

AN ASSESSMENT OF BARRIERS TO UPTAKE OF HIV COUNSELLING AND TESTING AMONG OUT-OF-SCHOOL YOUTH IN EBONYI STATE, NIGERIA

Ndidi Mercy OFOLE, Ph.D

drofolendidi@gmail.com

Department of Guidance and Counselling,
Faculty of Education, University of Ibadan

Abstract

HIV counselling and testing (HCT) is the entry point to HIV care and supports. There are still major research gaps regarding why there is low uptake of HCT among out-of-school youths. This study examined the barriers to HCT among out-of-school youths in Ebonyi state, Nigeria. Seventy out-of-school youths with age range of 15-24 years and mean years of 18.5 years purposely drawn from artisans in Ebonyi state participated in the study. Three sessions of FGD were held with the 2 age categories (15-18 & 19 - 24 years). In addition to note taking, all the sessions were audio-recorded and transcribed. Content analysis was done and the following themes emerged: (1) dominant barrier to HCT was fear associated with HCT results and stigma. Other barriers include: (2) low level of HIV knowledge, (3) low risk perception and (4) ignorance of HCT location in Ebonyi State. It concluded that there are individual and social factors which act as barriers to out-of-school youths to seek HIV testing in Ebonyi State. To increase youth utilization of HCT service, there is a need to address these barriers when developing a model for out-of-school youths.

Keywords: *HIV counselling and testing, barriers, out-of-school youths, Ebonyi State*

Introduction

Evidence from the Joint United Nations Programme on HIV/AIDS (2019) indicates that HIV incidence is still escalating. It shows that 1.7 million people became newly infected with Human Immunodeficiency Virus (HIV) in 2019 while over 32.7 million people have died from AIDS-related illnesses since the start of the epidemic. It further adds that about 7.1 million people did not know that they were living with HIV. HIV/AIDS is said to be a leading cause of morbidity and mortality in sub-Saharan Africa (UNAIDS, 2019). The burden of the global HIV epidemic is disproportionately concentrated in sub-Saharan Africa, where—in 2017—75% of deaths and 65% of new infections occurred (Global Burden of Disease, 2017).

Nigeria has the second largest HIV epidemic in the world. UNAIDS estimates that around two-thirds of new HIV infections in West and Central Africa in 2019 occurred in Nigeria. Together with South Africa and Uganda, the country accounts for around half of all new HIV infections in sub-Saharan Africa every year (UNAIDS 2019). There are a number of factors that increase HIV vulnerability among adolescents and youth. Reports from a 2017 National Health Survey showed that only 29% of women and 27.9% of men between the ages of 15 to 24 could correctly identify ways of preventing sexual transmission of HIV, and reject major myths around transmission (National Bureau of Statistics (NBS) and United Nations Children's Fund, 2017). Early sexual debut

is common in Nigeria, with 15% of girls and 4% of boys having sex before they are 15 years old. Inter-generational relationships are also common in Nigeria. A 2017 survey found that 41.2% of women between the ages of 15 and 24 had had a sexual partner, ten or more years older than them in the last 12 months (National Bureau of Statistics (NBS) and United Nations Children's Fund, 2017). This increases HIV risk among this group as the virus is passed from older men to younger women (National Bureau of Statistics (NBS) and United Nations Children's Fund, 2017). Despite their elevated risk, reports show that few adolescents test for HIV regularly. In 2017 only 2% of males between 15 and 19 and 4% of females had tested for HIV in the last 12 months (NBS, 2017).

HIV testing is a critical component of comprehensive HIV services (UNAIDS, 2019). It is noted that among Nigerian youth, only about one-quarter have ever tested for HIV. This is poor, despite efforts to tailor HCT to be friendly and sensitive to the needs of youths (Oginni, Adebajo & Ahonsi, 2017). There is evidence that despite rapid expansion and increased availability of (HCT) services in Nigeria, its uptake among out-of-school youths remained significantly low, notwithstanding that they are at greater risk of HIV infection. This trend becomes a concern, given that HIV counselling and testing is widely acknowledged as an important intervention towards reducing the spread of HIV. Functionally, HCT serves as a key entry point to HIV prevention, care, treatment, and support for people living with HIV (PLHIV). Early awareness of a person's HIV status has many benefits, such as; enabling linkages to HIV care and support services that can improve quality of life and extend lifespan of PLHIV (Ngwenya Gumede, Shahmanesh, McGrath, Grant

& Seeley, 2018). It also provides essential knowledge and support that enable uninfected people to remain so and enable those infected with HIV to plan for the future and prevent HIV transmission to others. Out of school youths are diverse, some may have dropped out of school, or never started school, may have jobs or not, may be single or married, and they may even be girls who have been forced to quit school because they need to work in the home, are pregnant or have babies, on the street, engage in menial jobs in factories or stay at home for housework or child care or are unemployed. However, all out-of-school youths have one thing in common with respect to HIV/AIDS - they lack access to health care and age appropriate, culturally sensitive and comprehensive sexuality education which are normally provided at school settings.

A major health challenge is that although a large number of them are involved in risky sexual behaviours, yet, a vast majority of them do not know their status (Oginni, Adebajo & Ahonsi, 2017; UNAIDS, 2019). Studies have shown that there are significant individual, structural, and social level barriers to HIV testing (Kurth, Lally, Choko, Inwani & Fortenberry, 2015; Adelekan, Gabriel, Alhassan, Gloria, Ogundipe, Williams, & Patrick, 2017). Previous intervention and research efforts tend to prioritize only students who are in school, possibly because of easy access to this group. As a result, the needs of out-of-school youths are often overlooked by interventions and research. Lack of data for out-of-school youths makes it difficult for this group to be targeted for interventions thereby limiting the available evidence to inform appropriate programmes for them. It, therefore, becomes imperative to assess barriers to the uptake of HCT among out-of-

school youth in Ebonyi State, Nigeria. Qualitative study of this nature is considered suitable because it goes beyond simple statistics to providing insights into barriers to HIV Counselling and Testing among out-of-school youths in Ebonyi State, in order to provide a broader understanding of HCT which will impact programming and interventions.

Study Objectives

The main objective of the study was to identify factors that act as barriers to HIV counseling and testing among out-of-school youths in Ebonyi State.

Methodology

Design

Qualitative research method was adopted for this study because it was considered most suitable in providing insight into barriers that prevented the participants from utilizing HCT services in Ebonyi State. The state was purposefully selected for the study because a recent study conducted by Agu, Mbachu, and Okeke (2020) revealed that adolescents and youths have low HCT uptake in the state. The sample size for the study was seventy (70) out-of-school youths. They comprised an equal number of male and female (M=35; female=35). Five LGAs were randomly selected out of the thirteen (13) in Ebonyi State. Purposive sampling was used to draw one participant each from the artisans groups, namely: barbers, apprentices, tailors, commercial Okada riders, NURTW members, mechanics and vulcanizers. This small group size allows equal participation from all members (Bhushan & Alok, 2017). The groups were homogeneous in terms of gender, marital status and educational status. Purposive sampling was used to draw out those who met the inclusion criteria. The major

inclusion was 'no' in response to the question "Do you know your HIV status?" The justification for this selection criterion was to accomplish the research purpose eg "barriers to HIV counseling and testing." Only those who volunteered to participate by signing and returning the consent form were recruited for the study.

The Focus Group Discussion was held with participants in neutral locations (hired offices in each LGA). This is to avoid negative or positive associations with a particular site, building, or location. The apartments were conducive, serene and had comfortable chairs in which participants were well seated in a circle form to enable each contributor have visual contact with one another. Ground rules and other logistics were clarified. The researcher facilitated the sessions for two reasons (1) she is UNICEF trained HCT Service provider, as a result, she possessed the requisite skills and knowledge of the topic under consideration and (2) she could speak Igbo which was the language adopted for the process. Different tools utilized to trigger good discussions included use of scenarios, case histories, visualization exercises etc. Two NYSC Corp members were trained as research assistants. One of the research assistants (RA1) recorded the discussions, using audio recording while the second (RA2) took note during the interview. The FGD questions were structured into a pre-existing framework aligned with the research objectives. The interview guide designed for the study focused on identifying factors that affected their willingness to undergo HCT within the three overarching themes. The overarching themes were the barriers for not utilizing HCT services. In all, a total of 3 sessions were held with each group, thereby making the FGD 30 sessions in all. The data collected was prepared, organised and

described. The logic of analysis was both deductive and inductive. Deductive analysis enabled the researcher to adopt a more open-ended and exploratory approach while deductive reasoning was used to narrow the analyses. Bhushan and Alok (2017), techniques for identifying themes from basic expressions in the text were also used.

Results

Four dominant themes emerged from the Focus Group Discussion and they are presented thus:

1. Fear surrounding testing and HIV positive result

Fear was the dominant theme that emerged for not uptaking HCT. Evidently, the findings from the FGD reveal that there was fear surrounding different aspects of HIV testing. One major fear is the fear of needles and syringes used for any medical procedure. One 18 year old female described her fear of injection as follows: *"Each time I have a fever, instead of going to hospital, I prefer to buy drugs from pharmacy stores and treat myself, I can't stand the pains of injection."* Some participants said they were scared of the unusual method of testing procedure which involves needle puncture that is often painful while others have the fear of social stigma associated with HIV screening. A particular male participant said:

I fear needle pain ohh! Even hearing the name alone makes me afraid. I know that there is no testing without needle pain, so what do I want tohmmmm .. give myself pain just like that.....? (PT7)

Another source of fear is knowing their HIV status, especially, when the result comes out positive. They said that in their community HIV infection is thought to be the result of personal irresponsibility that there is a

general belief that being infected with HIV was a result of moral fault (such as promiscuity or 'deviant sex'). That anyone who contracted HIV deserved to be punished and in some circumstances, even undertaking HCT would portray that someone is promiscuous. Some participants said shame and disgrace the person will face in his or her family and friends is enormous. That it would amount to losing the affection and supports of loved ones. A 21 old male participant said:

"How will I explain to my parents how I got infected with HIV? (PT11)

Emeka, a 20 year old male said, *"Noooo! Assuming your friend sees you and knows that, hmmm, it will be difficult oooo! ...For them to still relate with you. Go to the same party with you? Hmmm, odikwa egwu!"*

While the males were concerned about what their families and friends would say, the females fear of HCT has to do majorly with societal expectations. About 86% of the females who participated in the FGD said that they were scared of accessing HIV counselling and testing due to the fact that if they are found positive, it would jeopardize their chances of getting married because of the general belief that going to the centre is evidence of involvement in risky sexual behaviours which is considered an aberration for unmarried female folks. They added that it is a general belief that HIV can only be contracted through sexual intercourse. So seeing someone going to uptake test is indirectly saying that he or she has been exposed to sexual relationships. One 19 old female participant stated it this way;

Hmmm! That will be bye- bye to marriage, who wants to marry Keziah and Donatus (Keziah and Donatus are derogatory names in igbo language given to girls who are considered sexually active) (PT 2).

2. Low level of HIV and AIDS knowledge

The second consistent theme that emerged from the discussion was low level of HIV and AIDS knowledge as evidence from their responses to questions adopted from Carey & Schroder's (2002) HIV knowledge questionnaire (HIV-KQ-18). A high proportion of participants did not know that a person can get HIV from sexual intercourse (74.7%) and that risk can be reduced by being faithful (78.4%), abstaining from sex (82.0%) and using condoms (83.6%). They described HIV as sickness obtained from sex using these igbo words:

HIV is oya nwoke na Nwanyi (sickness of male and female)

Oya mmnikwu (sickness of sexual relationship)

Oya Oto-egbu (sweet and kill sickness)

In addition, misconceptions about HIV transmission were widespread. High proportions of participants believed that HIV infection can be acquired by swimming (32.8%), sharing meals (26.5%), shaking hands (24.6%) and speaking face to face (24%) with an infected person; 70.4% thought that mosquito bites could transmit HIV. With regards to availability of viral suppression treatment (Antiretroviral Therapy) participants strongly expressed the belief that all HIV and AIDS persons must die and there is no medication that can prevent it. During the interactions, the majority (63%) frequently described HIV and AIDS as the "sickness that is not preventable and treatable". To the participants, knowing one's HIV sero status was synonymous with possessing a death certificate. As a result, there is no need to find out when the person will die. This view was succinctly captured by one 23 year-old male participant as thus:

Why do you want to kill yourself by knowing your HIV status? Hmmmm.....-one thing must kill a male, disease or natural death so why do you want to carry your own certificate everywhere? (PT12)

Another 24 year male participant gave reason for none testing as "HIV and AIDS na the same thing, no difference at all. No need to test because people wey test never get treatment. (PT20).

According to Lilian (19 years old) "People say if you are HIV positive, it's better to die instead of living with the virus because HIV/AIDS does not have a cure. So what is the need for testing? (F11). Obiri na aja ocha, mikwu? (Sickness that must end in the soil)(PT 23)

Majority (62%) of the participants also argued that HIV and AIDS are the same. This argument that HIV and AIDS are the same is a major pointer to the level of ignorance concerning HIV and AIDS. Overall, low level and misconception still abound among the participants with regards HIV prevention, transmission and treatment. It could, therefore, be inferred that this shallow knowledge culminated to unwillingness of the participants to uptake HIV counselling and testing.

3. Low HIV risk perception

The third theme that emerged from the Focus Group Discussion was for non utilization of HCT services was low HIV risk perception. The participants were asked to rate themselves on using a scale of 100% the extent to which they were at risk of HIV infection. Emerging from the Focus Group Discussion is that participants have varying degrees of HIV risk perceptions which prevent them from accessing HCT. Of the 35 males, only 20% perceived themselves to be at high risk of getting infected with HIV; 25% perceived their risk as moderate, while 54.3% thought they are not vulnerable

to contracting HIV. The most commonly mentioned reason for both men (18%) who perceived themselves not to be at high HIV risk is having trusted sexual partners. Other reasons for low levels of perceived HIV risk included having one faithful sexual partner (24%); having a steady sexual partner (24%), using condoms correctly and consistently (19%) and not interested in opposite sex relationship (15%). The comments made by two male participants were worthy of note:

Male:

Male: *Am I a woman? Any male that calls himself a real Igbo male should not be afraid of any infections. My vein is 'akwaa akwuru' (push and stand ie. No shaking). (PT2).*

The female had higher risk perception, unlike their male counterpart. While the male attributed their lack of vulnerability to possession of strong blood, the females feel that they are not at risk because of God's protection over their life. They went further by justifying that God would not give one a challenge (disease) that is greater than him or her, hence one with God is majority. This assessment was clearly captured in one of the female participants' response:

Female: *By Gods grace, I know that I don't have AIDS. Did you notice Job's pains due to sins? 1 Kings 22:20-22). My hands are clean; I don't have reasons to be concerned about AIDS (AIDS pronounced as eight).*

4. Location of HCT centres at Ebonyi State

The fourth reason that emerged for non utilization of HCT services during discussion was ignorance of HCT centres at Ebonyi State. There was evidence that participants, especially those from the two remote LGAs, were not aware of the existence of HCT centres situated in Ebonyi State. They even went ahead to ask the researcher if the centre is also a clinic where women deliver babies.

About 18 participants specifically asked the question; *is it ulo ogwu? (Hospital)*. Only 12 (17%) of the participants know that there are three major HCT centres in Ebonyi state. The statement made by one male participants is worthy of note:

Male: *Some of us are busy searching for our daily bread. I don't even get time to go to shops, and attend to my customers how much more to just go to HTC centres which are very far. Will I be paid for leaving my shop? What will happen to my customers who will need my attention? (PT 9).*

The female responses also show similar trends like that of the male. Majority (29%) do not have ideas where the HCT centres in Ebonyi State are located while the 11 % who know the centres would not like to travel all the way from their communities to urban centres just because they want to obtain HCT which three of them called a 'death certificate'. One of the females captured it thus:

Female: *Oh! You mean that I will leave everything that I am supposed to do and travel all the way to Abakiliki just to go and obtain my death certificate? Then if I know that I have HIV what do I gain? Abeg I no get time to waste jo (F 13).*

Discussion

This study was designed to identify barriers to testing among out-of-school youths. The outcome highlighted both individual and community factors. A key issue that emerged from the study was that the participants were concerned about how the testing would be done. This outcome corroborates LicPsych, Säilä, Mikola and Ristolainen (2018) who reported that procedural needle-related distress has a continuum ranging from needle fear to more severe needle phobia and acts as barriers to treatment. This outcome suggests that offering different types of tests that do not

require blood samples for preliminary HIV screening could be a significant facilitator of HCT for out-of school youths. The alternative form of test could be rapid HIV test which detects HIV antibodies in the blood. The rapid test uses a blood specimen taken by poking the finger with a lance and then drawing some of this blood into a fine plastic tube. The rapid test does not require needle poking yet it is as accurate as a standard HIV test. However, for this test to be a successful demand-creation strategy, there will be a need for an education programme as an antidote to misinformation as to how these tests work, its availability and efficacy.

Similarly, the fear of a positive result due to previous sexual history was dominant.

Participants said they would rather not undergo testing than risk finding out that they were infected. Participants who perceived themselves to be more likely to have contracted HIV because of their risky sexual behaviour were found to be more reluctant to test, highlighting the interaction between beliefs and behaviour, and consistent with existing literature (Strauss, Rhodes, & George, 2015; Nwaozuru, Iwelunmor & Ong, 2019). This fear can be compounded by lack of knowledge of how to manage HIV positive results. Participants expressed fear and feelings of hopelessness relating to a positive test result due to perceived lack of support and judgemental attitude from family and friends. This outcome is plausible because youths are at a critical point in their development and it is important not to negate the effects of self-image. The influence of family support, perceptions and values on their own beliefs and behaviour is important for their social development and building of self image (Oginni, Adebajo & Ahonsi, 2017).

The second theme which emerged from this study was that the participants have low HIV knowledge. The outcome from this study gave credence to existing literature which highlighted the importance of knowledge about testing and HIV, though, there is controversy concerning the link between knowledge and action. For example, the theory of planned behaviour argues that behaviour is influenced by attitudes, subjective norms and perceived behavioural control and not by knowledge. However, a large body of knowledge argues that increased HIV/AIDS-related knowledge leads to the adoption of safe behavioural practices (Mnguni, 2019). The lack of knowledge possibly results in the youths avoiding HCT and the likely outcome. This outcome shows that lack of knowledge can be a significant barrier to testing (Ngwenya, Gumede, Shahmanesh, McGrath, Grant, & Seeley 2018). This corroborates Nwaozuru, Iwelunmor and Ong (2019) finding that knowledge about HIV and HCT, and the support systems in place, including family, friends and the community were critically important in influencing decisions. The implication of this finding is that with increasing knowledge and awareness of HIV prevention, efforts should be made to integrate information on the full testing approaches and prevention tools that are being offered. This is to ensure that young people have improved access to and knowledge of HIV testing services in the country.

Furthermore, another barrier to HCT that emerged during discussion was low risk perception. This outcome corroborates with Somefun (2019) who reported that participants in his study reported low risk perception for HIV despite being sexually active. Somefun's (2019) finding was in tandem with earlier report of Siddiqui,

Ghazal, Bibi, Ahmed, Sajjad and Fareeha, (2016) who found that low HIV risk perception has been a significant factor that hinders or limits uptake of HIV testing services among young people. A study, using rural youths in Oyo State, Nigeria, for example, reported association between self-perceived risk of HIV and voluntary HIV testing and counseling (Fawole & Al-ameen, 2015).

The final outcome of this study is that ignorance of location of HCT and the distance are potential barriers to uptake of HCT services. This finding corroborates a previous study which reported that increase in HCT uptake was directly related to the proximity of testing centres and the provision of services (Meremo, 2016; Strauss, Rhodes, & George, 2015). This finding is also in agreement with Aurélie Lépine (2014) who found that households located in rural areas are less likely to have access to a health facility. In addition, locations pose potential threats that relate to perceptions about the confidentiality of HCT, and the test results. A particularly important finding from this study is that the location of HCT is not only a proxy for convenience, but also is related more closely to confidentiality (Witzel, Rodger, Burns, Rhodes & Weatherburn, 2016). The implication of this finding is that an increase in the number of HCT centers and its location in a place that is confidential could improve the uptake rates of HCT.

Recommendations

On the strength of the four dominant themes that emerged from this study, it is hereby recommended that:

In order to improve out-of-school youth related knowledge of HIV Information regarding the HIV test and its benefits and consequences, information should be provided, using different media. This is in

addition to discussing the risks for transmission and how it can be prevented. The importance of obtaining the test as well as where to go for the services should be explained using Igbo language.

In order to overcome location barriers, Mobile voluntary HIV counselling and testing should be provided through mobile teams from a van equipped with HIV-testing facilities to their workplace. Another method of overcoming location access is the use of Home-based HIV counselling and testing. Under the home-based VCT approach, HIV counselors offer HIV counselling and testing services in clients' homes. Home-based VCT eliminates the cost of transport to the test site (Wolff et al., 2005) and increases uptake, especially, among women, as they do not need to seek permission for VCT or money for transport to VCT sites from male partners. This approach can also reduce stigma associated with being seen at the VCT clinic.

Counselling psychologists should allay the fear associated with HCT for out of youth by leveraging on other health personnel to ensure that they adhere to ethical process for conducting the testing. This includes defining the purpose of the test and benefits to the individuals being tested; and assurances of linkages between the site where the test is conducted and relevant treatment, care and other services, in an environment that guarantees confidentiality. They should also address the implications of a positive test result, including non-discrimination and access to sustainable treatment and care for people who test positive. They should also clarify the myths and misconceptions about it. In order to modify risk perceptions, four major independent but interrelated approaches can be used. These include information based approaches, coping skills acquisition,

counseling approaches, and contact with affected groups. Community level interventions have and possibly linking them with persons living with HIV to show healthy life even after being diagnosed of HIV.

Conclusion

This study examined barriers to uptake of HIV counselling and testing among out-of-school youths in Ebonyi State, Nigeria. Four dominant themes emerged in the group discussion. The themes are arranged according to their importance to the participants. It is fear surrounding different aspects of HCT that was dominant. Others include low level of HIV knowledge, HIV risk perception and ignorance of HCT Centres.

References

- Adelekan, A. L., Gabriel, M., Alhassan, G., Gloria, A., Ogundipe, L., Williams, S., & Patrick, A. (2017). Achievements and implications of HIV prevention programme among out of school youths: A systematic evaluation of HAF II project in Kogi State, Nigeria. *International Journal of Humanities and Social Science Invention*, 6, 53–58. [Google Scholar].
- Agu, I.C., Mbachu, C.O., Okeke, C. (2020). Misconceptions about transmission, symptoms and prevention of HIV/AIDS among adolescents in Ebonyi state, South-east Nigeria. *BMC Res Notes*. 13,244 <https://doi.org/10.1186/s13104-020-05086-2/adolescent/second-decade>. Accessed 8 Mar 2020.
- Bhushan, M, S. & Alok, S. (2017). Handbook Of Research Methodology. SN - 978-1-5457-0340-3
- Emeka-Nwabunnia, I., Ibeh, O. & Ogbulie, T. (2014). High HIV Sero-Prevalence among Students of Institutions of Higher Education in Southeast Nigeria. *Asian Pacific Journal of Tropical Disease*, 4, 159-168.
- Funke, J. (2017) How Much Knowledge Is Necessary for Action? In: Meusbürger P., Werlen B., Suarsana L. (eds). Knowledge and Action. Knowledge and Space, Springer, Cham. https://doi.org/10.1007/978-3-319-44588-5_6.
- George, G, Strauss, M, Chirawu P, Rhodes, B, Frohlich J, Montague C (2014). Barriers and facilitators to the uptake of voluntary medical male circumcision (VMMC) among adolescent boys in KwaZulu–Natal, South Africa. *Afr J AIDS Res*. 13.2:179–87. doi: 10.2989/16085906.2014.943253. [PubMed] [CrossRef] [Google Scholar].
- Jones, C.L., J. D. Scherr, C. L Brown, N.R. Christy, K. and Weave. J. (2015). The Health Belief Model as an Explanatory Framework in Communication Research: Exploring Parallel, Serial, and Moderated Mediation. *Health Commun*. 30. 6: 566–576.
- Kurth, A. E. Lally, M. A Choko, A. T Inwani, I. W. and Fortenberry J. D. (2015). HIV testing and linkage to services for youth. *J Int AIDS Soc*. 18. 2.1: 19433.
- Strauss, M., Rhodes, B. & George, G. A (2015). Qualitative analysis of the

- barriers and facilitators of HIV counselling and testing perceived by adolescents in South Africa. *BMC Health Service* 15, 250 <https://doi.org/10.1186/s12913-015-0922-0>.
- LicPsych O. Säilä, H., Mikola, K. & Ristolainen, R. (2018). Fear of Injections and Needle Phobia Among Children and Adolescents: An Overview of Psychological, Behavioral, and Contextual Factors. *Health and Nursing* 4.
- Meremo, A. (2016). Barriers to accessibility and utilization of HIV testing and counseling services in Tanzania: experience from Angaza Zaidi programme. *The Pan African Medical Journal*. 2016;23:189. doi:10.11604/pamj.23.189.5683.
- Mnguni. L. (2019). An investigation into the curriculum ideology that foregrounds the presentation of HIV/AIDS content in selected South Africa Life Sciences textbooks. *International Journal of STEM Education* 6:1.
- National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF) (2017). Multiple Indicator Cluster Survey 2016-17, Survey Findings Report[pdf].
- Ngwenya, N., Gumede, D., Shahmanesh, M. McGrath, N. Grant, A. & Seeley. J. (2018). Community perceptions of the socio-economic structural context influencing HIV and TB risk, prevention and treatment in a high prevalence area in the era of antiretroviral therapy. *African Journal of AIDS Research* 17.1:72-81.
- Nwaozuru, U., Iwelunmor, J., Ong, J.J. (2019). Preferences for HIV testing services among young people in Nigeria. *BMC Health Serv Res* 19, 1003 <https://doi.org/10.1186/s12913-019-4847-x>
- Oginni, A. B, Adebajo, S. B, Ahonsi, B. A. (2017). Trends and determinants of comprehensive knowledge of HIV among adolescents and young adults in Nigeria: 2003-2013. *Afr J Reprod Health*. 21. 2:26–34.
- Ostermann J, Njau, B, Brown, D. S, Mühlbacher, A, Thielman, N. (2014). Heterogeneous HIV testing preferences in an urban setting in Tanzania: results from a discrete choice experiment. *PLoS One*. 9(3):e92100.
- Siddiqui, T. Ghazal, R. Bibi, S. Ahmed, S. Sajjad, W. & Fareeha, S. (2016). *Neglected Tropical Diseases*. 10.11: e0005129.
- Strauss, M. Rhodes, B. and George G. (2015). A qualitative analysis of the barriers and facilitators of HIV counselling and testing perceived by adolescents in South Africa. *BMC Health Serv Res*. 15: 250.
- Thomas, K, Fawole O, Al-ameen M. (2015). HIV/AIDS voluntary counseling and testing (VCT): perspectives of rural youths in Oyo State, Nigeria. *Int J Agric Econ Rural Dev*. 7.1:52–8.

- UNAIDS 'AIDSinfo' (accessed August 2020). PEPFAR 'Large National Survey Shows Smaller HIV Epidemic in Nigeria Than Once Thought and Highlights Key Gaps Toward Reaching HIV Epidemic Control'
- Somefun, O. D. (2019). Religiosity and sexual abstinence among Nigerian youths: does parent religion matter? BMC Public Health. 2. 191:416.
- UNAIDS, Data (2019). [[https:// www.unaids.org/en/ resources/ documents /UNAIDS-data](https://www.unaids.org/en/resources/documents/UNAIDS-data)].
- UNAIDS 'AIDSinfo' (accessed August 2020). PEPFAR 'Large National Survey Shows Smaller HIV Epidemic in Nigeria Than Once Thought and Highlights Key Gaps Toward Reaching HIV Epidemic Control'
- WHO. (2019.). Health for the World's Adolescents: A second chance in the second decade [Internet]. Who/Fwc/Mca/14.05. Geneva
- Witze,l T. C, Rodger A. J, Burns, F. M, Rhodes, T, Weatherburn P. (2016). HIV self-testing among men who have sex with men (MSM) in the UK: a qualitative study of barriers and facilitators, intervention preferences and perceived impacts. PLoS One. 11(9):e0162713.