

The Association of Duration of HIV/AIDS Infection with Physical Complaints in Patients Undergoing Antiretroviral Therapy: A Cross-sectional Study

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Abstract. Background: Physical complaints in HIV/AIDS patients can be affected by the duration of infection and disease progression. Although antiretroviral therapy (ARV) is effective in suppressing viral replication, patients with longer infections are still at risk of experiencing a variety of health complaints. This study aims to analyze the relationship between the duration of HIV/AIDS infection and physical complaints in patients undergoing ARV therapy.

Methods: This study used a cross-sectional design conducted in one of the health centers in Kediri City. The study population is HIV patients in Indonesia, with a sample selected by simple random sampling. The independent variable is the duration of infection, which is the time from the time the patient tested positive for HIV until data collection was carried out. The dependent variable is the physical complaints experienced by the patient, which are collected using questionnaires. Data collection involved four enumerators from the Health Center. The data was analyzed using statistical tests to see the relationship between the duration of infection and the physical complaints of patients.

Results: Of the 49 respondents, it was found that 53.1% experienced physical complaints, with gastric disorders and often confused as the most common complaints. However, only cough complaints had a significant association with the duration of HIV/AIDS infection (p -value = 0.043). Demographic factors such as gender, marital status, and education level did not show a significant relationship with patient complaints.

Conclusions: The duration of HIV/AIDS infection is related to the appearance of certain physical complaints, especially cough, which may indicate the presence of opportunistic infections such as tuberculosis. Therefore, regular health monitoring for patients with a longer duration of infection is essential. Health workers need to increase education about ARV therapy compliance and complication prevention strategies. Further research with a longitudinal design and a larger sample size is needed to understand the long-term impact of HIV/AIDS on the physical condition of patients.

Keywords: HIV/AIDS, duration of infection, physical complaints, antiretroviral therapy, opportunistic infection

Introduction

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) remain significant global health problems, with multidimensional impacts on individuals, families, and communities. Although antiretroviral therapy (ART) has increased the life expectancy of people with HIV/AIDS, they are still prone to experiencing prolonged physical complaints. Previous research has focused on virological and immunological aspects, but has not explored the relationship between the length of time living with HIV/AIDS and the intensity of physical complaints experienced. This knowledge gap hampers efforts to develop holistic interventions, especially in the context of palliative care and long-term symptom management. Therefore, it is important to analyze how the duration of the disease affects the manifestation of physical complaints, as a basis for improving the quality of life of the sufferer. A new approach is needed to manage comorbidities and maximize quality of life in HIV/AIDS patients, as well as respiratory and peripheral muscle weakness with varying physical function performance between [1], [2], [3]

The prevalence of HIV/AIDS in Indonesia continues to increase, with the Indonesian Ministry of Health reporting more than 540,000 cumulative cases through 2023. Globally, WHO data shows that 39 million people will be living with HIV/AIDS in 2023, of which 70% are in low-middle-income countries (Ministry of Health, 2023). Physical complaints such as chronic fatigue, peripheral neuropathy, gastrointestinal disorders, and skin problems are reported by 60-80% of people with HIV/AIDS, even in those who have achieved viral suppression through ART. These complaints are often poorly diagnosed, worsening quality of life and increasing the risk of withdrawal from therapy [5], [6].

HIV/AIDS causes a progressive decline in the immune system, triggering opportunistic infections and chronic inflammation. In the early phase, sufferers may experience mild symptoms such as fever or weight loss. However, as the disease is prolonged (≥ 5 years), organ damage, metabolic disorders, and long-term side effects of ART (e.g. lipodystrophy or neurotoxicity) become more predominant. The impact includes physical disability, decreased productivity, and psychosocial burden. Inherent social stigma also exacerbates the isolation of sufferers, reducing their access to comprehensive health services. In HIV infection, patients with advanced immunosuppression associated with opportunistic infections are at higher risk of developing hemophagocyte lymphocytosis (HLH) [7], [8], [9]

Nurses hold a critical role in HIV/AIDS management, not only as providers of clinical care but also as educators and advocates for patients. Education on the importance of ART adherence, early detection of physical complaints, and coping strategies needs to be provided on an ongoing basis. Holistic nursing care should include symptom monitoring, nutritional support, as well as interventions to reduce pain and fatigue [10], [11], [12], [13]. In addition, nurses need to collaborate with multidisciplinary teams to address psychosocial impacts and improve the sustainability of care. Understanding the long-standing relationship of having HIV/AIDS with physical complaints will strengthen the ability of nurses to develop personalized, evidence-based care plans.

Methods

This study used a cross-sectional design conducted in one of the health centers in Kediri City. The population in this study is HIV patients in Indonesia, while the sample is some HIV patients selected using a simple random sampling technique. The sample consisted of patients who had been diagnosed with HIV based on the Viral Load test, with an independent variable in the form of duration of infection, which is the time from the time the patient was first tested positive for HIV to the time data was collected. The dependent variable in this study is the physical complaints experienced by HIV/AIDS patients, which includes various symptoms that are common in HIV patients, such as cough, chest pain, wounds that are difficult to heal, indigestion, and oral infections.

Data collection was carried out using a questionnaire that had been compiled based on common complaints in HIV/AIDS patients. This questionnaire is used to evaluate the type and frequency of complaints experienced by patients as well as information related to the duration of their infection. In the process of collecting data, this study involved four enumerators who were health workers from the Health Center. Enumerators are tasked with providing instructions to respondents, ensuring the completeness of the data, and clarifying if there are questions from respondents regarding the content of the questionnaire. The data obtained was then analyzed to identify the relationship between the duration of HIV infection and various physical complaints experienced by patients.

Results

Table 1. Distribution of Demographic Characteristics of HIV/AIDS Patients

No	Variable	Frequency	Percentage	P Value
A Gender				0.130
1	Man	47	95.9	
2	Woman	2	4.1	
	Total	49	100.0	
B Education				0.470
1	SD	2	4.1	
2	JUNIOR	1	2.0	
3	SMA	37	75.5	
4	S1	8	16.3	
5	D3	1	2.0	
	Total	49	100.0	
C Marital Status				0.665
1	Unmarried	42	85.7	
2	Marry	5	10.2	
3	Widow/Widow	2	4.1	
	Total	49	100.0	
D Work				0.330
1	Private Employees	31	63.3	
2	Self employed	8	16.3	
3	Not Working	5	10.2	
4	Housewives	1	2.0	
5	Student	2	4.1	

No	Variable	Frequency	Percentage	P Value
6	Student	1	2.0	
7	Honorary Employees	1	2.0	
	Total	49	100.0	

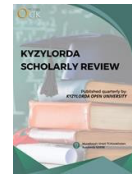
Description: *Relationship of Demographic Data with Complaint Data

Table 2. Identification of Physical Complaints in HIV/AIDS Patients

No	Variable	Frequency	Percentage	P value*
A Complaints				0.540
1	Exist	26	53.1	
2	None	23	46.9	
	Total	49	100.0	
B Chest Pain Complaints				0.753
1	Yes	7	14.3	
2	Not	42	85.7	
	Total	49	100.0	
C Wounds that do not heal				0.630
1	Yes	7	14.3	
2	Not	42	85.7	
	Total	49	100.0	
D Frequently Asked				0.640
1	Yes	11	22.4	
2	Not	38	77.6	
	Total	49	100.0	
E Gastric Diseases				0.886
1	Yes	19	38.8	
2	Not	30	61.2	
	Total	49	100.0	
F Often Thrush				0.480
1	Yes	8	16.3	
2	Not	41	83.7	
	Total	49	100.0	
G Frequent Cough				0.043
1	Yes	4	8.2	
2	Not	45	91.8	
	Total	49	100.0	

Description: Relationship between Infection Duration and Complaints

This study analyzes (Table1) the demographic characteristics and complaints experienced by HIV/AIDS patients. Of the 49 respondents involved, the majority were men (95.9%) and only 4.1% were women. In terms of education, most of the respondents were high school graduates (75.5%), followed by S1 (16.3%), elementary school (4.1%), D3 (2.0%), and junior high school (2.0%). Meanwhile, in terms of marital status, the majority of respondents are unmarried (85.7%), while only 10.2%



are married and widowers are 4.1%. In terms of employment, most respondents worked as private employees (63.3%), followed by self-employed (16.3%) and other groups with a smaller percentage.

From the results of the study (Table 2) , it was found that 53.1% of respondents experienced health complaints, while 46.9% did not experience complaints. However, based on statistical tests, no significant relationship was found between demographic factors such as gender, education, marital status, and employment with health complaints experienced by HIV/AIDS patients.

In further analysis, some of the specific complaints observed included chest pain, wounds that did not heal, frequent confusion, gastric disease, frequent canker sores, and frequent coughing. Of these complaints, only "frequent coughing" had a significant association with the duration of HIV infection (p-value 0.043). This suggests that the longer a person has been infected with HIV, the higher the likelihood of developing a cough, which can be an indication of an opportunistic infection such as tuberculosis. Meanwhile, other complaints such as chest pain, hard-to-heal wounds, and gastric disorders did not show a significant relationship with the duration of infection.

In addition (Table 3), the average age of respondents in this study was 25.75 years, with an age range between 10 to 44 years. The duration of HIV infection in respondents ranged from 3 to 11 years, with an average of 4.85 years. This data indicates that many patients are infected with HIV at a young age and have to live with the disease for many years. This reinforces the importance of early detection and ongoing treatment so that patients can have a better quality of life and prevent further complications.

Overall, the results of this study show that demographic characteristics do not have a significant relationship with health complaints in HIV/AIDS patients. However, the duration of the infection seems to play a role in the appearance of certain symptoms, such as coughing. Therefore, it is necessary to carry out regular health monitoring to prevent more serious complications and improve the quality of life of HIV/AIDS patients.

Table. Age and Duration of Infection Distribution of HIV/AIDS Patients

Variable	Mean	Min	Max	SD
Age	25.75	10	44	5.8
Duration of Infection	4.85	3	11	2.94

Discussion

This study aims to analyze the relationship between the duration of HIV/AIDS infection and physical complaints in patients undergoing antiretroviral therapy (ARV). From the results of the study, it was found that most of the respondents were male, unmarried, and had a high school education. These findings are in line with previous research that suggests that younger age groups, especially men, are more susceptible to HIV/AIDS due to behavioral risk factors, such as unsafe sexual intercourse and injecting drug use. However, demographic characteristics such as gender, marital status, and education level did not show a significant relationship with patient health complaints. This suggests that the main factors influencing the appearance of complaints are more related to clinical aspects, such as disease progression and the effectiveness of ARV therapy. Based on the latest research, chest pain, hard-to-heal

wounds, and stomach disorders are indeed common complaints in HIV/AIDS patients. However, some studies suggest that these complaints are more related to other factors such as neuropathy, side effects of antiretroviral therapy (ARVs), and the patient's immune status, rather than the duration of the infection itself [14]. Some studies have also highlighted that chronic pain in HIV patients is often multifactorial and does not always directly correlate with the duration of infection [14], [15], [16].

The most commonly reported complaints by patients include gastric disorders, frequent confusion, and canker sores. However, of the various complaints analyzed, only cough showed a significant association with the duration of HIV/AIDS infection. Cough that is often experienced by HIV/AIDS patients with a longer duration of infection can be an indication of an opportunistic infection, such as pulmonary tuberculosis or pneumonia. This is in line with the finding that HIV/AIDS patients with weakened immune systems tend to be more susceptible to secondary infections. Therefore, regular monitoring of patients with a longer duration of infection is essential to prevent further complications.

The duration of HIV/AIDS infection in this study ranged from 3 to 11 years, with an average of 4.85 years. These results show that many patients have been undergoing ARV therapy for a long time. Although ARV therapy can suppress viral replication and slow disease progression, patients with longer HIV infection are still at risk of experiencing a variety of physical complaints due to the side effects of the therapy or progressive immunodeficiency conditions. Therefore, in addition to the optimal delivery of ARV therapy, a comprehensive approach is needed in patient care, including early detection of opportunistic infections and management of emerging physical complaints. Incomplete immune recovery is a complex phenomenon among HIV-infected patients even though they have achieved persistent viral suppression with combined antiretroviral therapy [17], [18]

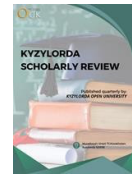
Based on the results of this study, it is recommended that health workers increase health monitoring efforts for HIV/AIDS patients, especially those who have been infected for a long time. Education on the importance of adherence to ARV therapy and strategies to overcome side effects and complications needs to be strengthened. In addition, routine screening for opportunistic infections, especially tuberculosis, is an important step in improving the quality of life of HIV/AIDS patients. Further studies with larger sample sizes and longitudinal research methods can provide deeper insights into the long-term impact of HIV/AIDS on patients' physical health. This shows that patient complaints are more influenced by other factors, such as medical conditions and the rate of disease progression, than social and economic factors. So that appropriate treatment must be carried out immediately to reduce complaints [19], [20]

Conclusion

Based on the results of this study, it can be concluded that the duration of HIV/AIDS infection is related to the appearance of certain physical complaints, especially cough, which has the potential to be an indication of opportunistic infection. Meanwhile, demographic factors such as gender, marital status, and education level did not show a significant relationship with patient complaints. The implication of these findings in clinical practice is the need for more intensive health monitoring for HIV/AIDS patients with a longer duration of infection, especially in detecting and managing opportunistic infections such as tuberculosis. In addition, education on antiretroviral therapy (ARV) adherence and complications prevention strategies must continue to be strengthened to improve the quality of life of patients. For further research, it is recommended to conduct a longitudinal study with a larger sample size to better understand the long-term impact of HIV/AIDS on the physical condition of patients and the effectiveness of medical interventions in reducing the complaints experienced.

References

- [1] H. M. Derry *et al.*, "Links Between Inflammation, Mood, and Physical Function Among Older Adults With HIV.," *J Gerontol B Psychol Sci Soc Sci*, vol. 77, no. 1, pp. 50–60, Jan. 2022, doi: 10.1093/geronb/gbab027.
- [2] S. Hasan, M. Aqil, and R. Panigrahi, "HIV-Associated Systemic Sclerosis: Literature Review and a Rare Case Report.," *Int J Environ Res Public Health*, vol. 19, no. 16, Aug. 2022, doi: 10.3390/ijerph191610066.
- [3] R. Roos, H. Van Aswegen, N. Thupana, M. McCree, and M. Mer, "Physical outcomes of patients infected with HIV requiring intensive care unit admission for mechanical ventilation at one South African hospital: a pilot study.," *Physiother Theory Pract*, vol. 38, no. 13, pp. 2920–2928, Nov. 2022, doi: 10.1080/09593985.2021.1941456.
- [4] Kemenkes, "Kasus HIV dan Sifilis Meningkat, Penularan Didominasi Ibu Rumah Tangga," Kemenkes RI. Accessed: Feb. 02, 2025. [Online]. Available: <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20230508/5742944/kasus-hiv-dan-sifilis-meningkat-penularan-didominasi-ibu-rumah-tangga/>
- [5] R. Amalia, E. Suhariyanti, and S. Margowati, "Efektivitas Metode Ceramah Dengan Dan Tanpa Modifikasi Terhadap Pengetahuan Dan Sikap Kesehatan Reproduksi Pada Remaja Di Posbindu Pikbo Desa Blondo 2020," *The 12th University Research Colloquium 2020 Universitas 'Aisyiyah Surakarta 1.*, pp. 285–300, 2020.
- [6] N. Aditya, A. Guntur, M. Ulfa, and Soebagijono, "Pemahaman Caregiver Dalam Mengakses Layanan Kesehatan Di Komunitas Pada Orang Dengan Skizofrenia Yang Mengalami Risiko Perilaku Kekerasan ," *Jurnal Abdi Kesehatan dan Kedokteran*, vol. 2, no. 1 SE-Articles, pp. 64–73, Jan. 2023, doi: 10.55018/jakk.v2i1.18.
- [7] M. Freire *et al.*, "Hemophagocytic Syndrome in a Patient with HIV and Histoplasmosis: A not so Rare Correlation.," *Clin Pathol*, vol. 15, p. 2632010X221118059, 2022, doi: 10.1177/2632010X221118059.



- [8] C. J. Martin, E. Muller, D. Labadarios, F. J. Veldman, and S. M. Kassier, "Health-related quality of life and associated factors in HIV-positive transplant candidates and recipients from a HIV-positive donor.," *Qual Life Res*, vol. 31, no. 1, pp. 171–184, Jan. 2022, doi: 10.1007/s11136-021-02898-y.
- [9] M. Luthfi Adillah, S. Yona, and C. Edison, "The relationship between quality of sleep and physical activity with level of symptom severity post-COVID-19 among HIV/AIDS patients.," *Eur Rev Med Pharmacol Sci*, vol. 28, no. 7, pp. 2955–2959, Apr. 2024, doi: 10.26355/eurrev_202404_35926.
- [10] Y.-C. Chen, C.-C. Chen, W.-K. Lin, H. S. Toh, N.-Y. Ko, and C.-Y. Lin, "Variations in the sleep-related breathing disorder index on polysomnography between men with HIV and controls: a matched case-control study.," *BMC Infect Dis*, vol. 24, no. 1, p. 456, Apr. 2024, doi: 10.1186/s12879-024-09322-z.
- [11] C. N. Schmickl *et al.*, "Diagnostic performance of screening tools for the detection of obstructive sleep apnea in people living with HIV.," *J Clin Sleep Med*, vol. 18, no. 7, pp. 1797–1804, Jul. 2022, doi: 10.5664/jcsm.9964.
- [12] Q. Yunin, D. Noerjoedianto, and O. Lesmana, "Knowledge, Attitudes, Age, Education Level Factors to Waste Management," *Journal of Applied Nursing and Health*, vol. 4, no. 1 SE-Articles, pp. 9–15, Jun. 2022, doi: 10.55018/janh.v4i1.27.
- [13] Y. Dodok, A. Guntur, Indriyawati, and K. E. Wicaksono, "Behavioral Differences In Seeking Help For Mental Health Among Generation Z From The Kodi People Group And The Madurese Ethnic Group," *Journal of Applied Nursing and Health*, vol. 4, no. 1 SE-Articles, pp. 78–85, Jun. 2022, doi: 10.55018/janh.v4i1.57.
- [14] K. S. Marcus, R. D. Kerns, B. Rosenfeld, and W. Breitbart, "HIV/AIDS-related Pain as a Chronic Pain Condition: Implications of a Biopsychosocial Model for Comprehensive Assessment and Effective Management," *Pain Medicine*, vol. 1, no. 3, pp. 260–273, Sep. 2000, doi: 10.1046/j.1526-4637.2000.00033.x.
- [15] S. N. Samsi, A. Rufaridah, S. Marlia, A. Dahlan, W. Komalasari, and L. Husni, "Edukasi Pendidikan Kesehatan Pada Pasangan Usia Subur Dalam Pemilihan Kontrasepsi," *Jurnal Abdi Kesehatan dan Kedokteran*, vol. 2, no. 1 SE-Articles, pp. 74–83, Jan. 2023, doi: 10.55018/jakk.v2i1.30.
- [16] F. D. Hasihun, "Analysis Of Knowledge Levels With Compliance With Antibiotic Use," *Journal of Applied Nursing and Health*, vol. 2, no. 2, pp. 67–71, Jan. 2020, doi: 10.55018/janh.v2i2.95.
- [17] X. Liu *et al.*, "Comparative Transcriptional Analysis Identified Characteristic Genes and Patterns in HIV-Infected Immunological Non-Responders.," *Front Immunol*, vol. 13, p. 807890, 2022, doi: 10.3389/fimmu.2022.807890.
- [18] M. Chauvin and D. Sauce, "Mechanisms of immune aging in HIV.," *Clin Sci (Lond)*, vol. 136, no. 1, pp. 61–80, Jan. 2022, doi: 10.1042/CS20210344.
- [19] J. Ambrosioni, E. Petit, G. Liegeon, M. Laguno, and J. M. Miró, "Primary HIV-1 infection in users of pre-exposure prophylaxis.," *Lancet HIV*, vol. 8, no. 3, pp. e166–e174, Mar. 2021, doi: 10.1016/S2352-3018(20)30271-X.
- [20] A. J. Udoakang *et al.*, "The COVID-19, tuberculosis and HIV/AIDS: Ménage à Trois.," *Front Immunol*, vol. 14, p. 1104828, 2023, doi: 10.3389/fimmu.2023.1104828.