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# Psychological Distress and Coping Style in Pakistani Patients with Human Immunodeficiency Virus (HIV)

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## Abstract
The study aimed to investigate the relationship between depression, stress, anxiety, and coping styles in Pakistani HIV patients. A sample of 300 HIV-positive patients aged 20-30 was selected from Mayo Hospital, Lahore, and they completed the Depression, Anxiety, Stress Scale (DASS-21) and Coping Styles Scale (CSS). The results showed that depression had a strong positive correlation with anxiety and stress in HIV patients. Problem-focused coping (PFC) was negatively correlated with depression. PFC had a positive correlation with emotion-focused coping (EFC) and there was a positive correlation between EFC and anxiety. The correlation between PFC and stress was marginally significant and negative. The evidence indicates that depression creates a negative predictive link with PFC yet stress alters this pattern. Larger stress exposure appears to reduce the negative link between depression and PFC thus causing the individuals affected by high depression severity and stress to have elevated PFC levels. Research needs to evaluate how well depression management programs together with stress control programs and coping enhancement strategies affect mental health results for HIV patients.

***Keywords:*** Human Immunodeficiency Virus, Coping Styles, Depression, Anxiety, Stress

## Introduction
The population which has Human Immunodeficiency Virus (HIV) experiences psychological distress frequently. The health of HIV patients suffers together with their quality of life and medical treatment response when experiencing psychological stress (Sweeney & Vanable, 2016). Lazarus and Folkman's (1984) transactional model of stress and coping creates useful guidelines to examine connections between psychological distress and coping approaches. This theory presents two types of coping strategies which focus on problems or emotions while their effectiveness depends on strategy-method stressor alignment. Individuals with HIV encounter psychological distress because of multiple factors that include stigma along with discrimination according to Sweeney & Vanable (2016). The psychiatric research indicates that individuals living

with HIV will commonly develop depression and experience anxiety and post-traumatic stress disorder symptoms while forming substance addictions (Au et al., 2019). Different individual coping approaches exist for managing psychological HIV-related stress between problem-focused and emotion-focused coping according to Mann et al. (2017) and also Mann et al. (2017). Research by Au et al. (2019) along with Mann et al. (2017) has established a connection between psychological distress in HIV patients and demographic characteristics and social support and access to medical care and adherence to antiretroviral therapy.

Patients in Pakistan with HIV typically resort to avoiding their problems by withdrawing from social contacts and denying their condition to manage stigma-related stress (Waheed et al., 2018). Patients implementing approach-based coping measures that combine problem-solving and social support networks tend to report reduced psychological distress in their lives according to Waheed et al. (2018). The identification of successful coping strategies remains essential for patients living with HIV in Pakistan since the stigma surrounding the condition causes discrimination in society. Researchers carried out a research study to analyze the relationship between psychological distress and coping styles among Pakistani patients infected with HIV. Based on the available literature this study as carried out to investigate the relationship between depression, stress, anxiety, and coping styles in Pakistani HIV patients. It was hypothesized that, "There would be a statistically significant predictive association between psychological distress and coping style in Pakistani HIV patients." The results of this study may have implications for the development of culturally-sensitive interventions that address the psychological needs of people living with HIV in Pakistan.

## Method

The study was conducted after the approval of the Ethical Review Board of COMSATS University, Lahore, with Ref. No. CUI/LHR/HUM/0245 on 15 February 2022.

### Research design

The cross-sectional research approach of the current study establishes the association between psychological distress, suicidal thoughts, and coping styles in Pakistani HIV patients.

### Participant and sampling strategy

The data was collected from 300 HIV-positive patients aged 20-30 (middle adulthood) through purposive sampling. Scales were used for data collection, and patients were taken from the outpatient department of Mayo Hospital, Lahore. Inclusion and exclusion criteria were drawn for the study to control the effect of confounding variables. Participants with HIV II, aged 20 to 30 years (early adulthood), who were admitted to medical facilities and seeking treatment for more than three months were taken for research. The participants not receiving treatment and diagnosed with mental disorders were excluded from the study.

**Table 1** *Demographic characteristics of participants*

| Variables | Frequency | Percent |
|---|---|---|
| **Education** | | |
| Uneducated | 144 | 47.8 |
| Matriculation | 119 | 39.5 |
| Intermediate | 19 | 6.3 |
| Bachelors | 19 | 6.3 |
| **Family status** | | |
| Nuclear | 190 | 63.1 |

| | | |
|---|---|---|
| Joint | 111 | 36.9 |
| **Marital status** | | |
| Unmarried | 159 | 52.8 |
| Married | 134 | 44.5 |
| Divorced | 8 | 2.7 |
| **Diagnosed mental illness** | | |
| Yes | 54 | 17.9 |
| No | 247 | 82.1 |
| **Type of HIV** | | |
| Type 1 | 5 | 1.7 |
| Type 2 | 296 | 98.3 |
| **Time since HIV is diagnosed** | | |
| Three months | 105 | 34.9 |
| More than three months | 129 | 42.9 |
| More than a year | 67 | 22.3 |

*Note. N=301*

## Measures

### Informed consent form

In this form, the study's objective was explained to the participants, who were asked to participate voluntarily. Moreover, their written agreement for participation was also included in the form.

### *Demographic information form*

The demographic information form included all the essential information of the participant, such as age, qualification, marital status, family system, family monthly income, birth order, presence of any diagnosed mental illness, type of HIV, and time since diagnosis with HIV.

### *The Depression, Anxiety, and Stress Scale (DASS-21)*

DASS-21 is 21 item scale including three self-report subscales. DASS-21 measures negative emotions such as anxiety, stress, and depression. These three sub-scales further contain seven items each. The scores range from mild to extremely severe. The Cronbach's alpha values for the subscales of depression, anxiety, and stress are 0.81, 0.89, and 0.78, respectively. This scale is valid and reliable. The Urdu-translated version of DASS-21 (Naeem Aslam, 2008) was used for the Pakistani population.

### *Coping Styles Scale (CSS)*

Adults between 18 and 50 are the Coping Styles Scale (CSS) target demographic. It is a 22-item self-report assessment tool. Each question is answered on a 5-point Likert scale to indicate how much it applies to the respondent. Scores range from 5 for "always" to 1 for "never." With strong Cronbach's alpha, split-half, and test-retest reliability for emotion-focused coping (i.e., .89, .80, & .74) and problem-focused coping (i.e., .87, .84, & .80) respectively, Zaman (2015) reported positive psychometric features of the Coping Styles Scale. In the current investigation, the CSS's Urdu translation was employed.

## Procedure

At first, permission for data collection was taken from Punjab AIDS Control Program; after the permission was granted, a participant from a particular hospital was given the informed consent

form. They received instructions on the study's objectives, the time required to complete the questionnaire, and the confidentially of their answers. After receiving an introduction and an informed consent form, participants completed a demographic sheet, the DASS-21, and the Coping Styles Scale.

**Ethical Considerations**

During the study, ethical considerations were followed for collecting data and conducting the research. Participants were well informed of the study's objective, and their confidentiality was ensured; they had the right to withdraw from the participation at any time. The scales used for data collection were used after taking permission from the authors.

**Statistical Analysis**

Pearson Product Correlation and multiple regression analysis will be applied to determine the association and predictive association among psychological distress, suicidal ideation, and coping style in HIV II patients. Descriptive analysis was required to measure demographic variables' standard deviation and mean.

**Results**

**Table 2** Correlations between Depression, Anxiety, Stress, Problem-Focused Coping (PFC), and Emotion -Focused Coping (EFC) in patients with HIV

| Variables | Depression | Anxiety | Stress | PFC | EFC |
|---|---|---|---|---|---|
| Depression | 1.00 | .64** | .82** | -.24** | -.08 |
| Anxiety | .64** | 1.00 | .59** | .01 | .16** |
| Stress | .82** | .59** | 1.00 | -.12* | -.02 |
| PFC | -.24** | .01 | -.12* | 1.00 | .65** |
| EFC | -.08 | .16** | -.02 | .65** | 1.00 |

**Note.** **p < .01, *p < .05. PFC = Problem-Focused Coping, EFC = Emotion-Focused Coping, *N=301*

The results suggest that depression is strongly correlated with both anxiety ($r = 0.64$, $p < 0.01$) and stress in patients with HIV ($r = 0.81$, $p < 0.01$). Interestingly, problem-focused coping (PFC) has a negative correlation with depression ($r = -0.23$, $p < 0.01$), suggesting that individuals who use more problem-focused coping mechanisms are less likely to experience depression. PFC also has a positive correlation with EFC ($r = 0.65$, $p < 0.01$), indicating that patients who use more problem-focused coping mechanisms are also more likely to use emotion-focused coping mechanisms. There is no significant correlation between EFC and depression or anxiety, but there is a positive correlation between EFC and anxiety ($r = 0.16$, $p < 0.05$). Finally, the correlation between PFC and stress is negative but only marginally significant ($r = -0.12$, $p < 0.05$). These results suggest that depression, anxiety, and stress are strongly correlated, while problem-focused coping mechanisms may help reduce depression. Emotion-focused coping mechanisms do not appear to correlate strongly with depression or anxiety in Pakistani patients with HIV.

**Table 3** *Stepwise Linear Regression analysis and analysis of variance statistics for* predicting *Problem-focused coping* activation from depression and stress *in HIV patients*

| Predictor | B | Std. Error | Beta | t-value | Sig. | 95% CI Lower Bound | 95%CI Upper Bound | $R^2$ | Adjusted $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| Model 1 Constant | 28.63 | 0.65 | | 44.09 | 0.00 | 27.35 | 29.91 | 0.06 | 0.05 |
| Depression | -0.47 | 0.11 | -0.24 | -4.21 | 0.00 | -0.68 | -0.25 | | |
| Model 2 Constant | 28.03 | 0.70 | | 39.87 | 0.00 | 26.65 | 29.42 | 0.07 | 0.06 |
| Depression | -0.80 | 0.19 | -0.41 | -4.21 | 0.00 | -1.17 | -0.43 | | |
| Stress | 0.30 | 0.14 | 0.21 | 2.15 | 0.03 | 0.03 | 0.58 | | |

***Note.*** *N=300*

The table shows the coefficients for two linear regression models predicting PFC activation from depression and stress. Model 1 includes only depression as a predictor variable, while Model 2 includes depression and stress. The results of two linear regression models predict PFC, one with depression as the only predictor and one with depression and stress as predictors. The R-squared value of the first model (0.06) indicates that depression explains 5.6% of the variance in PFC. Adding stress to the model in the second step increases the R-squared value to 0.07, indicating that the two predictors together explain 7.1% of the variance in PFC. In the first model, the coefficient for depression is negative and significant ($b = -0.47$, $p < 0.001$), indicating that higher levels of depression are associated with lower levels of PFC. In the second model, the coefficient for depression remains negative and significant ($b = -0.80$, $p < 0.001$), indicating that depression is a significant predictor of PFC even when controlling for stress. The coefficient for stress is positive and significant ($b = 0.30$, $p = 0.03$), indicating that higher stress levels are associated with higher levels of PFC when controlling for depression. Both regression models demonstrate a significant intercept value ($p < 0.001$) which indicates PFC has a constant significant effect. Study data demonstrate that depression displays a negative relationship to PFC while stress potentially interferes with this connection. The strength between depression and PFC shows a negative correlation where stress raises as high stress levels diminish this relationship to achieve elevated PFC levels among individuals suffering from depression and stress more severely than from depression alone.

**Discussion**

The population suffering from HIV experiences high rates of depression and anxiety and stress symptoms (Zhang et al., 2021). People who have these conditions heavily rely on coping strategies for their management. Gelaye et al., (2017) discovered that research data showed researchers found a strong positive connection between depression and anxiety ($r = 0.64$, $p < 0.01$) and between depression and stress ($r = 0.81$, $p < 0.01$). Research shows patients with HIV need complete treatment of depression alongside anxiety and stress to enhance their mental health condition.

Zhang et al. (2021) discovered a significant negative relationship between depression levels and problem-focused coping strategies with ($r = -0.23$, $p < 0.01$). The research data shows that higher use of problem-focused coping techniques leads to lower depression rates among individuals. Studies have established that problem-focused coping strategies like problem-solving decrease depression according to Lazarus and Folkman (1984). The treatment approach of healthcare

professionals should include training patients to implement problem-focused coping methods as a means to control their depression symptoms.

The research established a strong direct relationship between PFC and emotion-focused coping (EFC) with a correlation value of 0.65 ($p < 0.01$). The research data indicates that when people implement problem-focused coping methods they tend to select emotion-focused coping methods as well. Research shows EFC serves as an effective way to handle anxiety together with stress (Compas et al., 2001). Healthcare providers should assist patients by teaching them to employ both problem- and emotion-based coping methods for improving their mental wellbeing. The relationship between emotional coping strategies and depression or anxiety was non-significant yet a positive relationship existed between emotional coping strategies and anxiety levels ($r = 0.16$, $p < 0.05$). The research results endorse that anxiety treatment benefits better from emotion-focused coping methods than from approaches targeting depression. More studies need to investigate the current relationship between the variables.

The research demonstrated a negative weak association between PFC and stress ($r = -0.12$, $p < 0.05$). Problem-focused coping proves useful for stress reduction although alternative coping methods seem to be more effective according to this study finding. Research on coping strategies and psychological distress within the HIV/AIDS population performed multiple investigations in Pakistan. Doctors Siddiqui et al. (2019), Mubarik et al. (2020) in addition to Shuja and Ahmad (2018) together with Raza et al. (2019) and Sheikh et al. (2020) concluded that the coping styles influence the psychological state of patients with HIV/AIDS in Pakistan.

Depression proves to be an important predictor of PFC according to Zhang et al. (2021) even after stress from HIV disease is accounted for. People suffering from depression demonstrate reduced capability to apply problem-focused coping approaches for managing stressful situations. Previously studied findings confirm that depression produces disabilities in humans who create functional coping strategies (Compas et al., 1993). The research data indicated stress can make depression and PFC relationships more or less intense in HIV patients. The results showed PFC increased parallel to elevated stress measures in HIV patients after accounting for depression scores (Zhang et al., 2021). Stressful circumstances seem to encourage people to implement problem-focused coping methods for maintaining control of their challenges along with their depressive symptoms. Research by Brandt et al. (2019), Badahdah et al. (2019) alongside other investigations has demonstrated that HIV patients who use problem-focused coping strategies also obtain better mental health outcomes.

**Limitations and Suggestions**

The study was limited by the reluctance of HIV-positive individuals to participate due to the stigma and discrimination associated with the disease in Pakistani culture. The researcher also faced difficulties accessing hospitals for data collection and could only collect data from Mayo Hospital Lahore. Furthermore, the data collection was limited to male participants only, as there is more stigma and discrimination towards women regarding HIV in Pakistani culture. Lastly, the study was limited to the population of Lahore city due to time constraints and limited resources, which may limit the generalizability of the results to other regions in Pakistan.

Future studies could employ measures to address stigma and discrimination associated with HIV to encourage greater participation of HIV-positive individuals. Researchers could seek to collaborate with hospitals and medical professionals to improve access to data collection. Future

studies could also aim to include a diverse sample, including both male and female participants, to understand better the impact of HIV-related stigma and discrimination on different gender groups. Researchers could expand the study to other regions in Pakistan to increase the generalizability of the results. Future studies could explore additional psychological factors such as resilience, conscientiousness, and neuroticism to gain a better understanding of the psychological impact of HIV.

## Conclusion

In conclusion, the study found that depression, anxiety, and stress are strongly correlated among patients with HIV in Pakistan. However, depression is negatively associated with problem-focused coping in HIV patients, while stress may moderate this relationship. Addressing depression and stress through targeted interventions may help individuals with HIV to develop effective problem-focused coping strategies to manage stressors. Future research should examine the effectiveness of interventions targeting depression, stress, and coping in improving mental health outcomes for HIV patients.

## Statements and Declarations

### Competing interests

The authors of this study have no competing interests to declare.


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### Data Availability Statement

Data will be provided upon request

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