JMU
Jurnal Medika Udayana
ISSN: 2597-8012 JURNAL MEDIKA UDAYANA, VOL. 14 NO.06, JUNI, 2025
DOAJ DIRECTORY OF OPEN ACCESS JOURNALS
Accredited SINTA 3
Received: 2025-05-08 Revision: 2025-05-22 Accepted: 30-05-2025

RISK OF DEPRESSION AND ANXIETY AMONG FEMALE SEX WORKERS (FSWS) LIVING WITH HIV AND UNDERGOING HIV TREATMENT AT WM MEDIKA CLINIC, KERTI PRAJA FOUNDATION

Dewa Putu Adiatma Pradnyana[1], Ni Luh Putu Ariastuti[2], Komang Ayu Kartika Sari[2], I Made Dwi Ariawan[2]
[1.] Program Studi Sarjana Kedokteran, Fakultas Kedokteran, Universitas Udayana, Bali
[2.] Departemen Kesehatan Masyarakat dan Kedokteran Pencegahan, Universitas Udayana, Bali
e-mail: adiatma.pradnyana@student.unud.ac.id

ABSTRACT

Background: Human Immunodeficiency Virus (HIV) attacks the immune system, and over 39 million people worldwide are currently living with HIV. Female Sex Workers (FSWs) are a key population highly vulnerable not only to HIV infection but also to psychosocial stressors stemming from their occupation and health status. These factors increase the risk of depressive and anxiety disorders. This study aims to identify the risks of depression and anxiety disorders and to describe the demographic and social characteristics of FSWs living with HIV.
Methods: This study employed a descriptive cross-sectional design involving 50 respondents selected through consecutive sampling. Inclusion criteria included FSWs living with HIV, aged ≥18 years, and diagnosed with HIV for at least six months. Depression risk was assessed using the Center for Epidemiologic Studies Depression Scale (CES-D), and anxiety risk was measured with the Generalized Anxiety Disorder 7-item (GAD-7) scale. Sociodemographic characteristics were collected via questionnaire and analyzed using univariate and bivariate methods.
Results: A total of 92% of respondents were at high risk of clinical depression, and 50% experienced moderate to severe anxiety. The highest risks were found among those aged 18–24 years, divorced, with higher education, working as FSWs for less than five years, and having histories of violence, social stigma, and low social support.
Conclusions: FSWs living with HIV are highly vulnerable to psychological disorders. Comprehensive psychosocial interventions are needed to improve their mental health outcomes.
Keywords: HIV., Female Sex Workers., Depressive Disorder., Anxiety Disorder

INTRODUCTION

Human Immunodeficiency Virus (HIV) is an infectious condition that attacks the immune system, with Acquired Immunodeficiency Syndrome (AIDS) representing its most advanced stage. According to data from the World Health Organization (WHO), by the end of 2023, more than 39 million people worldwide were living with HIV. The same data also revealed that HIV had caused over 630,000 deaths globally, making it one of the most pressing global health challenges, threatening the quality of life of individuals, communities, and populations at large.[1]

In the context of HIV, the term "key populations" refers to groups of individuals who are at significantly higher risk of acquiring HIV compared to the general population. WHO classifies key populations into five main groups: (1) men who have sex with men (MSM), (2) sex workers (both female and male), (3) people who inject drugs (PWID), (4) individuals living in prisons or other closed settings, and (5) transgender individuals and people with non-binary gender identities. The risk of HIV infection in these populations can be 5 to 30 times higher than that of the general population, depending on group characteristics and specific contextual factors.[1 2]

Female sex workers (FSWs) are among the key populations most affected by the HIV epidemic. FSWs are women who earn income by offering sexual services to clients or partners. It is estimated that approximately 1 in 10 new HIV infections globally occurs among FSWs and their partners.[2] According to UNAIDS global data, the prevalence of HIV among FSWs ranges from 11% to 30%, depending on geographic region. In some countries in sub-Saharan Africa, prevalence rates exceed 50%, far surpassing those among the general adult female population.[2]

Sex work is often associated with various forms of social stigma. Societal perceptions that label FSWs as immoral individuals often lead to social exclusion. This contributes to low levels of social support and exacerbates their overall well-being. Moreover, health-related stigma poses additional barriers, as FSWs are frequently viewed as sources of sexually transmitted infections (STIs). This perception often deters FSWs from seeking healthcare services both for routine checkups and medical treatment due to fear of discrimination and mistreatment by healthcare providers. Such stigma may also be internalized, leading to feelings of shame, low self-worth, and reduced self-esteem. As a result, many FSWs suffer from mental health issues, particularly depression and anxiety.[3 4]

In 2019, a cross-sectional study in Kenya involving 220 FSWs aged 18 and older, conducted in several clinics in Nairobi,

doi:10.24843.MU.2025.V14.i6.P04

found that 56.8% of participants exhibited depressive symptoms, indicated by a Patient Health Questionnaire (PHQ-9) score above 10. Furthermore, 39.1% showed signs of anxiety, as indicated by a Generalized Anxiety Disorder-7 (GAD-7) score above 10. The study identified intimate partner violence and the lack of consistent use of preventive measures such as condoms and pre-exposure prophylaxis (PrEP) as major contributing factors to the high rates of depression and anxiety. These findings align with a similar cross-sectional study in the Dominican Republic, where depression prevalence among FSWs reached 70.2%. In addition to violence, societal stigma surrounding sex work was a significant contributor to poor mental health outcomes.[4]

Depression and anxiety not only negatively impact the quality of life of FSWs, whether or not they are living with HIV, but also affect their adherence to HIV-related health services, including PrEP and antiretroviral therapy (ART). A study in Kenya examined the relationship between mental health conditions and adherence to PrEP among FSWs. Of 220 women surveyed, only 41.1% (91 out of 220) reported optimal use of PrEP. Emotional abuse experienced during work and psychological conditions such as depression and anxiety were the main reasons for low adherence.[3]

Similar studies in the Dominican Republic and Tanzania evaluated ART adherence among FSWs. The findings indicated that depression significantly decreased adherence to ART, with an adjusted odds ratio (aOR) of 0.25 (95% CI: 0.08–0.78). Anxiety also showed a borderline association with ART adherence, with an aOR of 0.39 (95% CI: 0.15–1.02).[5] These findings highlight the crucial role of mental health in determining the success of HIV prevention and treatment efforts among FSWs.

The high prevalence of depression and anxiety among FSWs living with HIV has serious implications for treatment adherence and overall quality of life. However, in-depth studies on this issue, particularly in Indonesia, remain limited. In Bali, Kerti Praja Foundation is one of the leading organizations addressing HIV/AIDS and improving the well-being of people living with HIV (PLHIV), including key populations such as FSWs. Since its establishment in 1992, the foundation has gained extensive experience in research, education, and healthcare services for PLHIV. Given its strategic role and the urgent challenges faced by FSWs, there is a need for comprehensive studies to further explore the intersection between HIV status and psychological disorders such as depression and anxiety in this population.

MATERIALS AND METHODS

This study employed a cross-sectional descriptive design. It was conducted among FSWs living with HIV who were receiving treatment at WM Medika Clinic, Kerti Praja Foundation, with a total sample of 50 participants. Ethical approval was obtained from the institutional ethics committee (Approval No. 0385/UN14.2.2.VII.14/LT/2025).

The researchers prepared printed questionnaires and collaborated with staff from Kerti Praja Fundation to inform potential participants about the study procedures and schedule. FSWs who agreed to participate provided written informed consent, after which they received the questionnaire to complete. Upon completion, researchers reviewed the responses for completeness. If clarification was needed, staff assisted respondents in understanding the items. Respondents identified to be at high risk for severe depression or anxiety were referred to the foundation for appropriate support. All completed questionnaires were kept confidential and stored securely. Only the researchers had access to the data.

The questionnaires included the CES-D and GAD-7 instruments. CES-D scores ranged from 0–60, with ≥16 indicating a risk of depression. GAD-7 scores ranged from 0–21, categorized as: 0–4 (minimal anxiety), 5–9 (mild), 10–14 (moderate), and 15–21 (severe). All raw data were manually entered into Microsoft Excel and numerically coded, including variables such as education level, marital status, stigma experience, violence history, and social support. The data were then exported to SPSS for further statistical analysis.

Two types of analysis were conducted: univariate analysis to describe the distribution of each variable (e.g., depression, anxiety, and other demographics), and bivariate analysis to explore associations between mental health outcomes and independent variables. Results were presented in frequency tables and cross-tabulations without statistical significance testing.

RESULT

This study involved 50 FSWs living with HIV and receiving treatment at the Kerti Praja Foundation. The average age of participants was 37.2 years (range: 19–58), with 58% being divorced and 46% having completed only primary school. The average duration of sex work was 7 years (range: 1–25 years).

On average, participants had been diagnosed with HIV for 5.47 years (range: 7 months to 20 years), and had been on antiretroviral therapy (ART) for an average of 5.2 years (range: 7 months to 18 years). Half of the respondents (50%) reported experiencing HIV-related stigma, while 72% stated they received adequate social support. The sociodemographic characteristics of respondents can be seen in Table 1.

Table 1. Sociodemographic characteristics of FSWs living with HIV and undergoing treatment at Kerti Praja Foundation (n = 50)

Characteristics	Frequency (f)	Percentage (%)
Age		
18-24	5	10
25-35	18	36
36-49	19	38
≥ 50	8	16
Highest Educational Attainment		
No Formal Education	9	18
Primary School	23	46
Junior High School	12	24
Senior High School	6	12
Marital Status		
Never Married	0	0
Currently Married	12	24
Divorced (living)	29	58
Widowed	9	18
Duration of Work as FSW (years)		
< 5 years	22	44
≥ 5 years	28	56
Duration Since HIV Diagnosis (years)		
≤ 1 year	10	20
2-5 years	22	44
> 5 years	18	36
Duration on Antiretroviral Therapy (ART) (years)		
≤ 1 year	11	22
1-3 years	14	28
> 3 years	25	50
Experienced Stigma		
Did not experience stigma	14	28
Neutral/ ambiguous	11	22
Experienced stigma	25	50
History of Violence		
Never experienced violence	23	46

Experienced violence	27	54
Level of Social Support		
Did not receive social support	9	18
Neutral/ ambiguous	5	10
Received social support	36	72

During the questionnaire process, the CES-D 20 instrument was utilized to assess the risk of clinical depression among participants. Analysis revealed that 46 out of 50 respondents (92%) were identified as being at risk for clinical depressive disorders. These findings are presented in Table 2.

To assess anxiety risk levels, the GAD-7 instrument was employed. The results indicated that 6 respondents (12%) exhibited minimal anxiety, 19 (38%) had mild anxiety, 11 (22%) showed moderate anxiety, and 14 (28%) were at risk of severe anxiety. Detailed results are presented in Table 3.

Table 2. Depression risk of FSWs living with HIV and undergoing treatment at Kerti Praja Foundation (n = 50)

Depression Risk	Frequency (f)	Percentage (%)
At risk of clinical depressive disorder	46	92
Not at risk of clinical depressive disorder	4	8

Table 3. Anxiety risk of FSWs living with HIV and undergoing treatment at Kerti Praja Foundation (n = 50)

Anxiety Risk	Frequency (f)	Percentage (%)
Minimal anxiety	6	12
Mild anxiety	19	38
Moderate anxiety	11	22
Severe anxiety	14	28

The cross-tabulation results between depression risk levels and respondent's sociodemographic characteristics revealed several notable patterns. All respondents (100%) aged 18–24 years were identified as being at risk for depressive disorders. Similarly, all participants whose highest educational attainment was junior or senior high school demonstrated the same risk. In terms of marital status, every respondent who was widowed was also found to be at risk.

Regarding occupational duration, 100% of respondents who had worked as female sex workers for less than five years were at risk of depression. A similar trend was observed among those recently diagnosed with HIV, both those diagnosed within ≤ 1 year and within 2–5 years, all were identified as being at risk.

Furthermore, all respondents undergoing antiretroviral therapy (ART) for ≤ 1 year and 1–3 years were also found to be at risk. Depression risk was additionally observed in 100% of respondents who had experienced social stigma and those with a history of violence. Notably, every participant reporting an absence of social support was also at risk for depressive disorders. These findings are detailed in Table 4.

Table 4. Cross-tabulation between depression and sociodemographic characteristics among FSWs living with HIV and undergoing treatment at Kerti Praja Foundation (n = 50)

Characteristics	CES-D					
	Not at risk for clinical depressive disorder (score <16), n (%)		At risk for clinical depressive disorder (score <16), n (%)		Total	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Age						
18-24	0	0	5	100	5	100
25-35	1	5.6	17	94.4	18	100
36-49	2	10.5	17	89.5	19	100
≥ 50	1	12.5	7	87.5	8	100
Total	4	8	46	92	50	100
Highest						

Educational Attainment						
No Formal Education	1	11.1	8	88.9	9	100
Primary School	3	13	20	87	23	100
Junior High School	0	0	12	100	12	100
Senior High School	0	0	6	100	6	100
Total	4	8	46	92	50	10
Marital Status						
Currently Married	3	25	9	75	12	100
Divorced (living)	1	3.4	28	96.6	29	100
Widowed	0	0	9	100	9	100
Total	4	8	46	92	50	100
Duration of Work as FSW (years)						
$\leq$ 5 year	0	0	22	100	22	100
$\geq$ 5 years	4	14.3	24	85.7	28	100
Total	4	8	46	92	50	100
Duration Since HIV Diagnosis (years)						
$\leq$ 1 year	0	0	10	100	10	100
2-5 years	0	0	22	100	22	100
$\triangleright$ 5 years	4	22.2	14	77.8	18	100
Total	4	8	46	92	50	100
Duration on Antiretroviral Therapy (years)						
$\leq$ 1 year	0	0	11	100	11	100
1-3 years	0	0	14	100	14	100
$\triangleright$ 3 years	4	16	21	84	25	100
Total	4	8	46	92	50	100
Experienced Stigma						
Did not experience stigma	1	7.1	13	92.9	14	100
Neutral/ ambiguous	3	27.3	8	72.7	11	100
Experienced stigma	0	0	25	100	25	100
Total	4	8	46	92	50	100
History of Violence						
Never experienced violence	4	17.4	19	82.6	23	100
Experienced violence	0	0	27	100	27	100
Total	4	8	46	92	50	100
Level of Social Support						
Did not receive social support	0	0	9	100	9	100
Neutral/ ambiguous	0	0	5	100	5	100

doi:10.24843.MU.2025.V14.i6.P04

Received social support	4	11.1	32	88.9	36	100
Total	4	8	46	92	50	100

A cross-tabulation analysis between anxiety levels and sociodemographic characteristics revealed notable patterns. Among respondents aged 18–24 years, 80% were at risk of moderate to severe anxiety, whereas 87.5% of those aged ≥ 50 years exhibited minimal to mild anxiety. Regarding educational background, 66.7% of participants with a high school education were at risk of moderate to severe anxiety.

Marital status also showed an association, with 88.9% of widowed respondents being at risk of moderate to severe anxiety. In terms of duration of sex work, 77.3% of those working for less than 5 years reported moderate to severe anxiety. Likewise, all respondents newly diagnosed with HIV and those who had initiated antiretroviral therapy (ART) within the past year were found to be at risk of moderate to severe anxiety.

Furthermore, 80% of participants who had experienced stigma and 74.1% of those with a history of violence reported moderate to severe anxiety. Importantly, all respondents who lacked social support were also at risk of moderate to severe anxiety. Detailed findings are presented in Table 5.

Table 5. Cross-tabulation between anxiety and sociodemographic characteristics among FSWs living with HIV and undergoing treatment at Kerti Praja Foundation (n = 50)

Characteristics	**GAD-7**					
	Minimal to mild anxiety		**Moderate to severe anxiety**		**Total**	
	Frequency (f)	**Percentage (%)**	**Frequency (f)**	**Percentage (%)**	**Frequency (f)**	**Percentage (%)**
Age						
18-24	1	20	4	80	5	100
25-35	5	27.8	13	72.2	18	100
36-49	12	63.2	7	36.8	19	100
≥ 50	7	87.5	1	12.5	8	100
Total	25	50	25	50	50	100
Highest Educational Attainment						
No Formal Education	4	44.4	5	55.6	9	100
Primary School	14	60.9	9	39.1	23	100
Junior High School	5	41.7	7	58.3	12	100
Senior High School	2	33.3	4	66.7	6	100
Total	25	50	25	50	50	10
Marital Status						
Currently Married	9	75	3	25	12	100
Divorced (living)	15	51.7	14	48.3	29	100
Widowed	1	11.1	8	88.9	9	100
Total	25	50	25	50	50	100
Duration of Work as FSW (years)						
< 5 year	5	22.7	17	77.3	22	100
≥ 5 years	20	71.4	8	28.6	28	100
Total	25	50	25	50	50	100
Duration Since HIV Diagnosis (years)						
≤ 1 year	0	0	10	100	10	100
2-5 years	8	36.4	14	63.6	22	100
> 5 years	17	94.4	1	5.6	18	100

Total	25	100	25	100	50	100
Duration on Antiretroviral Therapy (years)						
≤ 1 year	0	0	11	100	11	100
1-3 years	3	21.4	11	78.6	14	100
> 3 years	22	88	3	12	25	100
Total	25	100	25	100	50	100
Experienced Stigma						
Did not experience stigma	13	92.9	1	7.1	14	100
Neutral/ ambiguous	7	63.6	4	36.4	11	100
Experienced stigma	5	20	20	80	25	100
Total	25	100	25	100	50	100
History of Violence						
Never experienced violence	18	78.3	5	21.7	23	100
Experienced violence	7	25.9	20	74.1	27	100
Total	25	100	25	100	50	100
Level of Social Support						
Did not receive social support	0	0	9	100	9	100
Neutral/ ambiguous	4	80	1	20	5	100
Received social support	21	58.3	15	41.7	36	100
Total	25	100	25	100	50	100

DISCUSSION

Based on age distribution, the majority of respondents were within the productive age range of 25–49 years. The study found that respondents aged 18–24 years had a 100% risk of moderate to severe depression, making this the most vulnerable age group. This finding aligns with previous studies indicating that younger FSWs are at higher risk of depression. FSWs who begin their careers at a young age often have a history of childhood trauma, particularly sexual abuse, which contributes significantly to the high prevalence of depression in this group[19] .

Most FSWs living with HIV and receiving treatment at Kerti Praja Foundation had relatively low levels of education. The majority of respondents had only completed primary school. This is consistent with studies showing that the average length of schooling among FSWs ranges from 6.9 to 8.4 years, equivalent to primary to partial secondary education[4] . Interestingly, this study found that respondents with higher levels of education exhibited a greater risk of depressive disorders compared to those with lower educational attainment.

In terms of marital status, most respondents were divorced or single, with the largest proportion belonging to the group of individuals who were divorced but still living. Respondents in this group showed a greater tendency toward depressive disorders, with a 96.6% risk among the divorced-living and 100% among the widowed. These figures are higher than those for respondents who were still married or in a partnership. This finding is consistent with prior research indicating that individuals without a stable partner have a 63% higher risk of experiencing depressive disorders compared to those with a steady partner[27] .

Regarding the length of employment, more than half of the respondents had worked as FSWs for five years or more. However, data analysis showed that the duration of work as an FSW is associated with depression risk. All respondents who had worked as FSWs for less than five years were identified as having a high risk of depressive disorders. These findings suggest that the shorter the duration of employment, the higher the vulnerability to

depression. Work-related stress may explain this phenomenon, as an imbalance between job demands and individual coping capacity can lead to stress that contributes to an increased risk of depressive disorders[20] .

Most respondents were diagnosed with HIV within the last two to five years. In addition, half had been on ART for more than three years. Findings indicated that respondents diagnosed within the past five years and who had been on ART for less than three years were more likely to experience depression compared to those diagnosed and treated for longer periods. Research suggests that individuals diagnosed earlier may have passed through various stages of grief and developed coping mechanisms, whereas newly diagnosed individuals may still be in the early stages of psychological adjustment[25] .

Half of the total respondents reported experiencing stigma related to their profession and HIV status. The study found that 100% of those who experienced stigma were at risk of clinical depression. This aligns with a study conducted in the Dominican Republic, which found that FSWs experiencing internalized stigma were 2.73 times more likely to develop depression than those who were not stigmatized. Moreover, being HIV-positive increased the odds of depression by 3.06 times[4] .

A history of violence was another significant contributing factor to depression risk among FSWs living with HIV. More than half of the respondents reported having experienced violence in their lifetime. The data revealed that all respondents with a history of violence were at high risk of depression. Studies have shown that FSWs who experience violence, whether from intimate partners or clients, are more likely to suffer from depression[3].

A high risk of depression was also found among respondents who lacked social support, with data showing that 100% of them were at risk of depressive disorders. FSWs with low levels of support from family and peers have been shown to be more likely to exhibit depressive symptoms compared to those with stronger social support systems[27] .

Regarding anxiety risk, the data showed that 80% of FSWs aged 18–24 experienced moderate to severe anxiety, making this the age group with the highest risk. This finding is consistent with research conducted in Eastern Ethiopia, which revealed that younger FSWs often lack experience in dealing with stress and the challenges associated with sex work. This lack of preparedness can make them more vulnerable to workplace pressures, thereby increasing their risk of anxiety[24] .

This study found that respondents with a history of higher education levels were more likely to experience moderate to severe anxiety compared to those with lower educational backgrounds. A contributing factor may be academic pressure and anxiety about the future. Studies have demonstrated a significant relationship ($p < 0.005$) between academic pressure and future-related anxiety, where individuals who fail to meet their expectations about the future are more likely to exhibit negative emotional responses that can lead to anxiety disorders[29] . This highlights the need for further research to explore how education affects the mental health of FSWs living with HIV.

Beyond education, marital status also appeared to be related to anxiety risk. Respondents who were divorced or without a partner showed higher levels of moderate to severe anxiety compared to those who were married or had partners. Divorced women are more likely to experience elevated anxiety not only due to separation from their partner but also due to changes in their social life and reduced emotional support, all of which increase the risk of anxiety disorders[21, 27] .

The study found that 77.3% of respondents who had worked as FSWs for less than five years experienced moderate to severe anxiety. This suggests a correlation between shorter work duration and higher anxiety levels, likely due to increased job-related stress in the early years of employment.

All respondents who had been diagnosed with HIV and had been on ART for one year or less were found to have moderate to severe anxiety. This finding is consistent with studies reporting that one-third of participants exhibited anxiety symptoms during the early phase following an HIV diagnosis[16] .

Internalized stigma among individuals with HIV can further exacerbate anxiety. This aligns with the study's findings, in which 80% of FSWs who experienced stigma due to their HIV status also experienced moderate to severe anxiety. FSWs frequently face societal stigma that labels their work as immoral or illegal, leading to feelings of isolation and social uncertainty. This uncertainty may trigger anxiety, particularly in everyday social interactions[16, 27] .

A history of violence is closely associated with the stigma experienced by FSWs and contributes significantly to their elevated anxiety risk. The study revealed that 74.1% of respondents with a history of violence experienced moderate to severe anxiety. This is consistent with previous research showing that FSWs who experience emotional abuse from clients report the highest levels of anxiety symptoms among all anxiety-related variables[3].

The overall level of social support received by respondents was generally high, as indicated by the majority reporting adequate support. This is likely influenced by the research setting, Kerti Praja Foundation through the WM Medika Clinic, which provides comprehensive healthcare and support programs for people living with HIV, including FSWs. The availability of these services likely contributes to the respondent's positive perception of the social support they receive.

doi:10.24843.MU.2025.V14.i6.P04

CONCLUSIONS AND SUGGESTIONS

This study found that most female sex workers (FSWs) surveyed had low educational attainment and were divorced or without partners. Over half experienced social stigma and violence, underscoring their vulnerability. Despite these challenges, many received social support especially from Kerti Praja Foundation, which plays a key role in delivering health education, treatment, and ongoing support.

Approximately 92% of respondents were at risk for clinical depression, particularly younger individuals (18–24 years), those with higher education, no partner, stigma, or a history of violence. Risk was also higher among FSWs who had worked for less than five years, were recently diagnosed with HIV, or had been on ART for under a year. Anxiety levels were equally split, with moderate-to-severe anxiety more common among those with similar vulnerabilities.

Given these findings, it is recommended that Kerti Praja Foundation and WM Medika Clinic incorporate mental health interventions, such as counseling for depression and anxiety—into their HIV services. Special attention should be given to newly diagnosed individuals and recent ART recipients through tailored psychosocial support to improve both mental well-being and treatment adherence.

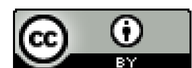
Further research, especially analytic studies using validated mental health tools, is needed to explore these issues in greater depth and should include FSWs receiving care in general health facilities for broader representation.

REFERENCE

1. Opoku Agyemang S, Ninonni J, Bennin L, Agyare E, Gyimah L, Senya K, et al. Prevalence and associations of depression, anxiety, and stress among people living with HIV: A hospital- based analytical cross- sectional study. Health Science Reports. 2022 Aug 8;5(5).
2. Cari van Schalkwyk, Mahy M, Johnson LF, Eaton JW. Updated Data and Methods for the 2023 UNAIDS HIV Estimates. Journal of Acquired Immune Deficiency Syndromes. 2024 Jan 1;95(1S):e1–4.
3. Leis M, McDermott M, Koziarz A, Szadkowski L, Kariri A, Beattie TS, et al. Intimate partner and client- perpetrated violence are associated with reduced HIV pre- exposure prophylaxis (PrEP) uptake, depression and generalized anxiety in a cross- sectional study of female sex workers from Nairobi, Kenya. Journal of the International AIDS Society. 2021 Jun;24(S2).
4. Rael CT, Davis A. Depression and key associated factors in female sex workers and women living with HIV/AIDS in the Dominican Republic. International Journal of STD & AIDS. 2016 Jul 10;28(5):433–40.
5. Kerrigan D, Karver TS, Barrington C, Donastorg Y, Perez M, Gomez H, et al. Mindfulness, Mental Health and HIV Outcomes Among Female Sex Workers in the Dominican Republic and Tanzania. AIDS and Behavior. 2021 Jan 28;
6. Ribeiro Â, Ribeiro JP, von Doellinger O. Depression and psychodynamic psychotherapy. Revista Brasileira de Psiquiatria [Internet]. 2018 Jun 12;40(1):105–9. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6899418/
7. Annisa Ramadhani, Fenny Etrawati, Dwi Santri. Perceived Social Norm and Fear of Stigma Among Young People Living With HIV in Palembang. E-Jurnal Medika Udayana. 2024 Jan 25;13(1):65–5.
8. Sofro MAU, Raharja T, Hadiati T, Sari LK, Jusup I. Proporsi Gejala Depresi dan Hubungannya dengan Terapi ARV: Studi di Poliklinik VCT RSUP Dr. Kariadi. Jurnal Penyakit Dalam Indonesia. 2022 Jul 19;9(2):94.
9. Abelson A, Lyons C, Decker M, Ketende S, Mfochive Njindam I, Fouda G, et al. Lifetime experiences of gender-based violence, depression and condom use among female sex workers in Cameroon. International Journal of Social Psychiatry. 2019 Jun 24;65(6):445–57.
10. Szuhany KL, Simon NM. Anxiety disorders: A review. JAMA [Internet]. 2022;328(24):2431–45. Available from: https://jamanetwork.com/journals/jama/article-abstract/2799904
11. Munir S, Takov V. Generalized Anxiety Disorder [Internet]. PubMed. Treasure Island (FL): StatPearls Publishing; 2022. Available from: https://pubmed.ncbi.nlm.nih.gov/28722900/
12. Adams LM, Wilson TE, Merenstein D, Milam J, Cohen J, Golub ET, et al. Using the Center for Epidemiologic Studies Depression Scale to assess depression in women with HIV and women at risk for HIV: Are somatic items invariant? Psychological assessment [Internet]. 2018 Jan 1;30(1):97–105. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5568988/
13. Millan-Alanis JM, Carranza-Navarro F, de León-Gutiérrez H, Leyva-Camacho PC, Guerrero-Medrano AF, Barrera FJ, et al. Prevalence of suicidality, depression, post-traumatic stress disorder, and anxiety among female sex workers: a systematic review and meta-analysis. Archives of Women’s Mental Health. 2021 Jun 10;24.
14. Nyongesa MK, Mwangi P, Koot HM, Cuijpers P, Newton CRJC, Abubakar A. The reliability, validity and factorial structure of the Swahili version of the

7-item generalized anxiety disorder scale (GAD-7) among adults living with HIV from Kilifi, Kenya. Annals of General Psychiatry. 2020 Oct 28;19(1).

15. Cabral HJ, Davis-Plourde K, Sarango M, Fox J, Palmisano J, Rajabiun S. Peer Support and the HIV Continuum of Care: Results from a Multi-Site Randomized Clinical Trial in Three Urban Clinics in the United States. AIDS and Behavior. 2018 Jan 6;22(8):2627–39.
16. Garrido- Hernansaiz H, Alonso- Tapia J. Predictors of anxiety and depression among newly diagnosed people living with HIV: A longitudinal study. Scandinavian Journal of Psychology. 2020 Jan 30;61(5):616–24.
17. Grosso A, Fielding-Miller R, Matse S, Sithole B, Baral S. The relationship between underage initiation of selling sex and depression among female sex workers in Eswatini. Frontiers in Psychiatry. 2023 Jun 26;14.
18. Ironson G, Henry SM, Gonzalez BD. Impact of stressful death or divorce in people with HIV: A prospective examination and the buffering effects of religious coping and social support. Journal of Health Psychology. 2017 Aug 25;25(5):606–16.
19. Jewkes R, Milovanovic M, Otwombe K, Chirwa E, Hlongwane K, Hill N, et al. Intersections of Sex Work, Mental Ill-Health, IPV and Other Violence Experienced by Female Sex Workers: Findings from a Cross-Sectional Community-Centric National Study in South Africa. International Journal of Environmental Research and Public Health. 2021 Nov 15;18(22):11971.
20. Nowrouzi B, Nguyen C, Casole J, Nowrouzi-Kia B. Occupational Stress: A Comprehensive Review of the Top 50 Annual and Lifetime Cited Articles. Workplace Health & Safety. 2016 Oct 6;65(5):197–209.
21. Rahayu T, Wahyuni S. Studi Eksplorasi Pada Wanita Pekerja Seks. Jurnal Perawat Indonesia. 2017 May 21;1(1):11.
22. Tschoeke S, Borbé R, Steinert T, Bichescu-Burian D. A Systematic Review of Dissociation in Female Sex Workers. Journal of Trauma & Dissociation. 2019 Jan 28;20(2):242–57.
23. Wang Y, He P. The Effects of College Education on Depressive Symptoms: An Instrument Variable Approach. Depression and Anxiety. 2024 Jan 1;2024(1).
24. Yesuf YM, Mekonnen D, Teklu H, Kebede SA. Prevalence and correlates of anxiety and depression among female sex workers in Dire Dawa city Administration, Eastern Ethiopia. 2023 Feb 7;
25. Zeligman M, Wood AW. Conceptualizing an HIV Diagnosis Through a Model of Grief and Bereavement. Adultspan Journal. 2017 Apr;16(1):18–30.
26. Dwindani AT, Putri PM, Nitiprodjo AH, Kusumawati A. The Correlation Between Knowledge And Economic Levels with HIV/AIDS Transmission Prevention Behavior on Housewives In Mersi Village, Purwokerto Timur Sub-District, Banyumas Regency. E-Jurnal Medika Udayana. 2022 Jul 27;11(7):18.
27. Jorjoran Shushtari Z, Mirzazadeh A, SeyedAlinaghi S, Hosseini SA, Sajjadi H, Salimi Y, et al. Social Support Associated with Condom Use Behavior Among Female Sex Workers in Iran. International Journal of Behavioral Medicine. 2021 Sep 2;
28. Mutia Hazlinda, Salim A. Hubungan Antara Tekanan Akademik Dengan Kecemasan Masa Depan Pada Mahasiswa. Jurnal Riset dan Inovasi Pembelajaran. 2023 Dec 31;3(3):265–73.



doi:10.24843.MU.2025.V14.i6.P04