Texila International Journal of Academic Research
Special Edition Aug 2023
DOI: 10.21522/TIJAR.2014.SE.23.01.Art002

Effects of Enhance Adherence Counselling on Viral Load Suppression Among High Viral Load HIV Seropositive Patients in a Nigerian Tertiary Health Facility

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Abstract

Background: EAC helps clients overcome adherence hurdles and improve ART adherence. This study examines the effect of EAC on viral load suppression. Method: This quantitative study aims to determine the impacts of enhanced adherence counselling (EAC) on viral load in Defence Headquarters Medical Center, Abuja, Nigeria. The medical records of HIV clients on ART included in EAC were extracted from the hospital and analyzed to determine the impacts of EAC on viral loads suppression of clients in the program. Result: Almost half of the PLWHIV in EAC have been on ART for 6-10 years (47.6%), 42.9% for more than ten years, and 9.5% have been on ART for 1 – 5 years. 76.2% of respondents were on the 1st line of the ART regimen, while 23.8% were on the 2nd line. 97.6% of clients enrolled for EAC were at the WHO stage I HIV infection, and only one (2.4%) was in stage IV. 50% tested for viral load was due to viral blip, 28.6% due to unsuppressed viral load and 21.4% were tested to monitor their VL. Furthermore, of the 33 clients with viral load results, 14 (42.4%) had very low-level viremia (<50 copies/ml), 10 (30.3%) had low-level viremia (50–1000 copies/ml), but 9 (27.3%) still had high-level viremia (>1000 copies/ml). 42.9% enrolled for EAC because of pill burdens, 31.0% due to irregular dosing frequency, 19.0% because of pill social problems, and 2.1% were people lost to follow-up returned..

Keywords: *Antiretroviral therapy, EAC, Viral load.*

Introduction

Enhanced adherence counselling (EAC) is a continuous and repeatable process that includes a structured assessment of current adherence, exploration of specific barriers the patient must overcome, assistance in identifying solutions and addressing barriers, and development of an individualized adherence interventional plan that improves viral load suppression and reduces subsequent treatment failure (1). EAC's objective is to assist clients in identifying and gaining insight into their unique adherence hurdles, exploring strategies to overcome these barriers, and developing a thorough adherence plan to improve ART adherence (2,3). Enhance adherence counselling program's objective is to increase ART adherence to maximize treatment outcomes.

The EAC package includes an assessment of patients' specific needs, education sessions, and adherence counselling, as well as the 5As Access, Advise, Agree, Assist, and Arrange application when providing adherence support to

Received: 08.06.2023 ***Accepted: 04.08.2023*** ***Published on: 30.08.2023***

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people with detectable viral loads (4). If ART is not adhered to, the viral load will increase above 1000 copies/ml. A persistently high viral load indicates non-adherence. When patients are started on ART, they are watched and assisted in improving their adherence. To increase viral suppression, enhanced adherence counselling is needed (5,6).

The primary goals of drug adherence counselling are as follows:(a) Assist patients in making informed treatment decisions based on their unique circumstances, (b) Assist the patient in developing a habit of medication adherence, (c) Strengthen the patient's ability to manage and maintain the therapy.

Treatment adherence has evolved into a critical medical, financial, psychosocial, and health policy concern today. Before initiating ART, the WHO recommends a period of education and preparation targeted at maximizing adherence.

It is critical to design a practical procedure or program that optimizes patient goals, increases medication adherence to ART, and guides patients through the many stages of drug adherence counselling. Promoting treatment adherence in HIV patients requires a systematic approach.

A 2017 study conducted in Western Nigeria discovered that 86.5 percent of the individuals experienced viral load suppression after thorough adherence counselling (7,8). The results of a 2017 study conducted in Western Nigeria on the 90-90-90 ambitious targets found that 787 (86.5 percent) of the individuals experienced viral load suppression of less than 1000 RNA copies per ml over the time of observation after thorough adherence counselling (7,8). This study examines the effect of EAC on viral load suppression.

Materials and Methods

The Federal Capital Territory (FCT), also known as Abuja Federal Capital Territory, was established as an administrative territory in central Nigeria in 1976. The Federal Capital Territory consists of 6 different area Councils: Abaji, Abuja Municipal, Bwari, Gwagwalada, Kuje and Kwali. These six councils cover a total land area of approximately 7,290 km² (9). According to world population review statistics, Abuja has a population of 3 464,123 (10).

According to the National Agency for the Control of AIDS (NACA), Abuja has a total HIV/AIDS prevalence rate of 1.5% (11). The study population comprised HIV seropositive clients initiated on ART in Defence Headquarters Medical Center, Abuja, Nigeria, from January 2019 to December 2021. A structured data extraction template was designed using Microsoft Excel to extract clients' data involved in EAC from the hospital database. A trained abstractor was employed to conduct the data extraction and reviews. The researcher checked for completeness, clarity, and consistency of data. Data quality assurance was also carried out to ensure quality and reliable data extraction. The extracted data were exported into IBM-SPSS version 28.0 data analysis. Descriptive statistics were performed, presenting outcomes as frequency tables, percentages, pie, and bar charts.

Results

The demographics of PLWHIV included in EAC, whose file reviewed at the defence headquarters medical centre, Abuja shows that of the 42 cases, 22 (52.4%) were males and with age group 31 – 50. A higher proportion attained secondary (45.2%), 32 (76.2%) were married, and 19 (45.2%) were employed (Table 1).

Table 1. Background Characteristics of HIV Clients Enrolled for EAC in Defence Headquarters Medical Centre Abuja

Characteristics	Frequency (n=42)	Percentage
Gender		
Male	20	47.6
Female	22	52.4
Age category		
10-30	7	16.1
31-50	22	52.4
Above 50	13	31.0
Highest level of education		
Primary	8	19.0
Secondary	19	45.2
Tertiary	15	35.7
Marital Status		
Married	32	76.2
Single	8	19.0
Separated	2	4.8
Occupation		
Students	5	11.9
Unemployed	5	11.9
Employed	19	45.2
Business	13	31.0

Almost half of the PLWHIV enrolled in EAC have been on ART for 6-10 years (20, 47.6%), 18 (42.9%) for more than ten years, and 9.5% have been on ART for 1 – 5 years, as shown in Figure 1.

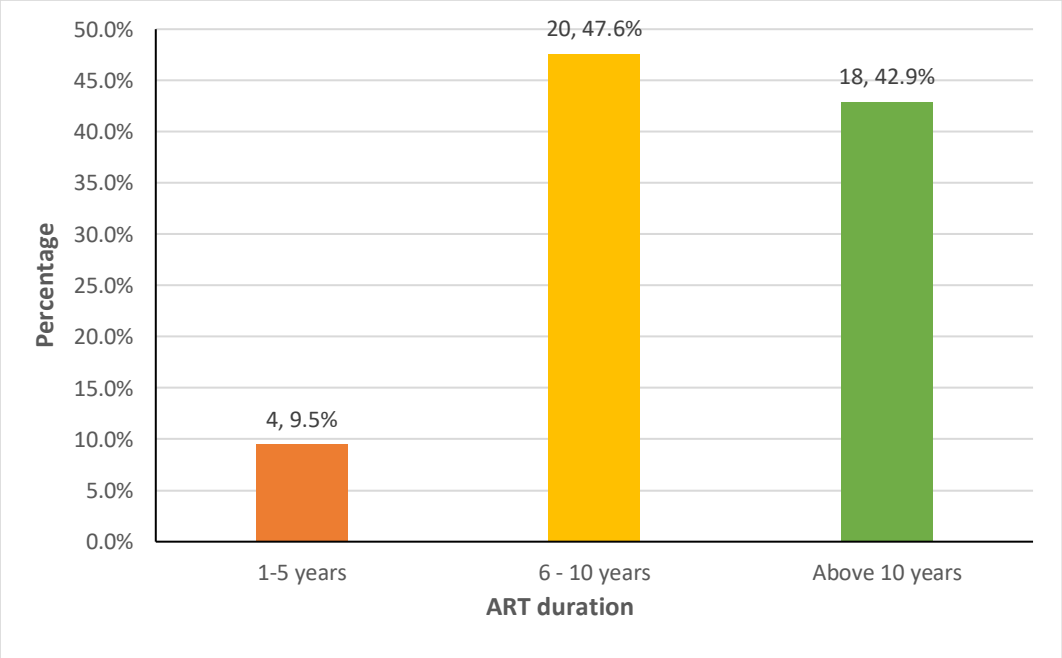

Figure 1. Length of ART of PLWHIV Enrolled in EAC

As shown in Figure 2, a high proportion of the PLWHIV enrolled in EAC (76.2%) was on the 1st line of the ART regimen, while 23.8% were on the 2nd line.

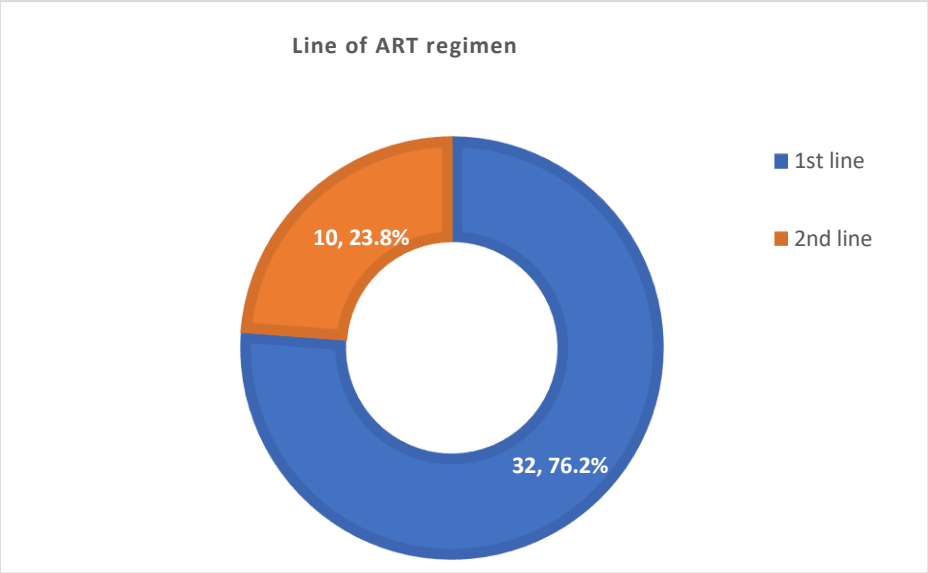

Figure 2. EAC Enrolled Clients' ART Regimen

A significant proportion (97.6%) of clients enrolled for EAC were at the WHO stage I HIV infection, and only one (2.4%) was in stage IV (Figure 3).

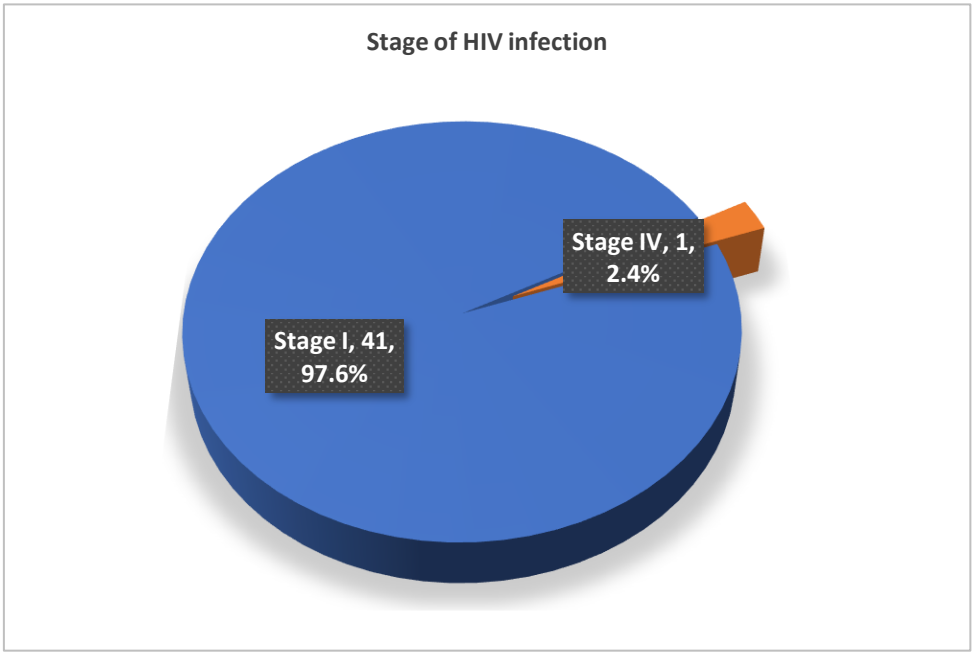

Figure 3. WHO HIV Stages of EAC Enrolled Clients

The reason for testing VL for HIV clients enrolled in EAC is shown in Figure 4. Fifty percent said it was due to viral blip, 28.6% due to unsuppressed viral load and 21.4% were tested to monitor their VL.

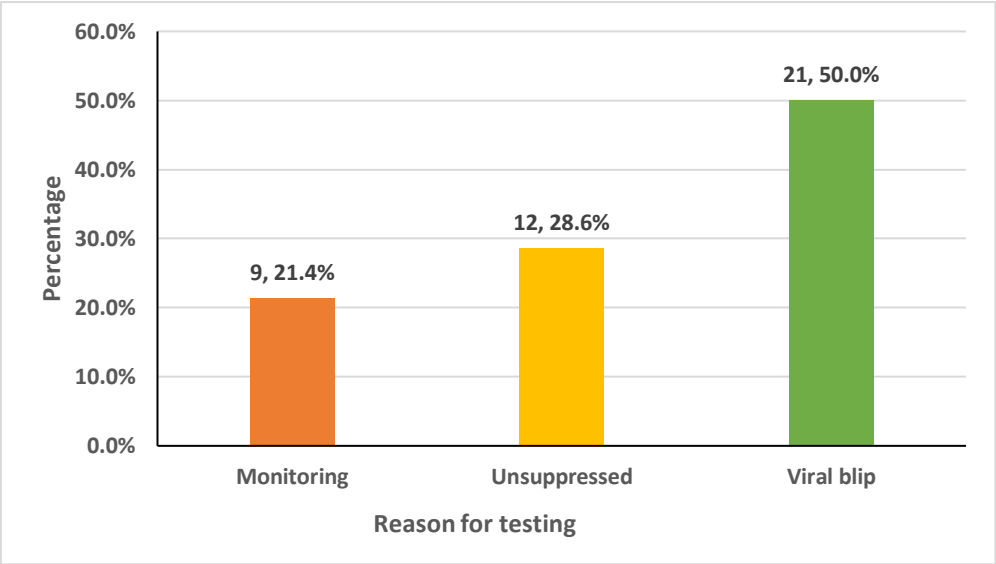

Figure 4. Reason for Viral Load Test

As reported by PLWHIV clients enrolled for EAC, the majority (42.9%) were included in the program because of pill burdens, 31.0% due to irregular dosing frequency, 19.0% because of pill social problems, and 2.1% were people lost to follow-up returned (Figure 5).

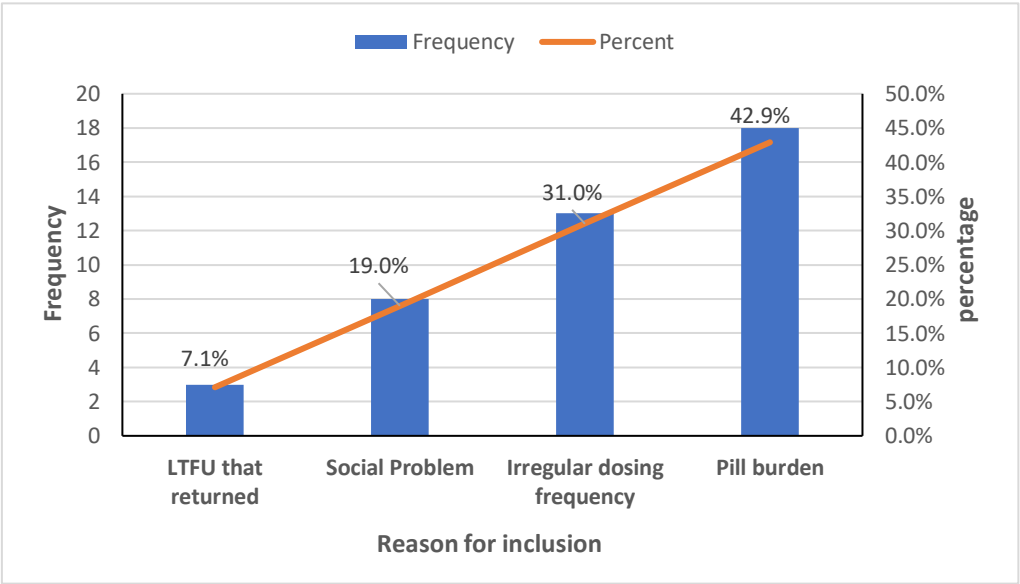

Figure 5. HIV Client's Reason for EAC Inclusion

As shown in Table 2, of the 33 clients with viral load results, 14 (42.4%) had very low-level viremia (<50 copies/ml), 10 (30.3%) had low-level viremia (50–1000 copies/ml), but 9 (27.3%) still had high-level viremia (>1000 copies/ml).

Table 2. Viral Load of PLWHIV after Three Months in the EAC Programme

VL status	**Frequency**	**Percent**
Very low-level viremia (<50 copies/ml)	14	42.4
Low-level viremia (50–1000 copies/ml)	10	30.3
High-level viremia (>1000 copies/ml)	9	27.3
Total	**33**	**100.0**

Discussion

The findings of this study show that a larger number (47.6%) of HIV patients enrolled in EAC used ART consistently for 6-10 years, whereas the lowest percentage (9.5%) used it for one to two years. This indicates that most of them have been on ART for a long time. The possible reason for this could be because ART slows the progression of HIV to AIDS and reduces infections and mortality among those living with HIV (12). In addition, ART lowers viral load in HIV-infected individuals, thereby reducing the risk of onward HIV transmission (13–15).

Some studies suggest that earlier initiation of ART may also improve retention rates in care and medication adherence and promote the more rapid achievement of viral load suppression (16,17). As a result of this evidence, the World Health Organization (WHO) now recommends immediate initiation of ART for all people diagnosed with HIV, regardless of CD4 count (18). This was similar to the findings by (19) and (20).

However, the findings of this study were contrary to a study by (21), which discovered a lower rate among those who have been on ART for a long time. Based on the findings of this study, a high proportion of the PLWHIV enrolled in EAC (76.2%) was on the 1st line of the ART regimen, while 23.8% were on the 2nd line. The study also revealed that most HIV patients who joined EAC were at WHO stage I HIV infection, and a large percentage of these patients were on the first line of their ART regimen.

The findings of this study were contrary to a study carried out by (20), who discovered that the majority of the participants were on the WHO clinical stage 2 and 3 and 2nd line ART regimen.

This study shows that most participants had low viral load viremia levels after attending enhanced adherence counselling. This shows that EAC is very much effective in suppressing the HIV viral load to an undetectable level. This was consistent with a study by (22) and (23). The possible justification for this could be due to the timely completion of their EAC session, which might have contributed to better adherence and response to ART therapy (24,25). This could also be as a result of the patient taking ART for a long time, as recorded in this study. A person's viral load is considered "durably undetectable" when all viral load test results are undetectable for at least six months after their first undetectable test result. This means that most people will need to be on treatment for 7 to 12 months to have a durably undetectable viral load (26).

Since p*oor adherence to ART is* the most common reason for high viral load, WHO recommends enhanced adherence counselling (EAC) for 3–6 months for people with high viral load count before diagnosing first-line treatment failure (27). It also aids in adhering to ART treatment and suppresses viral load to an undetectable level (23). However, the findings from this study were contrary to the result of a study by (6) and (28) and (29) in which EAC does not influence viral load suppression. It may also be worth exploring strategies to address the pill burden, such as the use of combination ART drugs, to improve adherence and reduce the burden of taking multiple medications. Further research is needed to fully understand the factors contributing to viral blips and identify ways to mitigate this issue.

Conclusion

According to this study's findings, most participants enrolled in EAC who have been on ART for 6-10 years were on their first line of ART regimen and WHO stage 1 infection level. Also, the findings of this study show that the majority of the HIV client had low viral load after three months on EAC. This show that EAC was effective in suppressing the viral load of HIV patient. Furthermore, pill burden was found to be a major reason for inclusion to EAC, likewise viral blip for viral load testing.

Overall, this study shows that EAC positively impacts viral load suppression among PLWHA. Given these results, it is recommended to continue promoting and expanding the EAC program to reach more HIV patients and improve their health outcomes.

Conflict of Interest

Authors declare no conflicts of interest

Acknowledgement

Nil.

References

[1] WHO. Adapting and Implementing New Recommendations on HIV Patient Monitoring. Geneva, Switzerland, 2017. 2017.

[2] Ministry of Health Uganda. Uganda Clinical Guidelines 2016. Retrieved on 21/6/2018. Minist Heal Uganda [Internet]. 2016;1–1142. Available from: http://health.go.ug/content/uganda-clinical-guidelines-2016.

[3] WHO. Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection. Recommendations for a Public Health Approach. 2016;(2nd ed):1–429.

[4] MoH. National Training Curriculum for Roll Out of the Consolidated Guidelines for the Prevention and Treatment of Hiv and Aids in Uganda, 2020. 2020;142–170.

[5] Diress G, Dagne S, Alemnew B, Adane S, Addisu A. Viral Load Suppression after Enhanced Adherence Counseling and Its Predictors among High Viral Load HIV Seropositive People in North Wollo Zone Public Hospitals, Northeast Ethiopia, 2019: Retrospective Cohort Study. AIDS Res Treat. 2020;2020.

[6] Nasuuna E, Kigozi J, Babirye L, Muganzi A, Sewankambo NK, Nakanjako D. Low HIV viral suppression rates following the intensive adherence counseling (IAC) program for children and adolescents with viral failure in public health facilities in Uganda. BMC Public Health. 2018;18(1).

[7] Usman S, Oluwaniyi O, Olubayo G, Akinmurele T, Agboola G, Abodunde F, et al. 90-90-90 Ambitious Targets: Achieving the Last 90 of the UNAIDS Targets in Western Nigeria. Int STD Res Rev. 2017;6(2):1–9.

[8] Fatunsi E, Ariyo A, Suraju A, Oguejiofor I, Tomori M, Owolagba FE, et al. The progress towards achieving the UNAIDS ambitious viral suppression target among adults living with HIV in South-Western Nigeria. 2020;2(1):8–12.

[9] Villa africa reality. Abuja - FCT | All About Nigeria's Federal Capital City. 2021;1–1. Available from: https://www.villaafrika.com/fct-abuja-city-profile/.

[10] World Population. Review Abuja population 2021. 2021.

[11] Naiis. Nigeria Prevalence Rate - NACA Nigeria [Internet]. 2019 [cited 2021 Oct 18]. p. 1–1. Available from: https://naca.gov.ng/nigeria-prevalence-rate/.

[12] Hernán MA. The effect of combined antiretroviral therapy on the overall mortality of HIV-infected individuals. Aids. 2010;24(1):123–37.

[13] Bock NN, Emerson RC, Reed JB, Nkambule R, Donnell DJ, Bicego GT, et al. Changing antiretroviral eligibility criteria: Impact on the number and proportion of adults requiring treatment in Swaziland. J Acquir Immune Defic Syndr [Internet]. 2016;71(3):338–44. Available from: https://doi.org/10.1097/QAI.0000000000000846%0APMID:26361174.

[14] Loutfy MR, Wu W, Letchumanan M, Bondy L, Antoniou T, Margolese S, et al. Systematic Review of HIV Transmission between Heterosexual Serodiscordant Couples where the HIV-Positive Partner Is Fully Suppressed on Antiretroviral Therapy. PLoS One [Internet]. 2013;8(2). Available from: https://doi.org/10.1371/journal.pone.%0A0055747 PMID: 23418455. Erratum in.

[15] Attia S, Egger M, Müller M, Zwahlen M, Low N. Sexual transmission of HIV according to viral load and antiretroviral therapy: Systematic review and meta-analysis. Aids. 2009;23(11):1397–404.

[16] Jain V, Byonanebye DM, Amanyire G, Kwarisiima D, Black D, Kabami J, et al. Successful antiretroviral therapy delivery and retention in care

among asymptomatic individuals with high CD4+T-cell counts above 350 cells/ml in rural Uganda. Aids [Internet]. 2014;28(15):2241–9. Available from: https://doi.org/10.1097/QAD.%0A00000000000000401 PMID: 25022596.

[17] Hall HI, Tang T, Westfall AO, Mugavero MJ. HIV care visits and time to viral suppression, 19 U.S. jurisdictions, and implications for treatment, prevention and the National HIV/AIDS Strategy. *Plos One*. 2013;8(12).

[18] World Health Organization. Guideline on When To Start Antiretroviral Therapy and on Pre-Exposure Prophylaxis for HIV. Geneva World Heal Organ. 2015;(September):1–76.

[19] Priscilla F., Mlay A. Factors associated with viral load suppression among HIV/AIDS adult patients on art medication. A case of Kisarawe district, pwani region. 2019.

[20] Wakooko P, Gavamukulya Y, Wandabwa JN. Viral load Suppression and Associated Factors among HIV Patients on Antiretroviral Treatment in Bulambuli District, Eastern Uganda : A Retrospective Cohort Study. 2020.

[21] Rangarajan S, Colby DJ, Giang LT, Bui DD, Hung Nguyen H, Tou PB, et al. Factors associated with HIV viral load suppression on antiretroviral therapy in Vietnam. *J Virus Erad*. 2016;2(2):94–101.

[22] Awolude OA, Olaniyi O, Moradeyo M, Abiolu J. Virologic Outcomes Following Enhanced Adherence Counselling among Treatment Experienced HIV Positive Patients at University College Hospital, Ibadan, Nigeria. 2021;10(1):53–65.

[23] Diress G, Dagne S, Alemnew B, Adane S, Addisu A. Viral Load Suppression after Enhanced Adherence Counseling and Its Predictors among High Viral Load HIV Seropositive People in North Wollo Zone Public Hospitals, Northeast Ethiopia, 2019 : Retrospective Cohort Study. 2020;2020.

[24] Geretti AM, Smith C, Haberl A, Garcia-Diaz A, Nebbia G, Johnson M, et al. Determinants of virological failure after successful viral load suppression in first-line highly active antiretroviral therapy. Antivir Ther. 2008;13(7):927–36.

[25] Peltzer K, Friend-Du Preez N, Ramlagan S, Anderson J. Antiretroviral treatment adherence among HIV patients in KwaZulu-Natal, South Africa. *BMC Public Health*. 2010;10.

[26] NIAID. 10 Things to Know About HIV Suppression | NIH: National Institute of Allergy and Infectious Diseases [Internet]. 2020 [cited 2023 Jan 26]. p. 1–5. Available from: https://www.niaid.nih.gov/diseases-conditions/10-things-know-about-hiv-suppression.

[27] Brooks K, Diero L, DeLong A, Balamane M, Reitsma M, Kemboi E, et al. Treatment failure and drug resistance in HIV-positive patients on tenofovir-based first-line antiretroviral therapy in western Kenya. *J Int AIDS Soc*. 2016;19(1).

[28] Anne L, Jobanputra K, Parker LA, Azih C, Okello V, Maphalala G. Factors Associated with Virological Failure and Suppression after Enhanced Adherence Counselling, in Children, Adolescents and Adults on Antiretroviral Therapy for HIV in Swaziland Authors Factors Associated with Virological Failure and Suppression afte. 2021;

[29] Talent Bvochora Id, Id SS, Takarinda KC, Bara H. Enhanced adherence counselling and viral load suppression in HIV seropositive patients with an initial high viral load in Harare, Zimbabwe : Operational issues. 2019;444:1–13.