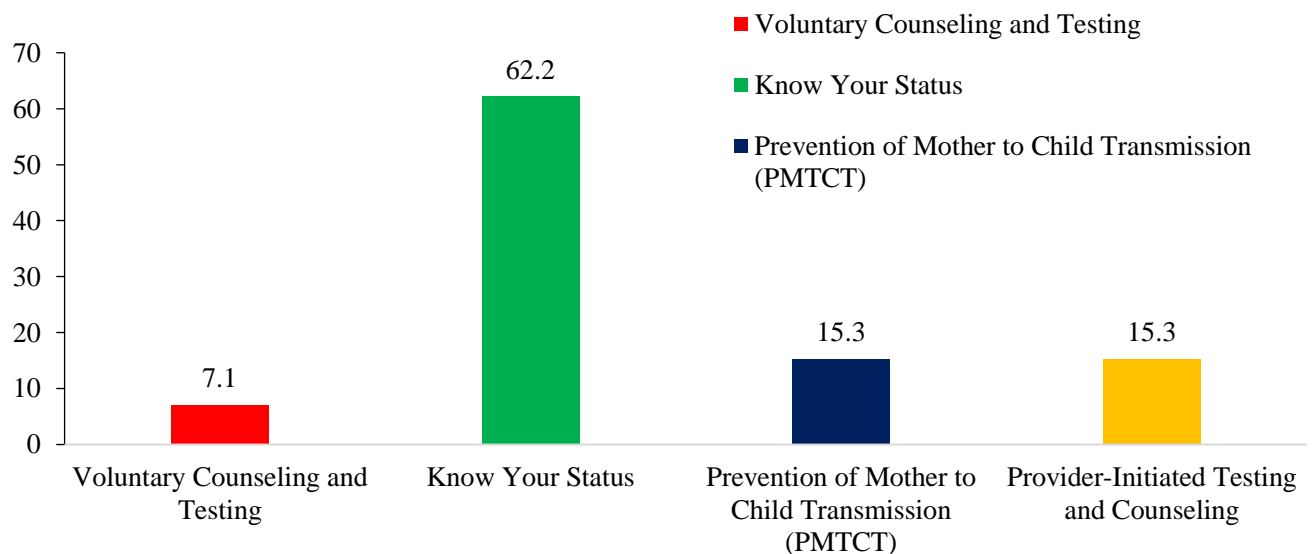


Figure 2: HIV Testing Approaches Preferred by the Youth

Figure 2 represents the distribution of the type of HIV Testing provided to the participants. It shows that majority (62.2%) had opportunity to test from “Know Your Status” test packages, 30.6% as seen to be due to PMTCT and Provider-Initiated Testing and Counselling provided and 7.1% went for testing

voluntarily. This means people hardly go to undertake voluntary testing. The most effective way to get people testing for their HIV status is not relaxing to hope they will voluntarily undertake the test but by enthusiastically creating programs which

presents the euphoria to encourage the citizenry to want to know their status.

4. DISCUSSION

Proportion of youth in the Asutifi North District that have had HIV Testing.

This question sought to find out the proportion of the youth who are aware of HIV Testing and counselling as well as their HIV status. There were some responses made on the awareness of HIV testing and counseling and the level of testing among the participants of the study. Based on these responses, the following are the findings that were obtained from the questionnaire administration. Among the participants of the study, it was established in the results that knowledge scores about HIV Testing and Counseling was very low such that only a quarter of the respondents knew their HIV status even though according to a study conducted by (Oppong Asante, 2013a), indicated that the majority of Ghanaian have heard about the HIV/AIDS diseases. This result shows that much talk is done with respect to the virus and the disease, its causes and effects thereof downsizing the need for testing a counseling accounting for the low knowledge in testing and counseling of HIV. According to (Kiplagat & Huschke, 2018) and (Ghana AIDS Commission, 2010) there has been nearly universal awareness of HIV/AIDS since 2003, but wide-ranging knowledge has been sheathing behind which actually have an effect the testing and counseling which requires every individual to know their respective status .

The result indicated that the number of the youth who had tested for HIV virus and known their status is very few such that only about 25.5% of participants had tested for the virus. Another interesting result revealed in the study is that about 59.3% of the participants did not have knowledge about where to get an HIV test, which makes the few testing rates not surprising. Consistent with the findings of this study is a study carried out by Loos et al., (2014b), which indicated that majority of respondents had inadequate knowledge about the mode of HIV transmission which made it difficult for

them mingle with PLHIV and eventually stigmatizing them.

The barriers that affect uptake of HIV Testing among youth in the Asutifi North District.

On the barriers and facilitators that affect uptake of HIV Testing among youth in the Ahafo Region of Ghana, the results revealed that the most significant personal level barriers to uptake of HIV Testing and Counselling services to include fear of stigma represented by 35.4% and the least was Partner and self-trust at the personal level. Fear of stigma will imply that the youth will not test to know their status early which means their viral load will be significantly high without High Active Anti-Retroviral Therapy (HAART) which facilitates quicker transmission of the HIV virus among this productive population. This therefore creates the prospect for the development of programmes aimed at stigma reduction activities among the youth within communities, schools, youth are into apprenticeship. Findings of this study are consistent with earlier studies by Ameyaw and Ankrah et al., (2018; 2016) which indicated that stigma was the main perpetrator to low patronage of HIV testing and counseling services.

The unwillingness of young people to take HIV test could be credited to stigma, discrimination associated with the counseling and testing and AIDS as well as fear and anxiety. According to (Oppong Asante, 2013b), fear of stigma is a major influence which discourages young people from engaging in preventive behaviors and education, knowledge of the virus does not predict behavioral change (Onah, Mbah, Chukwuka, & Ikeme, 2004). Health Workers were also major barrier to HTC as can be seen in the result, those who had tested for HIV in the hands of these individual still indicated that they were major barriers. This result confirms several studies conducted by (Bassett et al., 2010b; Hallmark et al., 2014), a number of barriers to HIV Testing and counseling are health service provider or Health Workers related.

The relationship between HIV Knowledge Status and Socio-demographic factors among the youth in the Asutifi North District.

In this study, there was a statistically significant association between marital status and knowledge of HIV status among the youth. At the multivariable level married youth (especially females) were 3.8 times more likely to know their HIV status as compared to their unmarried counterparts [OR=3.8, $p < 0.001$]. Preparing to marry or been in a relationship and being an orthodox or Christian in general increases the of HIV testing among the young people such that out of the 101 people who had tested for HIV, 73 of them were Christians and people who were either married or in a relationship. Consistent with this results is a study by (Bowles et al., 2017) which stated that, the degree of HIV avoidance mindfulness among couples is high and practically widespread. In any case, there is a low selection of HIV avoidance techniques among the couples since they are seen to be couple unfriendly because of their inconsistency with the socio-cultural convictions of the individuals. There is a need to target couples as units of intercession in the reception of HIV avoidance strategies by rustic networks. Moreover, according to (Tabana et al., 2013), HIV testing rate was high among wedded individuals as opposed to those going relentless and living respectively and among single individuals.

The testing approaches preferred by the youth in the Asutifi North District.

The most preferred HIV testing approach indicated by respondents was found to be "Know Your Status". This implies that the youth will be less willing to patronize other HIV testing approaches, for example "walk-in tests", however, testing rates can increase significantly if more of know your status campaigns are significantly increased in the district alongside the routine Prevention of Mother to Child Transmission of HIV/AIDS. Provider Initiated Testing and Counselling which recently been introduced as strategic approach to increase HIV testing rates is showing promising results with youth seeing it as one of the preferred approaches. The youth are most vulnerable to acquiring

HIV/AIDS (Naswa & Marfatia, 2010), and the need to explore and upscale multiple testing strategies to improve testing rates, these strategies includes; Voluntary Couples Testing, Enhancing Case-finding for Children, Community-based Voluntary Testing, Index Case Finding, Voluntary Assisted Partner Notification, HIV Self-Testing, instead of waiting for clients to voluntarily come to the health facility for an HIV test (Sidibé, 2017). The use of these mix and multiple approaches have the potential of bridging major barriers to HTC among the youth as identified by this study to be Health Staff Attitude. This study finding is inconsistent with previous literature by (Ameyaw, 2018; Ankrah et al., 2016; MacPhail et al., 2008) which reported that the youth were afraid of testing positive for HIV. This variation could be due to differences in context and perhaps know your status campaign was the only most friendly HIV testing approaches available for the youth in this setting. There is therefore the need for further research to test how the other HIV testing approaches like Self-Testing, Community-based Voluntary Testing, and Enhanced Case-finding for Children can increase testing rates for the achievement of the first 90 and increase uptake of HIV services.

5. CONCLUSION

Testing for the HIV among the youth of Asutifi North District is very low mostly due to the low level of education on HIV. This was deduced from the study which revealed that young people were mostly unaware of HIV testing and counseling in the district though knowledge about HIV is high. Most people were likely to test for the virus to know their status, prevent themselves from the diseases or help reduce the spread of the virus. But stigmatizations, discrimination, trust of partners or love ones and health workers usually serve as barriers to testing and going for counseling among the youth in the district. Appropriate testing mechanism and proper education of the HIV in the region will likely increase the awareness level and the rate of testing for the virus to help fight the canker. The study concludes that knowledge of HIV status among the youth is

very low following the analysis of data collected. Further, research is needed to understand how the youth within the context of Asutifi North wants HIV services to be delivered to increase testing rates. Again, the study sought to investigate the barriers and facilitators that affect the uptake of HIV Testing and Counselling services among the youth. Barriers such as fear of stigma and discrimination, and fear of positive results were identified at the personal-level whilst health workers' attitude was identified after data was analysed as the health system barriers that negatively affect the uptake of HIV testing and counselling services in Asutifi North District. Moreover, the study in answered the question: what is the relationship between HIV knowledge status and socio-demographic factors among the youth? The evidence from the results of this study indicates that higher educational levels leads to a corresponding increase in knowledge of HIV status among the youth in Asutifi North District, most significantly being married is associated with a higher knowledge of HIV status among the youth especially females. The study further in its findings answered the question: what are the testing approaches preferred by the youth in Asutifi North? It was identified that significant number (62.2%) of the youth preferred "know your status" campaigns, and the second most preferred testing approaches is the Provider-Initiated Testing and Counselling and Prevention of Mother to Child Transmission.

6. RECOMMENDATION

Based on the analysis and findings from the study, the study recommend that; There should be a collaboration of all stakeholders thus the Ghana Health Service, the Regional Health Directorate, the Ghana Education Service, District and Community leaders and religious bodies; in the education on HIV with respect to encouraging the youth to involve themselves in HIV testing and counseling activities. Education on the HIV/AIDS disease is long overdue, the major preventive measure is testing which is in the achievement goal of 90-90-90 goal.

Risk and benefits

Respondents were not exposed to any form of hazards or invasive procedures or sensitive

questions as a consequence of this study. There were no immediate and direct benefits to respondents in this study. However, findings from this research serve as basis for decision and policy makers to make informed decisions that will improve the work environment and make it less arduous.

Confidentiality and anonymity

Respondents were assured of concealment of their identity in this study, little information regarding their biodata was collected on respondents to limit the traceability of data to specific individuals.

Right to refuse or withdraw

Respondents were autonomous to decline to be part of this study or withdraw from this study at any point they do not want to proceed with the study with no duress. Respondents did not lose anything as a result of declining or withdrawing at any point in time during this study.

Data protection

The responses were transferred immediately into computer with password protection. Socio-demographic data of participants was collected on a separate sheet before the administration of questionnaire. Codes was used to identify study participants.

Conflict of interest

The investigators had no conflict of interest in this study.

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Author Contributions

The author(s) confirms being the sole contributor of this work and approved it for publication.

Data Availability

Data used for this research is available upon request from the corresponding author.

Notes

1. We appreciate the anonymous reviewer's comments, which we have taken note of and work on to improve the manuscript's scholarly caliber and visibility.
2. All references to "ratings" or "levels" are meant to emphasize the variability of news-ness, and apply to both quantitative and qualitative measurements of news-ness.

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