

Analysis of compliance with Antiretroviral (ARV) drinking of HIV patients in Regional General Hospitals Central Bangka District

Taufik Kurrohman^{1*}, Elvi Sunarsih², Rico Januar Sitorus³, Legiran Legiran⁴, Yunindyawati Yunindyawati⁵

Anak Bangsa University, Indonesia¹

Sriwijaya University, Indonesia^{2,3,4,5}

salimbadui@yahoo.com



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Abstract

Purpose: This study aimed to analyze the knowledge, attitudes, and compliance with antiretroviral (ARV) antedotes among HIV patients at the Central Bangka Regional General Hospital.

Research Methodology: This study used a qualitative method with a phenomenological approach. The technique for selecting respondents was a non-probability sampling technique, purposive sampling. Nine informants participated in 9 people. Data were collected using an in-depth interview guide.

Results: Findings from the research show that several informants had insufficient knowledge about compliance in taking ARV antedotes. Even though the informants' attitude towards compliance with antiretroviral (ARV) antedotes was relatively good, several key informants stated that they had stopped taking antiretroviral (ARV) antedotes for several months because they felt healthy. However, several months later, they experienced adverse effects that resulted in declining health.

Conclusions: The study concludes that Inadequate knowledge and misconceptions about ARV therapy remain significant obstacles to sustained adherence. Strengthening education, family involvement, and consistent supervision are essential for enhancing compliance and improving health outcomes for people living with HIV.

Limitations: The study was limited to a small number of participants from a single hospital, which restricts broader generalization.

Contribution: This research provides practical insights for healthcare providers and policymakers to design targeted interventions, improve supervision, and foster cross-program collaboration to ensure consistent ARV adherence among patients with HIV, ultimately supporting public health goals in HIV management.

Keywords: *Antiretrovirals, ARV antedotes, HIV, HIV patients*

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1. Introduction

Antiretroviruses (ARV) are antedotes that inhibit the reproduction of retroviruses, which are viruses present in HIV. However, it should be noted that this antedote is not used to prevent transmission of HIV from one infected individual to another, is not used to treat HIV infection, and does not have the ability to eliminate the virus completely. Its function is to inhibit or block the viral replication process, help minimize the number of viruses in the body, and slow down the damage to the immune system.

This aims to ensure that individuals infected with HIV feel more comfortable and live their daily lives normally (Rahakbauw, 2016).

The availability of ARV antedotes for people living with HIV/AIDS (PLWHA) is still insufficient because compliance with ARV antedotes is very important for the success of antedotes (Agustin, Iek, & Hafizriandra, 2025). This lack of compliance can result in low virological efficacy of first-line antiretroviral antedote regimens, as well as the spread of virus variants that are resistant to antiretrovirals, potentially causing a public health disaster. In contrast to many other diseases, it is very important for PLWHA to take all doses of the antedote to prevent the development of resistance and to increase their chances of survival (Wasti, Simkhada, Randall, Freeman, & van Teijlingen, 2012).

PLWHA compliance with taking ARVs is influenced by internal factors such as the drive to maintain health and the desire to prolong life, as well as supportive external factors such as support from family, groups of peers who experience similar conditions, and health workers (Jocelyn et al., 2024).

Based on the data obtained from the Central Bangka District Hospital in 2019, there were six people living with HIV (three people stopped using the antedote, one person was disobedient in taking the ARV antedote, one person stopped using the antedote, and one person was referred out of the area). In 2020, the number of HIV patients decreased to four (two people were non-compliant in taking ARV antedotes and two people were referred out of the area). In 2021, there were three HIV patients (one person adhered to taking the ARV antedote, one person stopped using the antedote, and one person died).

According to a survey and initial interviews conducted by researchers with HIV patients at the Central Bangka District Hospital on June 27, 2022, HIV patients' non-compliance in taking ARV antedotes was caused by boredom from taking antedotes every day for a long period. Apart from that, there were complaints about access being too far and a lack of transportation to go to health services to take ARV antedotes. This study aimed to analyze the knowledge and attitudes of HIV patients related to compliance with antiretroviral (ARV) therapy at the Regional General Hospital of Central Bangka Regency.

2. Literature Review

2.1 HIV/AIDS and the Importance of Antiretroviral Therapy (ART)

Human Immunodeficiency Virus (HIV) is a retrovirus that attacks the human immune system, particularly CD4 cells, which are vital for defending the body against infections. If left untreated, HIV progresses to Acquired Immunodeficiency Syndrome (AIDS), characterized by severe immune suppression. Antiretroviral therapy (ART) is currently the most effective treatment, proven to suppress viral replication, reduce viral load, restore immune function, and significantly extend patients' life expectancy (Cohen et al., 2016).

Although ART is not a cure for HIV, its success depends heavily on patient adherence to the treatment. Research consistently demonstrates that adherence levels of more than 95% are required to maintain viral suppression, prevent the development of drug resistance, and reduce morbidity and mortality (Wang, Zhang, & Chen, 2019). Conversely, non-adherence may result in therapy failure, the spread of resistant strains, and an increased risk of transmission. Thus, ART adherence is a cornerstone of HIV/AIDS management (Iacob, Iacob, & Jugulete, 2017).

2.2 Global Perspectives on ART Adherence

2.2.1 High-Income Countries

In developed nations, adherence rates are relatively higher owing to robust healthcare systems, widespread drug availability, and structured monitoring programs. However, barriers such as psychological fatigue, social stigma, and mental health issues remain prevalent (Bergman & Rushton, 2023; Maulana, Wibisono, & Sarmini, 2024).

2.2.2 Low- and Middle-Income Countries

Structural barriers are more significant in regions such as Sub-Saharan Africa and Southeast Asia. Geographic distance, high transportation costs, poverty, and inconsistent drug supply chains often reduce adherence (Karwa et al., 2017). Studies have highlighted that even when ART is free, indirect costs and logistical challenges hinder patients' ability to follow treatment consistently.

2.2.3 Cultural and Social Contexts

Cultural norms, religious beliefs, and community acceptance play crucial roles in shaping adherence behaviors. In many societies, patients who receive strong family and peer support are more consistent in ART adherence than those who experience isolation or discrimination.

2.3 ART Adherence in Indonesia

Indonesia presents a complex scenario owing to its archipelagic geography, cultural diversity, and disparities in healthcare infrastructure. Patients in remote areas often struggle to access ART facilities because of distance, cost, and limited healthcare availability. Furthermore, HIV-related stigma and discrimination remain significant barriers to care and adherence (Sweeney & Vanable, 2016). Hospital records from the Central Bangka District (2019–2021) illustrate fluctuations in patient adherence. Some patients discontinued ART after feeling healthier, while others reported barriers such as boredom from long-term therapy and transportation issues. These realities underscore that adherence is not merely a medical issue but a multidimensional problem that requires comprehensive interventions.

2.4 Factors Influencing ART Adherence

2.4.1 Internal Factors

- a) Knowledge and Awareness: Patients who understand the benefits of ART and the risks of non-adherence are more likely to comply with therapy. Conversely, poor health literacy is strongly correlated with nonadherence (Hyvert et al., 2023).
- b) Attitudes and Motivation: Positive attitudes toward therapy and strong motivation to live longer and healthier drive adherence. Patients who believe that ART prolongs survival demonstrate stronger commitment (Tabriz, Ramezani, Heydari, & Aledavood, 2021).
- c) Mental Health: Depression, anxiety, and emotional fatigue reduce adherence. Therefore, psychosocial support is crucial for sustaining long-term compliance.

2.4.2 External Factors

- a) Family Support: Families play an essential role in reminding patients to take their medications, offering emotional support, and providing financial assistance, all of which improve adherence (Busebaia, Thompson, Fairbrother, & Ali, 2023).
- b) Healthcare Provider Support: Counseling, continuous follow-up, and strong patient-provider trust are critical for sustaining adherence (Murray & McCrone, 2015).
- c) Peer Support: Peer groups composed of people living with HIV/AIDS (PLWHA) create supportive environments where experiences are shared, reducing isolation and stigma.

2.4.3 Structural and Systemic Factors

- a) Healthcare Accessibility: Distance to facilities and availability of transportation strongly influence adherence. Rural populations face a higher risk of nonadherence.
- b) Drug Supply Consistency: ART stock-outs or inconsistent distribution disrupt adherence and compromise treatments.
- c) Policy and Governance: Effective national HIV programs, integration with social support services, and inter-agency coordination play decisive roles in ensuring adherence.

2.5 Stigma and Discrimination

HIV-related stigma is a powerful deterrent to adherence. Many patients avoid treatment for fear of revealing their HIV status. Discrimination in workplaces, families, and healthcare facilities perpetuates this problem. Research underscores the importance of civil society and public health campaigns in reducing stigma and normalizing ART adherence (Obeagu & Obeagu, 2024).

2.6 Education and Knowledge Interventions

Educational interventions have been shown to improve adherence. Patients who undergo structured counseling and receive continuous education are more likely to adhere to treatment (Latif, Maria, & Syafar, 2014). Methods include:

- a) Regular health counseling by trained providers.
- b) Dissemination of brochures, videos, and digital learning tools.
- c) Community-based awareness campaigns should be led by local leaders.

Inadequate or inconsistent communication by healthcare workers often leads to patient misconceptions, such as stopping ART when they feel better. Thus, strengthening health education is essential in this regard.

2.7 Family and Community Roles

Family involvement is a strong predictor of adherence. Family members not only remind patients about medication schedules but also provide emotional support and financial resources. In addition, PLWHA peer support groups serve as spaces where stigma is reduced and experiences are shared. Such collective support significantly enhances adherence rates (Leong et al., 2022)

2.8 Medical Monitoring and Supervision

Routine medical monitoring, such as CD4 count and viral load testing, provides feedback that motivates patients to adhere. Observing improved results encourages continued adherence (Rapoff, Duncan, & Karlson, 2023). Healthcare supervision, including home visits and telemedicine reminders, has also been effective in sustaining adherence (Bingham et al., 2021).

2.8.1 Barriers to ART Adherence

- a) Treatment Fatigue: Lifelong therapy often causes psychological fatigue, leading to interruptions.
- b) Side Effects: Common side effects such as nausea, dizziness, or fatigue discourage patients from taking medication (Latif et al., 2014; Widiastuti, Umar, & Hafiziandra, 2025).
- c) Socioeconomic Challenges: Poverty, unemployment, and low education limit access to healthcare.
- d) COVID-19 Pandemic: The pandemic disrupted ART distribution in many countries, worsening adherence problems.

2.8.2 Strategies and Innovations to Improve Adherence

- a) Digital Tools: SMS reminders, mobile applications, and e-health platforms help patients remember their medication schedules.
- b) Decentralized Services: Providing ART through community clinics and local pharmacies reduces the travel burden.
- c) Community Health Workers: Local health cadres supervise adherence and connect patients to services (Naa, Umar, & Ngutra, 2025).
- d) Integrated Programs: ART services combined with maternal health, tuberculosis treatment, and primary healthcare programs increase efficiency and engagement.

2.8.3 Theoretical Frameworks for Understanding ART Adherence

- a) Health Belief Model (HBM): Explains adherence based on perceptions of susceptibility, severity, benefits, and barriers.
- b) Theory of Planned Behavior (TPB): Emphasizes behavioral intention shaped by attitudes, subjective norms, and perceived control.
- c) Social Support Theory: Highlights the importance of emotional, informational, and instrumental support in sustaining adherence.

These frameworks provide useful insights for designing targeted interventions.

2.9 Research Gaps

Despite extensive research, significant gaps remain in our understanding of ART adherence in Indonesia. Most studies adopt quantitative approaches, focusing on statistical measures of adherence, whereas fewer explore qualitative aspects such as lived experiences, cultural beliefs, and patient narratives. The phenomenological approach applied in the Central Bangka District provides valuable

insights into patients' real-life challenges. However, more research is needed on the roles of digital technology, integration with broader healthcare services, and long-term effects of COVID-19 disruptions.

3. Research methodology

The research methodology was qualitative from a phenomenological perspective. In the social sciences, qualitative research is a methodology that prioritizes direct meetings with participants and direct observation of events that occur using their language and terms. Research using a qualitative approach aims to obtain an in-depth understanding, detailed information, or a complete narrative about the subject and its social context. The researcher then interpreted the meaning contained in the expressions and activities of the research subject, which was then translated into a scientific statement (Hansana et al., 2013; Karyadi, 2017).

This study applied a qualitative design with a phenomenological approach to explore the lived experiences of HIV patients regarding adherence to antiretroviral (ARV) therapy. The phenomenological method was chosen to capture patients' knowledge, attitudes, and perceptions of ARV compliance in their natural context, enabling a deep understanding of the behavioral and social factors influencing treatment consistency.

3.1 Study Site and Participants

The study was conducted at the Regional General Hospital of Central Bangka District, which serves as a referral center for HIV/AIDS treatments. Participants were selected using a non-probability purposive sampling technique, focusing on patients who had undergone ARV therapy for at least six months prior to the study. A total of nine informants participated, consisting of key informants (patients), supporting informants (family members), and triangulation informants (health workers) to ensure the credibility of the data.

3.2 Data Collection

Primary data were obtained through in-depth interviews using a semi-structured interview guide with open-ended questions. The questions were designed to explore three main themes: (1) knowledge of ARV therapy and compliance, (2) attitudes toward adherence and perceived barriers, and (3) actual practices in ARV consumption. Interviews were conducted face-to-face in a private setting to ensure confidentiality and to encourage openness. Field notes and audio recordings were used to capture the participants' detailed responses.

3.3 Data Analysis

The collected data were analyzed using thematic analysis. The process included transcription, coding, categorization, and identification of emerging themes related to compliance behaviors. Researcher triangulation was performed by comparing the responses of different informant groups to validate the findings.

3.4 Ethical Considerations

This study prioritized ethical aspects by ensuring informed consent, maintaining participant anonymity, and guaranteeing the confidentiality of all information. Participants were informed of their right to withdraw at any stage, without consequences.

4. Results and discussions

4.1 Research Results

4.1.1 Knowledge

Based on the results of the primary research, it can be concluded that information on HIV awareness among patients at the Central Bangka Regional Hospital is about the importance of consistency in taking ARV antidotes without interruption. All informants stated that adherence to ARV antidotes can reduce HIV symptoms and make the body feel comfortable and healthy. This finding is strengthened by the results of interviews with supporting informants, which showed that supervision in taking ARV

antidotes, especially by the patient's family, is considered important. However, one supporting informant stated that some HIV patients may not be compliant in taking the antidote (Latif et al., 2014; Mulyasa, 2010; Sarafino & Smith, 2014).

Based on the results of interviews with key informants, it was concluded that their knowledge of the benefits of using antiretroviral antiretrovirals is that taking antiretroviral antidotes can increase endurance, provide a sense of comfort, and improve overall health. This information is supported by the results of interviews with supporting informants, who stated that HIV patients had been given information about the benefits of ARV antidotes by the doctors treating them.

The results of the interviews with key informants revealed that their knowledge of how to obtain antiretroviral antidotes was by going to the nearest hospital, health center, or village health post in their area. This is also supported by the results of interviews with supporting informants, who stated that HIV patients received ARV antidotes through visits to hospitals and were assisted by doctors at the hospital.

4.1.2 Attitude

This can be concluded from the results of key informant interviews that their attitudes regarding regular CD4 testing every six months still show that some key informants are inconsistent in carrying out CD4 testing according to the schedule set by the officer in charge of HIV (Notoatmodjo, 2012; Prawirohardjo, 2014; Tae, Ratoebandjoe, & Daeng, 2021).

This information is supported by the results of interviews with supporting informants, who stated that HIV patients are required to carry out regular CD4 tests every 6 months, and doctors who treat HIV have prepared facilities for patients to conduct CD4 tests. Although HIV testing at Regional General Hospitals is free, its implementation is not optimal.

This can be concluded from the results of key informant interviews that, it is concluded that the informants' attitudes regarding the consumption of ARV antidotes are sometimes influenced by feelings of feeling healthy and cured. Several informants stated that they stopped taking ARV antidotes because they felt that they had recovered from HIV. However, after several months, they experienced negative impacts and side effects from not taking the antidote (Aurora, Tisnanta, & Triono, 2024; Latifa & Purwaningsih, 2016; Nurihwani, 2017; Nursalam, K., Misutarno, & S., 2018).

This information is supported by the results of interviews with supporting informants, who stated that after HIV patients felt positive changes after taking the antidote, they tended to stop taking it. However, a few months later, their condition worsened, and they returned to the hospital with more serious conditions.

4.2 Discussion

4.2.1 Analysis of informants' knowledge regarding Adherence to Taking Antiretroviral (ARV) Antiretrovirals in HIV Patients at the Central Bangka Regional General Hospital

The results of the interviews regarding the participants' knowledge of compliance in taking antiretroviral (ARVs) show that most of the main informants stated that ARVs can inhibit the development of HIV. Compliance with this antidote is thought to reduce HIV symptoms and make the body feel healthy and comfortable. They realized that if they did not take ARV antidotes, HIV symptoms could become more severe and even fatal. The informants also suggested seeking counseling from health workers and seeking information at a Regional Hospital or Community Health Center. They realize the benefits of ARV antidotes in increasing body resistance or immunity. In addition, they realized the importance of carrying out CD4 tests and that taking ARV antidotes must be done long-term and for life.

Minimal or inadequate knowledge about the spread of HIV is closely related to its spread of the HIV virus and has a significant impact on the level of patient compliance with the use of antidotes. This is because people tend to feel that they are not infected with HIV or do not feel symptoms of illness, so they are less compliant with taking the antidote. They tend to feel that they do not need to use

antiretroviral antidotes because they lack understanding of the risks and impacts of HIV (Notoatmodjo, 2012). Based on research conducted by Rahmadani and colleagues entitled "Factors that influence HIV patients' compliance with antiretroviral therapy in Manahan Health Center Surakarta in 2018", it was concluded that there is a correlation between the level of knowledge and the level of compliance of HIV/AIDS patients undergoing antiretroviral therapy.

The results of research conducted by researchers through in-depth interviews with informants, to collect information regarding their knowledge about Adherence to Taking Antiretroviral (ARV) drugs, revealed that of the nine main informants interviewed, some still had insufficient knowledge related to the use of ARV antidotes. This can be seen from the answers of several participants who expressed their ignorance regarding the impact or risks of forgetting to take ARV antidotes, duration of antiretroviral antidote use, and duration of antiretroviral antidote use. In addition, some informants admitted that they did not know the steps to be taken before starting to use antiretroviral antidotes.

4.2.2 Analysis of informants' attitudes regarding Adherence to Taking Antiretroviral (ARV) Antiretrovirals in HIV Patients at the Central Bangka Regional General Hospital

The results of the interviews showed that the majority of the main informants' attitudes stated that taking ARV antidotes according to a doctor's prescription could prolong the life span and increase endurance. They realized that ARV antidotes do not cure HIV but help maintain the body's resistance. The informants believed that the use of ARV antidotes could benefit their survival rate.

5. Conclusion

The results of an in-depth analysis of the knowledge of HIV patients regarding compliance with antiretroviral (ARV) Antiretrovirals at the Central Bangka Regional General Hospital, among the nine main informants, there are still several informants who lack knowledge regarding compliance with taking ARV antidotes. The results of an in-depth analysis of informants' attitudes regarding adherence to taking antiretroviral (ARV) antidotes in HIV patients at the Central Bangka Regional General Hospital showed that informants' attitudes regarding adherence to taking antiretroviral (ARV) antidotes are quite good; however, some informants stated that they had stopped using ARV antidotes for several months because they felt that their body condition had improved. However, after several months, they experienced negative impacts and side effects from not receiving the antidote, which caused a decline in their health status.

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