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Psychiatric Disorders Complications in HIV/AIDS Patients and the Factors Influencing Them at the Karawang District General Hospital

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Abstract
HIV infection increases a patient's risk of developing various psychiatric disorders, including depression, mania, psychosis, post-traumatic stress disorder (PTSD), and substance abuse. In addition, antiretroviral therapy (ART) may trigger or exacerbate psychiatric symptoms, potentially affecting treatment adherence and overall quality of life. This study aimed to identify the prevalence of psychiatric disorder complications among HIV/AIDS patients and to analyze the factors influencing their occurrence at Karawang District General Hospital. A cross-sectional study design was employed using data obtained from medical records and patient interviews at the HIV alternative polyclinic of Karawang District General Hospital in August 2025. The target population consisted of 300 patients who met the inclusion and exclusion criteria. Data collection instruments included the Self-Reporting Questionnaire (SRQ-29) and structured medical interviews. Statistical analysis was performed using SPSS with multinomial regression and binary logistic regression methods. The results showed that 54.3% of patients did not experience psychiatric disorders, while 45.7% had at least one type of psychiatric disorder. Among those with psychiatric disorders, PTSD symptoms were the most prevalent (45.3%), followed by organic mental disorders (27.8%), psychotic disorders (23.3%), and substance abuse disorders (3.7%). The use of Atripla (efavirenz, emtricitabine, and tenofovir) increased the risk of psychiatric symptoms by 1.518 times, although this association was not statistically significant. Overall, the findings indicate a considerable burden of psychiatric symptoms among HIV/AIDS patients, highlighting the need for integrated mental health screening and management in HIV care.
Keywords. Psychiatric disorders. HIV/AIDS.

INTRODUCTION

HIV was first identified in the early 1980s and has since spread around the world with the most common route of HIV transmission being through sexual or vertical contact from mother to child (Swinkels et al., 2025; Waymack & Sundareshan, 2025; Yu, 2025). According to UNAIDS data, there will be 40.8 million people living with HIV worldwide by 2024. And as many as 630,000 people will die from HIV-related diseases by 2024. About 9.2 million people living with HIV will not have access to life-saving drugs by 2024 (Marwan et al., 2023).

In Indonesia itself, based on the report of the Ministry of Health's HIV, AIDS and PIMS Indonesia Work Team for the period of January - December 2024, HIV screening in Indonesia amounted to 6,986,402. Of the 6,986,402 people who were tested for HIV, 63,707 (0.9%) were found to be ODHI and 50,441 (79.2%) of them received ARV treatment. Based on age group, the highest was found in the age group of 25-49 years (62%), followed by the age group of 20-24 years (19%), and the age group of >= 50 years old (11%). Based on gender, the percentage of HIV found in men is 72% and women is 28% (Ministry of Health of the Republic of Indonesia, 2024).

As the life expectancy of people with HIV infection increases (through recent advances in antiretroviral therapy), doctors are discovering neuropsychiatric manifestations of the disease. Some patients show cognitive deficits due to HIV-induced neurotoxicity in the central nervous system (Nedelcovych et al., 2017). The high prevalence of psychiatric complications in

HIV/AIDS patients is substance abuse (40-74%), depression (22-50%), anxiety disorders (2-40%), PTSD (30%), sleep disorders (10-50%), severe mental illness/psychosis (0.2-15%).

HIV crosses the blood-brain barrier through a Trojan-horse-type mechanism using the markophage it infects. Once in the brain, HIV infects glia cells, which then secrete neurotoxins that cause neuronal damage and death. This degree of damage is thought to be related to neurological deficits clinically. Postmortem neuropathological examination of HIV-positive patients showed the presence of viruses in the cortical and subcortical structures, namely the frontal lobe, subcortical alba substance, and basal ganglia. Patients with severe neurocognitive deficit or HAD (HIV Associated Dementia) typically have a higher viral load of HIV plasma; however, high viral load does not always cause HAD, and HAD can also occur in the absence of a high viral load (Yu, 2025; Swinkels et al., 2025; WHO, 2025).

According to the American Psychiatric Association (APA), a mental disorder or psychiatric disorder is defined as a health condition that causes emotional changes, changes in mindset, and behavioral changes. In addition, the Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition (DSM-V) defines a mental disorder as a syndrome or set of symptoms characterized by a clinically significant impairment in a person's cognition, emotion regulation, or behavior that reflects dysfunction in the psychological, biological, or developmental processes that describe mental functioning (Petrucciani & Recchia, 2014).

Based on research conducted by Olashore et al. in 2020 in Sub-Saharan Africa, adolescents living with HIV have a higher risk of having psychological sequelae from HIV infection, as a biological impact of HIV infection on the body (Olashore et al., 2020). In this study, it was found that the most prevalent types of disorders in adolescents with HIV were depressive disorders and anxiety disorders. According to Olashore, the emergence of depressive disorders and anxiety disorders in his research is not only caused by biological disorders that occur due to HIV infection alone, but also influenced by the stigma and side effects of medications consumed by individuals with HIV.

In addition, a study conducted by Olashore et al. in 2023 in Botswana showed that there were two different groups that showed different mental disorders also in adolescents with HIV. According to Olashore, depressive disorders and anxiety disorders that are considered an internalized disorder are more prevalent in the adolescent group with female HIV and the horizontal infection group; while ODD and ADHD disorders which are considered externalizing disorders are more prevalent in the adolescent group with HIV male sex and the vertical infection group (Olashore et al., 2023). HIV infection increases a patient's risk for a variety of psychiatric disorders, including depression, mania, psychosis, and substance abuse. Antiretroviral therapy can trigger or worsen psychiatric disorders (Treisman & Kaplin, 2002; Carrico et al., 2022a; Rubin et al., 2022).

Depression is one of the most common psychiatric disorders observed in people infected with HIV. Prevalence rates show wide variation, with estimates of between 4% and 22% for HIV-positive men and between 2% and 18% for HIV-positive women. The relationship between depression and HIV infection is complex. Depression precedes HIV infection and may be related to risk factors for HIV infection (Carrico et al., 2022a; Rubin et al., 2022; Carrico et al., 2022b). Depression is more likely to be found among populations that are also at greater risk of HIV infection (e.g., gay men, injection drug users).

Depression can also appear during the course of HIV infection. It can be triggered by a positive result on an HIV test, when the disease (and/or sexual orientation) is disclosed or because

of lifelong treatment. As a life-threatening chronic disease, HIV infection is so difficult to manage that it can increase susceptibility to depression. Stigma also contributes to the occurrence of depression, especially through social isolation and lack of support. HIV-positive patients who are depressed are at high risk for suicide. Factors that positively correlated with suicidal ideation included being homosexual, having severe HIV symptoms, drug side effects, marijuana use, and an increase in affective symptoms of depression (Knights et al., 2017).

METHOD

This study is a cross-sectional study. The data was taken based on medical records and patient interviews at the HIV alternative polyclinic at Karawang Hospital in August 2025 with a target population of 300 patients at the HIV alternative polyclinic at Karawang Hospital who meet the inclusion and exclusion criteria. The inclusion criteria are patients aged > 15 years who have been diagnosed with HIV/AIDS and patients who receive information and are willing to participate in the study voluntarily and in writing (informed consent). Exclusion criteria are patients who are not willing to participate in the study and patients who have been diagnosed with psychiatric disorders before the diagnosis of HIV/AIDS

Patients aged >15 years who have been diagnosed with HIV/AIDS based on laboratory data of medical records, are explained and asked to provide written consent (informed consent) to participate in the study. Then an anamnesis was carried out, and the SRG-29 questionnaire was filled. Then data processing and statistical tests were carried out.

After obtaining data from the research subjects through filling out the SRQ-29 questionnaire and medical interviews, the data will then be tabulated using Microsoft Excel. The tabulated data will then be analyzed using the SPSS-26 program using the multinomial regression analysis method and binary logistic regression analysis. The results of the analysis will then be tabulated again and will be reported descriptively. Existing demographic data will also be reported as epidemiological descriptive data in this study.

RESULTS AND DISCUSSION

In the research conducted, a total of 300 research samples were obtained from the results of random sampling using questionnaires conducted at alternative polyclinics at Karawang Hospital during the hours of examination at the polyclinic. Of these samples, more individuals who did not have psychiatric disorders were found compared to individuals who had psychiatric disorders of any type (54.3% without disorders compared to 45.7% with disorders of any type). In individuals with any type of psychiatric disorder, it was found that the most common type of disorder was PTSD disorder symptoms (45.3%), followed by organic mental disorders (27.8%), psychotic disorders (23.3%), and in the last order was substance abuse disorder (3.67%). To make it easier to understand the demographic data of respondents, it can be seen in table 1.

Table 1. Demographic Data of Research Respondents

Variable Name	Quantity	% (N=300)
Symptoms of Psychiatric Disorders		
No distractions	163	54.3
Emotional mental disorders	10	3.3
Abuse of psychoactive substances	1	0.3

Symptoms of psychotic disorders	8	2.7
Symptoms of PTSD disorder	42	14.0
More than 1 interruption	76	25.3
Gender		
Male	185	61.7
Women	115	38.3
Final Education		
SD	21	7.0
Junior High School	53	17.7
SMA/SMK/STM	158	52.7
D3 and equivalent	18	6.0
S1 and equivalent	50	16.7
Employment Status		
Not working	111	37.0
Work	189	63.0
Types of ARVs Used		
Atripla (contains: Efavirenz, Emtricitabine and Tenofovir)	48	16.0
TLD (contains: Tenofovir, Lamivudine and Dolutegravir)	252	84.0
Duration of Treatment		
<1 year	37	12.3
1-5 years	249	83.0
>5 years	14	4.7
Medication Consumption Compliance		
Low compliance	51	17.0
Moderate compliance	43	14.3
High compliance	206	68.7

When the analysis was carried out using the multinomial regression method on the tabulated data, it was found that the model used as a whole was significant to predict the dependent variable (Sig. = 0.000), but the results of the analysis obtained were unstable and unreliable (standard error and very large odds ratio). Therefore, to make the data model more stable and reliable, several variables are regrouped. After regrouping, analysis was carried out using the binary regression method. In the results of the analysis using the binary regression method, the results of the feasibility test showed that the data model used was fit for the analysis (Hosmer and Lemeshow with a significance value of 0.399).

However, it was found that the model used only explained 3.6% of the variation of the dependent variable, so the predictive power was very weak ($R^2 = 0.036$). This weak predictive power arises from the possibility of symptoms of psychiatric disorder which are explained by other factors that are not measured in this study. These factors that can influence the appearance of the disorder are social support and psychiatric status before the start of HIV/AIDS treatment. Due to the limited time in sampling conducted during alternative polyclinics, interviews with social support are difficult to obtain. In addition, the lack of data on psychiatric status before the start of treatment at Karawang Hospital caused these variables to be excluded from this study.

In general, the significance that emerged from the binary logistic regression analysis in this study showed less significant results. This is due to the p-value of each variable that is assessed as not being significant (<.050). However, there are several variables that are close to significant

(p-value = .050-.100), namely moderate drug consumption compliance variables (p-value = .051). Based on the results of the study, adherence to moderate drug consumption can increase the risk of psychiatric disorders in HIV/AIDS patients in Karawang Regency by 1,789 times. However, it is statistically possible that this variable is not significant (CI = .997-3.212).

In addition, high adherence to medication consumption actually increased the risk of developing psychiatric disorders by 1,620 times, although statistically insignificant (p-value = .091, CI = .926-2,834). However, keep in mind that the predictive power of this study is very weak, so it is statistically unreliable. In addition, the type of ARV variables used also affected the appearance of psychiatric disorders in HIV/AIDS patients in Karawang Regency as many as 1,518 times (Atripla - contains: Efavirenz, Emtricitabine and Tenofovir); but statistically these variables were not significant (p-value = .226, CI = .773-2.982). However, it should be borne in mind that the very weak predictive power in this study may cause the results of the analysis of these variables to be insignificant (table 2).

Table 2. Binary Regression Analysis Results

Variable Type (Category vs. Reference)	Sig.	Exp(B)	95% C.I. Lower	95% C.I. Upper
Age	.653	1.006	.979	1.034
Gender				
(Female vs. Male)	.942	1.020	.604	1.721
Final Education				
(Medium vs. Low)	.426	.676	.258	1.772
(High vs. Low)	.594	.754	.267	2.129
Employment Status				
(Working vs. Not working)	.132	1.490	.886	2.504
Types of ARVs				
(Atripla vs. TLD)	.226	1.518	.773	2.982
Duration of Treatment				
(Long-term vs. Short-term)	.379	.810	.507	1.295
Medication Consumption Compliance				
(Medium vs. Low)	.051	1.789	.997	3.212
(High vs. Low)	.901	1.620	.926	2.834

CONCLUSION

This study concludes that Atripla use and medium-to-high drug consumption compliance rates among HIV/AIDS patients at Karawang District General Hospital are associated with an increased risk of psychiatric disorder symptoms; however, limitations such as weak predictability, unreliable results due to an inability to clearly link independent and dependent variables, limited sample size (300 respondents), language barriers (Indonesian questionnaires versus respondents' primary Sundanese usage), and constrained sampling timelines render the findings exploratory rather than definitive, positioning this as a pilot study highlighting compliance issues contributing to psychiatric risks. Clinically, these insights recommend targeted interventions in HIV care settings. For future research, a large-scale, longitudinal study with multilingual (Indonesian and Sundanese) instruments, expanded sample sizes from diverse regional populations, and advanced statistical models (e.g., multivariate adjustments for

confounders) is suggested to validate associations, improve reliability, and explore causal mechanisms between ART regimens, adherence, and psychiatric outcomes.

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