

Translating Evidence into Public Health Practice

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Abstract

Human Immunodeficiency Virus (HIV) is the third leading cause of deaths in Nigeria. Lack of clear understanding of where new infections are occurring may imply that state HIV prevention programmes are not driven by evidence. Several evidences are available but not accessible and in other cases, accessible but not applied in planning and designing context-specific HIV interventions. This has led to a reversal or slow pace of controlling the epidemic in Nigeria for the past decades. A retrospective analysis of health data was collated and analyzed. Results were compared with established baseline in project interventions to determine if this available information were considered by policy makers, health planners and programme designers as HIV interventions are developed for states and at national level. Findings reveals that most states have used data to tailor-guide interventions leading to significant changes in behavior, uptake of HIV services and corresponding decline in HIV prevalence.

Keywords: evidence-informed interventions, planning, HIV control

1. Introduction

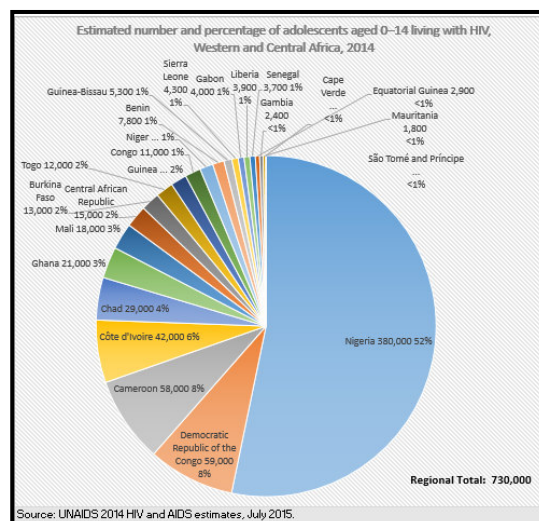
HIV epidemic is generalized and heterogeneous, affecting different population sub-groups. The pattern of HIV transmission changes over time. It is probable that the main risk factors and drivers of the epidemic may have changed over time as evidence reviewed in this work could provide. This lack of clear understanding of where new infections are occurring may imply that state HIV prevention programmes are not driven by evidence and may result in a mismatch between populations most at need and those that receive the available resources. HIV/AIDS have been chosen for this analysis based on the profound interest given to it by the government and critical stakeholders. This paper, therefore, conducts a critical review of this public health issue to justify how research and data can improve public health practices. A comparative analysis of sources of data and evidence will be discussed as it relates to their validity and weaknesses.

2. Describing the Burden of HIV/AIDS – Causal factors, trends and impact on population

The major problem to DALY, social wellbeing, and development have been attributed to HIV/AIDS. The first case of AIDS in Nigeria was reported in 1986 and has since spread into all regions of the country (Adebayo et al., 2010; Gayawan et al, 2013). This public health issue is not bounded by race, population, level of education or culture; its impact cut across all populations leading to the generalized epidemic (NARHS, 2013). As at 2012, Nigeria HIV prevalence has slightly dropped to 3.2% with estimated 3.5 million persons living with HIV (FoN, 2009; FMOH, 2013); this has ranked Nigeria third in global HIV burden after India and South Africa (FMOH, 2013).

Human Immunodeficiency Virus (HIV) is the third leading cause of deaths in Nigeria, estimated at 9% (CDC, 2013). Research evidence in Fig. 1 revealed that Nigeria also accounts for 52% of HIV burden among adolescent younger than 14 in West and Central Africa region (UNICEF, 2015). Amidst interventions, Nigeria moved from 11% new HIV infection rate in 2000 among adolescent to 27% in 2014 (UNICEF, 2015), thereby postulating a progression in the prevalence and ineffectiveness in programming.

Several risk factors contribute in fueling HIV transmission. Sexually Transmitted Infections (STIs) are known to increase the rate of transmission of HIV. Therefore, the prevalence of STI and its distribution amongst the various groups will affect the rate of HIV transmission through sex (UNAIDS, 2015). The prevalence of HIV infection was estimated to increase among various groups that reported having unusual genital discharge or a genital ulcer in the last 12 months (BENSACA, 2012). This evidence also informs the need for health planners to incorporate STI programming as a vertical programme within the HIV response



Source: UNAIDS 2014 HIV and AIDS estimates, July 2015.
Fig. 1: Estimated number and percentage of adolescents aged 0-14 living with HIV, western and Central Africa, 2014

mechanism.

Key drivers of HIV epidemic as enumerated in NARHS (2013) cut across stigma and discrimination, transgenerational and transactional sex as well as multiple sexual partnering. The fear of discrimination against PLWHA and their families promotes nondisclosure and prevents people from seeking treatment, care and support further increasing the likelihood of the spread of HIV infection. Relatively, sexual activity involving partners with an age variation of ten years and above and in exchange for favour or gift are notable drivers of HIV epidemic. Also, the act of having more than one sexual partner puts people at risk of HIV infection.

Wilton (2012) asserted that HIV is transmitted majorly through unprotected sexual intercourse with an infected person. Other modes of transmission include the use of infected unsterilized skin-piercing equipment, mother-to-child transmission, as well as blood transfusion and organs transplant. The risk of contracting HIV is higher with anal sex than other forms of sex – vagina or oral (Wang et. al., 2009). This empirical evidence further revealed the route of the epidemic and would guide where interventions should focus.

The second highest mode of HIV transmission is from mother to child. Empirical evidence and routine data have shown that 1 out of 40 birth delivered by HIV-positive mothers is likely to have HIV (Nkwo, 2012). Under 15 HIV infection annually estimated at 90% is contracted through mother to child transmission (De Cock et. al., 2000). UNAIDS (2015) further postulated that 260,000 children (younger than 14years) were infected with HIV in 2015. This data accounts for 36% of children infected with HIV in Africa (UNICEF, 2015). This evidence informed the need to prioritise Prevention of Mother to Child Transmission interventions to curb HIV morbidity in children. PMTCT coverage has also significantly increased. For instance, available primary data (in Table 1) reveals that PMTCT coverage increased from 12.7% in 2010 to 29.9% in 2014 at the national level (FACA Factsheet, 2016). FACA Factsheet (2016) further asserted a corresponding increase in the number of PMTCT sites and number of HIV-positive pregnant women receiving Anti-retroviral (ARVs) to reduce the risk of mother to child transmission of HIV.

Table 1: PMTCT Coverage National Vs FCT from 2010 – 2015

PMTCT Sites: National Vs. FCT from 2010 - 2015			Number of HIV-positive Pregnant women who received ARVs to reduce risk of mother to child transmission of HIV			PMTCT Coverage (%): National Vs. FCT		
Year	National	FCT	Year	National	FCT	Year	National	FCT
2010	675	24	2010	26133	808	2010	12.7	22.5
2011	684	37	2011	37868	1358	2011	18.3	33.9
2012	1320	37	2012	40465	2739	2012	19.4	61.5
2013	5622	79	2013	57871	3423	2013	27.5	68.1
2014	6546	102	2014	63350	2806	2014	29.9	50.3

(Data source: FCT District Health Management Information System, 2015)

Innovations adopted in controlling transmission of HIV from an infected mother to child should be sustained. Documentation on promising practices can help improve regional planning and programming. Future analysis of routine and research data will help in the design of prospective programme and projects.

HIV/AIDS interventions are faced with socio-cultural myths and misconceptions. These myths and misconceptions have increased stigma among people living with HIV and increase risks of HIV. Some myths and misconceptions are perceived low-risk perception, HIV been transmitted through kissing, handshaking and HIV been a disease for sex workers. Robertson et. al., (2012) posited that myths and misconception produce stigmatising behaviour leading to misinformed decisions. HIV interventions focusing on behaviour change without addressing myths and misconceptions are likely to be ineffective.

3. Comparing Data Sources used in addressing Public Health problem

Evidence needed to improve public health programming can be obtained from primary data and/or secondary sources. Primary data sources mainly refer to data from routine activities conducted or documentation of daily transactions or services provided to clients. This can include health records, assessment forms, reporting and summary sheets, directories, database, and guidelines. Secondary data are mainly obtained from publications, policies, research, studies and surveys conducted to establish a broad level of change or impact. Secondary data sources for HIV response in Nigeria are derived from demographic population-based surveys – National Demographic and Health Survey, Epidemiological studies – Integrated Behavioural and Biological Scientific Survey, HIV Mode of Transmission Study and National HIV/AIDS, Reproductive Health Survey.

CDC (2015) argued that primary data are slightly distinct than secondary data attributed to specificity and appropriateness. Most primary data act as sources for generating secondary data. Secondary data is also faced with ethical issues of causing no harm to the individual and allowing for autonomy (Tripathy, 2013). Similarly, confidentiality is esteemed with primary data as data integrity is considered important, thus limiting access and prompt use. It's important not to rely on one source of data in designing and/or improving HIV/AIDS

programme.

Primary and secondary data are used interchangeably depending on what interpretation is expected. Primary data are needed to improve planning and coordination (Calman, et. al., 2012) while secondary change is needed to measure the trend in expected change. Electronic records managed for HIV and any other related disease can improve public health surveillance and interventions (Birkhead, Klompas & Shah, 2015). Making significant progress in preventing and controlling the prevalence of HIV can greatly depend on the strength of primary data cum surveillance strength.

Several biases are expressed for both primary and secondary data sources. Tripathy (2013) argued that primary data are inconsistent, faced with manipulations and greatly does not demonstrate actual change, example reduction in HIV prevalence. Similarly, secondary data sources are viewed as been controlled and can be manipulated to the researcher depending on what needed to be measured (Olsen, Sabroe & Sorensen, 2016). There is also an experience of having conflicting information from different sources. This might challenge inference and design of interventions.

4. Improving Public Health Practice with Evidence from Data and Research

Use of evidence to improve public health practice has become important. Evidence from NARHS identified clear areas where current interventions have failed to address. The survey revealed a low level of health communication which remains a critical element of all HIV behaviour change interventions (Fakolade et al, 2010). Communication intervention has proved to be effective and increase service demand leading to change in knowledge, attitude, behaviour, and practice. NARHS (2013) finding revealed that traditional and most appreciated communication channels were not adopted to achieve a maximum reach of people, especially in the rural area. This called for a review of Nigeria's Behaviour Change Communication Strategy to accommodate approaches that are traditional, cost effective and satisfactory especially to the rural audience.

Secondly, acceptance and willing to be tested for HIV significantly dropped in 2012 as against 2007 and become an unacceptable fact by stakeholders. Considering nationwide scale-up HIV testing plan with the goal of ensuring everyone in Nigeria is tested, this result was a shock. What was interesting to know is that national approach adopted more of provider-initiated HIV test than client-initiated test (Adebayo et al, 2010). A lot was required to ensure that barriers surrounding myths and misconceptions are significantly reduced (Adebayo et al, 2012) to allow for Nigerian population to access HIV test as fundamental human rights and needful for their wellbeing. As such, a review of HIV testing approach was made to inculcate community mobilisation and campaigns.

Third, the fact that HIV prevalence among the wealthiest compared to the poorest was high given some concerns to stakeholders. This data correlated that HIV prevalence increased among persons who were involved in sexual intercourse either as transactional sex, or sex for gift or favour (Ankomah et al, 2013). This could reveal a relationship that knowing the Nigeria context of using affluence to mislead the needy, it may have been possible attribution to increased HIV prevalence among persons who were between the age ranges of 35-39 (4.4% high) (Filmer & Pritchett, 2001). Similarly, the finding further contradicts belief and perceptions that HIV is a condition of the poor (Fatusi et al, 2003). Critical stakeholders are now considering interventions that target the wealthy and an approach that's most sustainable taking into consideration the bias and norms of this population.

5. Conclusion

Improvement in public health interventions and achieving quality impact can be possible if health planners and implementers can pay attention to data. This becomes a call for National Planning Ministry and related ministries of government to ensure that plans developed towards addressing HIV interventions are based on available evidence and unbiased interpretations of findings.

References

- Adebayo, S. B., Anyanti, J., Ankomah, A. & Ekweremadu, B., (2010). Understanding the Relationship between HIV/AIDS, Gender, and Marital Status: Evidence from a National Population-based HIV Testing in Nigeria. USA: Philadelphia
- Adebayo, S. B., Fakolade, R., Anyanti, J., Ekweremadu, B., Ladipo, O. & Ankomah, A., (2012). 'Modelling Level, Trend and Geographical Variations in Stigma and Discrimination against People Living with HIV/AIDS in Nigeria.' *Journal of Social Aspects of HIV/AIDS*, 8(3) pp. 115-127.
- Ankomah, A., Adebayo, S. B., Anyanti, J., Ladipo, O. & Ekweremadu, B., (2013). 'Determinants of Condom Use by Men in Extramarital Relationships in Nigeria.' *HIV/AIDS – Research and Palliative Care*, 5, pp. 1–13.
- Benue States Agency for the Control of AIDS (2012). HIV Modes of Transmission and Prevention Response Analysis, p. 15.

- Birkhead, G. S., Klopmas, M., N. R., Shah (2015). 'Uses of electronic health records for public health surveillance to advance public health.' *Annual Rev Public Health*, 18 (35), pp. 1. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/25581157>, (accessed: 30/6/2016).
- Calman, N., Diane, H., Lurio, J., W. Y., Wu, (2012). 'Strengthening Public Health and Primary Care Collaboration through Electronic Health Records.' *Am J Public Health*, 102 (11), pp. 2-3. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3477979/>, (accessed: 30/6/2016).
- Center for Disease Control and Prevention, (2013). Top 10 Causes of Death in Nigeria. Available at: <http://www.cdc.gov/globalhealth/countries/nigeria/why/>, (accessed: 29/6/2016).
- Center for Disease Control and Prevention, (2015). Data & Benchmarks. Available at: <https://www.cdc.gov/stltpublichealth/cha/data.html>, (accessed: 30/6/2016).
- Center for Disease Control and Prevention, (2015). HIV Risk Behaviors. Available at: <http://www.cdc.gov/hiv/risk/estimates/riskbehaviors.html>, (accessed: 29/6/2016).
- De Cock, K. M., Fowler, M. G., Mercier, E., I., de Vincenzi et. al., (2000). 'Prevention of mother-to-child HIV transmission in resource-poor countries: Translating research into policy and practice.' *J. Am Med Assoc*, 283, p. 4. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/10703780>, (accessed 29/2/2016).
- Fakolade, R., Adebayo, S. B., Anyanti, J. & Ankomah, A., (2010). 'The Impact of Exposure to Mass Media Campaigns and Social Support on Levels and Trends of HIV-related Stigma and discrimination in Nigeria: Tools for Enhancing Effective HIV Prevention Programme.' *Journal of Biosocial Science*, 42 (3), pp. 395-407.
- Fatusi, A. O., Ijadunola, K. T., Ojofeitimi, E. O., Adeyemi, M. O., Omideyi, A. K., Akinyemi, A. & Adewuyi, A. A., (2003). 'Assessment of Andropause Awareness and Erectile Dysfunction among Married Men in IleIfè, Nigeria.' *Ageing Male*, 6 (2), pp. 79 – 85
- FACT Agency for the Control of AIDS (2016). Annual Factsheets. p. 3, Abuja.
- Federal Ministry of Health, (2013). National HIV/AIDS and Reproductive Health Survey. Federal Ministry of Health, Abuja.
- Federal Republic of Nigeria Official Gazette (2009). 'Legal Notice on Publication of 2006 Census Final Results.' *Official Gazette of the Federal Republic of Nigeria*, 96 (2).
- Filmer, D. & Pritchett, L. H., (2001). 'Estimating Wealth Effects without Expenditure Data – Or Tears: An Application to Educational Enrolments in the States of India.' *Demography*, 28(1), pp.115-132.
- Gayawan, E. & Adebayo, S. B., (2013). 'A Bayesian Semiparametric Multilevel Survival Modelling of Age at First Birth in Nigeria.' *Demographic Research*, 28(45), pp.1339-1372.
- Nkwo, P. O., (2012). 'Prevention of Mother to Child Transmission of Human Immunodeficiency Virus: The Nigerian Perspective.' *Ann Med Health Sci Res*, 2 (1) p. 2. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3507117/>, (accessed: 29/6/2016).
- Olsen, J., Sabroe, S., & H. T., Sorensen, (2016). 'Framework for Evaluation of Secondary Data Sources for Epidemiological Research.' *International Journal of Epidemiology*, 25 (2), pp. 1. Available at: <http://ije.oxfordjournals.org/content/25/2/435.full.pdf>, (accessed: 30/6/2016).
- Robertson, A. M., Ojeda, V. D., Nguyen, L., R., Lozada, et. al. (2012). 'Reducing harm from HIV/AIDS misconceptions among female sex workers in Tijuana and Ciudad Juarez, Mexico: A cross-sectional analysis.' *Harm Reduct J*, 9, p. 2. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3477120/#B9>, (accessed: 29/6/2016).
- Tripathy, J. P., (2013). 'Secondary Data Analysis: Ethical Issues and Challenges.' *Iran J Public Health*, 42 (12), p. 1. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4441947/>, (accessed: 30/6/2016).
- UNAIDS (2015). HIV and AIDS Estimates. Available at: <http://www.unaids.org/en/regionscountries/countries/nigeria>, (accessed: 29/6/2016).
- UNICEF (2015). Global Summary of HIV Epidemic in Women and Children. Available at: <http://data.unicef.org/hiv-aids/emtct.html>, (accessed: 29/6/2016).
- Wang, L., Boily, M. C., R. F., Baggaley, et. al., (2009). 'Heterosexual risk of HIV-1 infection per sexual act: systematic review and meta-analysis of observational studies.' *Lancet Infectious Diseases*, 9 (2) pp. 118-129.
- Wilton, J., (2012). Putting a number on it: The risk from an exposure to HIV. Canada's Source for HIV and Hepatitis C Information. Available at: <http://www.catie.ca/en/pif/summer-2012/putting-number-it-risk-exposure-hiv>, (accessed: 29/6/2016).