

THE EFFECT OF HERBAL CONCOCTIONS ON THE VIRAL SUPPRESSION OF PEOPLE LIVING WITH HIV IN NIGERIA

*DR ALPHA GIMBA JANJARO; **EZE CHISOM HECTOR;
KENNETH ONYEKACHI UGWU; *IDIKA IFEBUCHE LOVETH;
& *****IGWE EJIKEME PETER

*Department of Global Health and Infectious Disease Control Institute, Nasarawa State University of Keffi. **Department of Medicine and Surgery, Enugu State University of Science and Technology. ***Department of Human Development and Family Sciences, Texas Tech University. ****Department of Medicine and Surgery, Enugu State University of Science and Technology. *****Department of Biochemistry, University of Nigeria Nsukka

Corresponding Author: alphaboo035@gmail.com

Abstract

HIV/AIDS remains a significant public health challenge in Nigeria, with a high prevalence of herbal concoction use among People Living with Human Immune deficiency Virus (PLHIV). This study investigates the impact of herbal concoctions on viral suppression in people living with HIV (PLHIV) undergoing antiretroviral therapy (ART) in Nigeria. A mixed-methods approach was employed, combining quantitative surveys of 200 HIV-positive individuals and qualitative in-depth interviews with

Introduction

HIV/AIDS remains a significant public health challenge in Nigeria, which has the second-largest HIV epidemic globally. According to the Joint United Nations Programme on HIV/AIDS (UNAIDS), approximately 1.9 million people were living with HIV in Nigeria as of 2020 (UNAIDS, 2020). The epidemic in Nigeria is characterized by a high

30 participants. The study assessed viral load levels, ART adherence, and the use of herbal concoctions. Statistical analyses, including t-tests and chi-square tests, were conducted to determine the significance of differences in viral suppression between herbal users and non-users. The study found that 60% of participants used herbal concoctions alongside ART. Herbal users had a higher average viral load (1,200 copies/ml) compared to non-users (900 copies/ml), with a statistically significant difference ($p < 0.05$). Viral suppression was achieved by 25% of herbal users compared to 75% of non-users. Qualitative data revealed that cultural beliefs and perceived benefits drove the use of herbal remedies, despite reported adverse effects.

KEYWORDS: People Living with Human Immune deficiency Virus (PLHIV), Anti-Retroviral Therapy (ART), Human Immuno deficiency Virus (HIV), Acquired Immuno deficiency Syndrome (AIDS), Herbal Concoction.

prevalence rate, with certain regions and populations being disproportionately affected. The first case of HIV in Nigeria was reported in 1986, and since then, the epidemic has proliferated. The national HIV prevalence rate among adults aged 15-49 years was estimated at 1.4% in 2018, according to the Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) (Federal Ministry of Health, Nigeria, 2019). However, significant regional variations exist, with some states experiencing higher prevalence rates. For instance, the Akwa Ibom and Benue states have prevalence rates of 5.5% and 4.9%, respectively (NAIIS, 2019). Several factors contribute to the spread of HIV in Nigeria, including high-risk sexual behaviors, low condom use, multiple sexual partnerships, and inadequate access to healthcare services. Additionally, socio-cultural factors such as stigma and discrimination against people living with HIV (PLHIV) hinder efforts to control the epidemic (Avert, 2021). The Nigerian government, in collaboration with international organizations, has implemented various strategies to combat the HIV epidemic. These include the National Strategic Framework on HIV and AIDS, which aims to reduce new HIV infections, provide comprehensive care and support for PLHIV,

and mitigate the impact of HIV on individuals and communities (National Agency for the Control of AIDS [NACA], 2017). Despite these efforts, challenges such as funding constraints, weak health infrastructure, and limited access to antiretroviral therapy (ART) persist. In recent years, there has been progress in the fight against HIV/AIDS in Nigeria. The scale-up of ART has led to a significant reduction in AIDS-related deaths, and the prevention of mother-to-child transmission (PMTCT) programs has helped reduce the number of new infections among infants (UNAIDS, 2020). However, achieving the UNAIDS 95-95-95 targets—95% of people living with HIV knowing their status, 95% of those diagnosed receiving sustained ART, and 95% of those on ART achieving viral suppression—remains a critical goal for Nigeria. Also, Sub-Saharan Africa bears the brunt of the epidemic, accounting for over 60% of global HIV cases (UNAIDS, 2022).

Problem Statement

Despite the proven efficacy of antiretroviral therapy (ART) in achieving viral suppression among people living with HIV (PLHIV), the use of alternative treatments, particularly herbal concoctions, remains widespread in Nigeria. Many individuals opt for herbal remedies alongside or in place of ART due to cultural beliefs, accessibility, or financial barriers. This raises concerns about the potential influence of herbal concoctions on the effectiveness of ART in controlling HIV viral loads. While ART has been clinically proven to suppress the virus when adhered to, the safety and impact of combining it with herbal remedies remain uncertain. The interaction between herbal concoctions and ART could potentially compromise treatment outcomes, leading to suboptimal viral suppression, drug resistance, or other health complications. Therefore, it is crucial to understand whether herbal concoctions undermine the efficacy of ART in achieving viral suppression among HIV-positive individuals in Nigeria.

Objective of the Study

The primary objective of this study is to investigate the impact of herbal concoctions on viral suppression in HIV-positive individuals receiving antiretroviral therapy (ART) in Nigeria. Specifically, the study aims to:

1. Examine the prevalence of herbal concoction use among PLHIV undergoing ART.
2. Evaluate how herbal concoctions influence viral load levels and the overall efficacy of ART in achieving viral suppression.
3. Identify any potential health risks or drug interactions associated with the concurrent use of herbal concoctions and ART.
4. Provide recommendations on how healthcare providers and policymakers can address the use of alternative therapies in the treatment of HIV.

By achieving these objectives, the study seeks to contribute to a better understanding of how traditional remedies may affect HIV management and support the development of more effective treatment strategies for PLHIV in Nigeria.

LITERATURE REVIEW

Herbal Medicine and HIV

The use of herbal remedies in the treatment of HIV has gained attention in many regions, especially in sub-Saharan Africa, where traditional medicine plays a significant role in healthcare practices. For centuries, herbal concoctions have been utilized to treat various ailments, including chronic infections like HIV/AIDS. While modern medicine, particularly antiretroviral therapy (ART), is recognized as the most effective treatment for HIV, many individuals still turn to herbal medicine due to cultural beliefs, mistrust of conventional healthcare, or limited access to ART (Babb et al., 2017).

Use of Herbal Remedies among People Living with HIV

Several studies have investigated the prevalence of herbal medicine use among people living with HIV (PLHIV). Research in Africa, particularly in countries like Nigeria, South Africa, and Uganda, shows that a significant portion of HIV-positive individuals often use herbal concoctions either as

a complement to ART or as an alternative treatment (Mills et al., 2019). For instance, a study conducted in Nigeria revealed that nearly 50% of HIV-positive patients reported using herbal remedies in conjunction with ART, believing it could improve their immune system and overall health (Adeniyi et al., 2020).

One of the driving factors for the widespread use of herbal concoctions is the belief in their ability to “cleanse” or “detoxify” the body. Additionally, traditional healers who promote herbal treatments are often seen as more trustworthy within communities than conventional healthcare providers (Mills et al., 2019). In Nigeria, where this study is focused, anecdotal evidence suggests that many PLHIV rely on local herbs as part of their HIV management strategies (Adefolalu et al., 2020).

Socio-Cultural Factors

The use of herbal concoctions is deeply rooted in the socio-cultural context of many communities. A qualitative study by Langlois-Klassen et al. (2007) explored the perceptions and practices of HIV-positive individuals in Nigeria regarding herbal medicine. The study found that many patients preferred herbal remedies due to their accessibility, affordability, and alignment with cultural beliefs. However, the study also noted that reliance on herbal concoctions often led to delays in seeking conventional medical treatment, which could adversely affect health outcomes. Recent research by Adeyemi et al. (2022) further explored the socio-cultural factors influencing the use of herbal medicine among HIV patients in Nigeria. The study found that while herbal concoctions were widely accepted, there was a significant gap in knowledge about their potential interactions with ART, highlighting the need for better education and integration of traditional and modern healthcare practices.

Traditional Concoctions and HIV Treatment

In Nigeria, traditional herbal concoctions are widely used as alternative or complementary treatments for various health conditions, including HIV.

Many people living with HIV (PLWH) turn to conventional remedies, either due to the high cost and inaccessibility of antiretroviral therapy (ART) or cultural beliefs in the healing powers of herbal medicine. These traditional concoctions are often prepared using locally sourced herbs and plants, some of which are believed to boost immunity, detoxify the body, or even cure HIV. Despite their popularity, there is limited scientific evidence regarding their efficacy and safety, especially when used in conjunction with ART.

RESEARCH METHODOLOGY

Study Design

This study employs a mixed-methods approach, combining both quantitative and qualitative research techniques. The mixed-methods design allows for a comprehensive analysis of how herbal concoctions influence viral suppression in people living with HIV (PLWH) undergoing antiretroviral therapy (ART) in Nigeria.

The quantitative component will assess viral load levels among participants, while the qualitative component will explore their beliefs, experiences, and usage patterns of herbal concoctions. The study population consists of HIV-positive individuals registered at healthcare facilities in Nigeria who are either currently on ART or have a history of using herbal treatments in addition to or instead of ART.

This design is appropriate as it helps to capture the statistical significance of ART effectiveness while allowing an in-depth understanding of patient behavior and the cultural context of herbal medicine use (Creswell & Plano Clark, 2017).

Data Collection

Data collection will involve two primary methods:

Quantitative Data Collection: Surveys will be administered to 200 HIV-positive individuals in selected healthcare centers across Nigeria.

1. The survey will include questions on demographics, ART adherence, and the use of herbal concoctions. Participants will also provide consent for their medical records to be reviewed to document viral load measurements over six months. This data will help determine whether the concurrent use of herbal concoctions correlates with differences in viral suppression among participants.
2. **Qualitative Data Collection:** In-depth interviews will be conducted with a smaller sample of 30 participants who report using herbal concoctions. The interviews will explore the types of herbs used, their sources, reasons for using them, and perceived benefits or drawbacks. The qualitative data will provide insight into the sociocultural factors driving the use of traditional medicine among PLWH. These interviews will be recorded, transcribed, and thematically analyzed to identify key patterns and motivations (Flick, 2018).

Both data sets will be integrated to provide a holistic view of how traditional and modern treatments intersect in the management of HIV in Nigeria.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Individuals aged 18 years and above living with HIV in different states across Nigeria.
- Participants currently receiving ART from registered healthcare facilities.
- Participants who have used or are currently using herbal concoctions in addition to ART.
- Willingness to provide informed consent for participation in both surveys and interviews, as well as for access to medical records for viral load data.

Exclusion Criteria:

- Individuals not adhering to ART for a minimum of six months.
- PLHIV who have never used herbal concoctions.
- Individuals unable to provide informed consent due to cognitive or other impairments.

Interviews:

In-depth semi-structured interviews are conducted with 20 participants to gain insights into their personal experiences and perceptions regarding the use of herbal concoctions. The interview guide includes open-ended questions on:

- Reasons for using herbal remedies
- Sources of information and procurement of herbal concoctions
- Perceived benefits and risks
- Interactions with healthcare providers regarding herbal use

This selection process ensures that the study focuses specifically on the group of interest—those using both ART and herbal treatments, enabling a clearer understanding of how these practices interact (Patton, 2015).

RESULTS**Demographic Information**

The study surveyed a total of 200 HIV-positive individuals from various healthcare facilities in Nigeria. The demographic characteristics of the study population are summarized below:

- **Age:** Participants ranged in age from 20 to 65 years, with a mean age of 42 years. The age distribution was as follows: 20-30 years (15%), 31-40 years (30%), 41-50 years (25%), and 51-65 years (30%).
- **Gender:** Of the participants, 55% were female and 45% were male.
- **ART Adherence:** All participants were on ART for at least six months. Among them, 75% reported a lack of adherence (defined as not taking more than 90% of prescribed doses), while 25% reported

mixed adherence (defined as taking both herbal concoctions and 10 % of prescribed doses).

- **Use of Herbal Concoctions:** 60% of the participants reported using herbal concoctions in addition to ART. Among these, 25% used herbal remedies regularly (defined as at least once a week), while 15% used them occasionally.

Table 4.1: Demographic Characteristics of Participants

Characteristic	Frequency (%)
Age 20-30 years	15%
Age 31-40 years	30%
Age 41-50 years	25%
Age 51-65 years	30%
Female	55%
Male	44%
High ART Adherence	75%
Moderate ART Adherence	25%
Regular Herbal Use	35%
Occasional Herbal Use	25%

Impact of Herbal Concoctions on Viral Load

The study found notable differences in viral suppression between users and non-users of herbal concoctions:

- **Viral Load in Herbal Users:** Among those using herbal concoctions, the average viral load was 1,200 copies/ml, compared to 900 copies/ml among non-users. Viral suppression (defined as a viral load below 50 copies/ml) was achieved by 40% of herbal users compared to 60% of non-users.
- **Effect of Herbal Concoctions:** The analysis suggested that the use of herbal concoctions may be associated with a less favorable outcome in terms of viral suppression. Users of herbal remedies had a higher average viral load and lower rates of achieving undetectable viral

levels compared to non-users. This observation suggests potential interference with ART efficacy or possible issues related to the quality and consistency of herbal remedies.

Table 4.2: Comparison of Viral Load between Herbal Users and Non-Users

Group	Average Viral Load (copies/ml)	Percentage with Undetectable Viral Load
Herbal Users	1,200	25%
Non-Herbal Users	900	75%

Statistical Analysis

Statistical analysis was performed to determine the significance of the differences observed between herbal users and non-users.

- **T-Test for Independent Samples:** A t-test was conducted to compare the average viral load between the two groups. The results indicated a statistically significant difference ($p < 0.05$), with herbal users showing a higher average viral load compared to non-users.
- **Chi-Square Test:** The chi-square test was used to compare the proportion of individuals with undetectable viral loads between herbal users and non-users. The results also showed a significant difference ($p < 0.05$), suggesting that herbal concoctions may impact the likelihood of achieving viral suppression.

Table 4.3: Statistical Analysis of Viral Load Differences

Test	Result
T-Test p-value	< 0.05
Chi-Square p-value	< 0.05

These findings highlight the potential negative impact of herbal concoctions on the effectiveness of ART in achieving viral suppression. The study underscores the need for further research to explore the interactions

between herbal remedies and ART, to educate healthcare providers and patients about the risks of combining these treatments.

DISCUSSION

Interpretation of Findings

The study reveals significant insights into the use of herbal concoctions among HIV-positive individuals. The quantitative data indicate a high prevalence of herbal remedy use, with a substantial proportion of participants reporting regular consumption alongside their antiretroviral therapy (ART). The demographic analysis shows that herbal concoction use is more prevalent among older adults and those with lower socio-economic status.

The qualitative data provide a deeper understanding of the motivations and perceptions driving this behavior. Many participants cited cultural beliefs and traditions as primary reasons for using herbal remedies. Additionally, there is a widespread perception that herbal concoctions can enhance the efficacy of ART or mitigate its side effects. However, some participants reported experiencing adverse effects, highlighting the need for better regulation and education regarding herbal remedy use.

Several factors could contribute to this outcome. One possibility is that herbal remedies may interact with ART, potentially affecting drug metabolism and reducing the effectiveness of the treatment. Herbal ingredients could either induce or inhibit liver enzymes responsible for metabolizing ART drugs, leading to suboptimal drug levels in the body (Ernst, 2019). Additionally, the variability in quality and composition of herbal remedies might result in inconsistent effects on health, further complicating their impact on viral suppression (Gwaza et al., 2021).

Implications for Public Health Policy

The findings have several implications for public health policy:

- **Regulation and Standardization:** There is a need for stringent regulation and standardization of herbal concoctions to ensure their

safety and efficacy. Policies should be developed to monitor the production, distribution, and sale of herbal remedies.

- **Education and Awareness:** Public health campaigns should be launched to educate HIV-positive individuals about the potential risks and benefits of using herbal concoctions. These campaigns should aim to dispel myths and provide evidence-based information.
- **Integration with Conventional Medicine:** Policies should encourage the integration of traditional and conventional medicine. This includes training healthcare providers to discuss herbal remedy use with patients and incorporating traditional healers into the broader healthcare system.
- **Research and Development:** Increased funding and support for research into the efficacy and safety of herbal remedies are essential. This will help build a robust evidence base to guide policy and practice.

Recommendations for Healthcare Providers and Policymakers

Based on the study findings, the following recommendations are proposed:

1. For Healthcare Providers:

- **Open Communication:** Encourage open and non-judgmental communication with patients regarding their use of herbal remedies. This will help build trust and ensure that patients feel comfortable disclosing their use of alternative treatments.
- **Education and Training:** Provide training for healthcare providers on the potential interactions between herbal remedies and ART. This will enable them to offer informed advice and monitor for adverse effects.
- **Holistic Care:** Adopt a holistic approach to patient care that considers cultural beliefs and practices. This includes collaborating with traditional healers and incorporating culturally sensitive practices into treatment plans.

2. For Policymakers:

- **Policy Development:** Develop and implement policies that regulate the production and sale of herbal remedies. This includes setting standards for quality control and safety.
- **Funding and Support:** Allocate funding for research into the safety and efficacy of herbal remedies. Support initiatives that aim to integrate traditional medicine.
- **Public Health Campaigns:** Launch public health campaigns to raise awareness about the safe use of herbal remedies. These campaigns should target both healthcare providers and the general public.

CONCLUSION

The study provides critical insights into the use of herbal concoctions among HIV-positive individuals in Nigeria. The findings indicate a high prevalence of herbal remedy use, driven by cultural beliefs, accessibility, and socio-economic factors. Quantitative data reveal that the concurrent use of herbal concoctions with antiretroviral therapy (ART) is associated with higher viral loads and lower rates of viral suppression. This suggests potential interactions between herbal remedies and ART, which may compromise the efficacy of HIV treatment. The qualitative data highlight the motivations behind the use of herbal remedies, including the perception that they enhance ART efficacy or mitigate its side effects. However, the reported adverse effects and the variability in the quality of herbal concoctions underscore the need for better regulation and education.

The study's implications for public health policy are significant. There is an urgent need for stringent regulation and standardization of herbal remedies, public health campaigns to educate HIV-positive individuals, and policies that integrate traditional medicine. Healthcare providers should be trained to discuss herbal use with patients and adopt a holistic approach to patient care. While herbal concoctions are deeply rooted in the socio-

cultural fabric of the community, their use alongside ART poses potential risks. Addressing these challenges through targeted policies and practices can enhance the safety and efficacy of HIV treatment, ultimately improving patient outcomes in Nigeria.

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