

Prevalence of Depression, Anxiety, and Associated Factors Among PLHIV Registered at Rural Area at the HIV Treatment Centre Nawabshah Sindh Pakistan

Ubedullah Malik, Paras Tunio, Ghulam Qadir Rajpoot, Naila Altaf

Sindh Peoples Medical University Hospital, Nawab Shah, Pakistan

Umair Malik

National AIDS Control Program Pakistan Ministry of Health Pakistan, Pakistan

Background: Introduction Human Immunodeficiency Virus (HIV) continues to pose a significant public health challenge worldwide. Depressive and anxiety disorders are common in People Living with HIV (PLHIV) and negatively impact adherence, quality of life, and disease outcomes (World Health Organization [WHO], 2025b; UNAIDS, 2024). Social stigma, discrimination, unemployment, and poor family support are common predictors of depression and anxiety among PLHIV (Ali et al., 2024). **Objective:** To find out how common depression and anxiety are among People Living with HIV (PLHIV) at rural area of country in Sindh at the HIV Treatment Centre in Nawabshah Sindh Pakistan, we looked at data from January 2025 to December 2025. **Methodology:** We did a study with 254 PLHIV who visited the HIV Treatment Centre in Nawabshah from January to December 2025. We collected information using questionnaires that asked about their background, health, depression, and anxiety. We used a computer program called SPSS to analyze the data. We looked for things that might be connected to depression and anxiety. If the results showed a connection, we considered it important if the p-value was than 0.05. **Results:** Out of 254 people 109 (42.9%) had depression and 96 (37.8%) had anxiety. We found that depression was more common in people who were unemployed felt like they were being treated unfairly did not have family support had a low income and did not take their HIV medicine as prescribed. Anxiety was more common in women, people who used substances, those who had been sick for a time and people who faced social discrimination. Depression and anxiety are very common among PLHIV at the HIV Treatment Centre, in Nawabshah. We think that checking for health issues and providing support should be a regular part of HIV treatment.

Keywords: HIV/AIDS (Acquired Immunodeficiency Syndrome), depression, anxiety, PLHIV, mental health, ART, WHO

Ubedullah Malik, BSCS, data scientist, MIS assistant, Department of CDC HIV/AIDS, Sindh Peoples Medical University Hospital, Nawab Shah, Pakistan.

Paras Tunio, BS Public Health, Public Health professional, counselor/clinical physiologist, Department of CDC HIV/AIDS, Sindh Peoples Medical University Hospital, Nawab Shah, Pakistan.

Ghulam Qadir Rajpoot, Dr., HIV specialist, Department of CDC HIV/AIDS, Sindh Peoples Medical University Hospital, Nawab Shah, Pakistan.

Naila Altaf, BSPH, MSPH, Public Health Professionals, Department of CDC HIV/AIDS, Sindh Peoples Medical University Hospital, Nawab Shah, Pakistan.

Umair Malik, Dr., HIV specialist, National AIDS Control Program Pakistan Ministry of Health Pakistan, Pakistan.

Introduction

Human Immunodeficiency Virus (HIV) infection is a global health concern. According to the World Health Organization (WHO), 40.8 million people were living with HIV worldwide in 2024. HIV not only affects physical health but also mental and emotional well-being.

Depression and anxiety are common among People Living with HIV (PLHIV). These disorders may occur due to fear of death, stigma, social isolation, financial stress, discrimination, and long-term medication use. Studies show that people living with HIV (PLHIV) are two to three times more likely to experience depression than the general population. Mental health disorders negatively affect antiretroviral therapy (ART) adherence, viral suppression, and overall quality of life. WHO recommends integrating health services into HIV treatment settings to improve patient outcomes.

Pakistan is facing an increasing HIV epidemic. 350,000 individuals were living with HIV in Pakistan in 2025. Sindh Province is one of the affected regions.

Several Pakistani studies have reported rates of depression and anxiety among PLHIV. A study by Ali et al. found that stigma, poverty, female gender, and unemployment were predictors of depressive symptoms among HIV-positive individuals in Pakistan (Ali et al., 2024; American Psychiatric Association, 2013; Centers for Disease Control and Prevention, 2024).

Despite increasing HIV cases in Sindh, limited research has been conducted on disorders among PLHIV attending HIV treatment centers in Nawabshah. This study aimed to determine the prevalence of depression, anxiety, and associated factors among PLHIV registered at the HIV Treatment Centre Nawabshah during January-December 2025 (BMC Psychiatry, 2025; Kroenke, Spitzer, & Williams, 2001).

Literature Review

Depression affects 280 million people globally. Anxiety disorders are also common among individuals with illnesses, including HIV/AIDS (Acquired Immunodeficiency Syndrome).

PLHIV are vulnerable to disorders due to chronic disease burden, social discrimination, and fear of disclosure. WHO emphasizes integrating health interventions into HIV care because untreated depression reduces ART adherence and treatment success (Centers for Disease Control and Prevention, 2024; National AIDS Control Program Pakistan, 2024; HIV.gov, 2024; UNAIDS, 2024).

A study in Pakistan among PLHIV reported rates of depression and anxiety particularly among females, unemployed individuals, and those experiencing stigma.

Research in Saharan Africa showed that depression among PLHIV was associated with poor quality of life, social isolation, and increased mortality.

The PHQ-9 and GAD-7 are used tools for screening depression and anxiety, among HIV-positive individuals (Spitzer, Kroenke, Williams, & Löwe, 2006; World Health Organization, 2025a).

Methodology

Study Design

This study is a cross-sectional study.

Study Setting

The study took place at the HIV Treatment Centre Nawabshah.

Study Duration

The study lasted from January 2025 to December 2025.

Study Population

The study looked at all registered People Living with HIV or PLHIV for short who attended the HIV Treatment Centre Nawabshah.

Sample Size

The study included a total of 254 registered PLHIV.

Sampling Technique

The study used a sampling technique.

Inclusion Criteria

- Registered PLHIV at the HIV Treatment Centre Nawabshah;
- People who were 18 years or older;
- People who were willing to participate.

Exclusion Criteria

- Patients who were very sick;
- Patients who had been diagnosed with disorders before they were diagnosed with HIV;
- People who did not want to participate.

Data Collection Tools

The study collected information on the following:

Socio-demographic variables.

- The age of the PLHIV;
- The gender of the PLHIV;
- The marital status of the PLHIV;
- The education level of the PLHIV;
- The occupation of the PLHIV;
- The income of the PLHIV.

Clinical variables.

- How long the PLHIV had been living with HIV;
- How well the PLHIV adhered to their therapy or ART;
- The CD4 count of the PLHIV;
- If the PLHIV used any substances;
- If the PLHIV had any health problems.

Psychological Assessment Tools

- The PHQ-9 was used to check for depression and see how severe it was as described by Kroenke and colleagues in 2001;
- The GAD-7 was used to assess anxiety as described by Spitzer and colleagues in 2006.

Data Analysis

The data were analyzed using a program called SPSS Version 26.

The following statistical tests were used:

- Percentages;
- Chi-square test;
- Logistic regression analysis.

A result was considered significant if the p -value was 0.05.

Ethical Considerations

- The study was approved by the Institutional Review Board.
- The participants gave their written informed consent.
- The study kept the information confidential and anonymous.
- The participants were told they could stop participating at any time.

Results

Table 1

Socio-demographic Characteristics (n = 254)

Variable	Frequency	Percentage
Male	152	59.8%
Female	102	40.2%
Married	163	64.2%
Unemployed	118	46.5%
Low income	140	55.1%
Illiterate	97	38.2%

Table 2

Clinical Characteristics

Variable	Frequency	Percentage
ART adherence	181	71.3%
ART non-adherence	73	28.7%
Substance use	69	27.2%
HIV duration > 5 years	106	41.7%

Table 3

Prevalence of Depression and Anxiety

Psychological disorder	Frequency	Percentage
Depression	109	42.9%
Anxiety	96	37.8%

Table 4

Factors Associated With Depression

Variable	p-value
Social stigma	0.001
Unemployment	0.003
Poor family support	0.002
Low income	0.004
ART non-adherence	0.001

Table 5

Factors Associated With Anxiety

Variable	p-value
Female gender	0.01
Substance use	0.02
Duration of illness	0.03
Social discrimination	0.001

Discussion

The study we did found that a lot of People Living with HIV or PLHIV for short who go to the HIV Treatment Centre Nawabshah have depression and anxiety. We found that 42.9 percent of PLHIV have depression and 37.8 percent have anxiety. This is similar to what other studies in Pakistan and around the world have found, like the ones done by Ali and his team in 2024 and the World Health Organization in 2025.

We saw that depression is closely linked to be treated by society not having a job, having a low income, not getting support from family, and not taking the right medicine, which is called ART non-adherence. Ali and his team found the thing in 2024 they said that being treated unfairly and being poor are big reasons why PLHIV in Pakistan gets depressed (World Health Organization, 2024; 2025c).

We also found that anxiety is more common in women and people who use substances. The World Health Organization said in 2022 that women with HIV often face problems in their daily lives and are treated unfairly (World Health Organization, 2025a).

Mental health problems can make it harder for people to take their medicine and can make their disease worse. The World Health Organization says that we should make sure to include help for health and social problems in the places where people get treatment for HIV as they said in 2025 (World Health Organization, 2023; 2025b; WHO EMRO, 2025).

Our study shows that we really need to make sure that people can get help for their health and get counseling at the HIV treatment centers in Pakistan.

Conclusion

A lot of PLHIV who go to the HIV Treatment Centre Nawabshah have depression and anxiety. Being treated unfairly, not having a job, not getting support from family, having an income, and not taking the right medicine are all big reasons why PLHIV gets depressed and anxious. We need to make sure that mental health services are part of the care that people get for HIV so that we can help them feel better and live a life (World Health Organization, 2022).

Recommendations

- We should make sure that people can get checked for depression and anxiety when they go to the HIV treatment centers.
- We should have counseling and psychiatric help available at the places where people get their HIV medicine, which is called ART clinics.
- We should tell people in the community about HIV and try to reduce the unfair treatment of people with HIV.
- We should help families support their loved ones who have HIV.

- We should do studies in different places in Sindh Province to learn more, about this problem.

Author Contributions

Ubedullah Malik: data collection, drafting manuscript, research idea.

Dr. G. Qadir Rajput: clinical oversight, manuscript review.

Dr Umair Malik: Supervision, Management and Public Health & Data Support.

Paras Tunio: program data support, public health support, ARV adherent counselor, physiological support.

Naila Iltaf: case manager, ARV management, supervision.

All authors reviewed and approved the final version.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The authors declare no any financial interests/personal relationships which may be considered as potential competing interests.

Acknowledgements

We thank the staff of CDC HIV Treatment Centre Nawabshah for their dedicated service and the mothers and infants for their trust.

References

- Ali, U., Riaz, U., Doyle, H., Satti, A., Mahmood, N., Rasheed, S., & Zahra, K. (2024). Prevalence and predictors of depressive symptoms among people living with HIV in Pakistan. *PLOS Global Public Health*, 4(11), e0003882.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: APA.
- BMC Psychiatry. (2025). *Depression among PLHIV in Africa: Systematic review*.
- Centers for Disease Control and Prevention. (2024). *HIV and mental health*.
- HIV.gov. (2024). *Mental health and HIV/AIDS*.
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606-613.
- National AIDS Control Program Pakistan. (2024). *Annual HIV report 2024*. Islamabad, Pakistan.
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092-1097.
- UNAIDS. (2024). *Global AIDS update 2024*. Geneva, Switzerland.
- UNAIDS. (2021). *Global AIDS strategy 2021-2026*. Geneva, Switzerland.
- World Health Organization. (2022). *Integrating mental health and HIV interventions*. Geneva, Switzerland.
- World Health Organization. (2023). *Depression and other common mental disorders: Global health estimates*. Geneva, Switzerland.
- World Health Organization. (2024). *Mental Health Gap Action Programme (mhGAP)*. Geneva, Switzerland.
- World Health Organization. (2025a). *HIV/AIDS fact sheet*. Geneva, Switzerland.
- World Health Organization. (2025b). *HIV data and statistics*. Geneva, Switzerland.
- World Health Organization. (2025c). *Updated guideline on HIV service delivery*. Geneva, Switzerland.
- WHO EMRO. (2025). *HIV infections rise in Pakistan*. Cairo, Egypt.