

The Relationship between Neuroticism and Psychological Distress in the Covid-19 Pandemic: The Mediating Role of Perceived Stress and Loneliness

Mohadese Bayat¹, Ezzatollah Ahmadi^{2*}, Rahim Yousefi³

1. MA. Department of Psychology, Azarbaijan Shahid Madani University, Tabriz, Iran.

2. Department of Psychology, Azarbaijan Shahid Madani University, Tabriz, Iran.

3. Department of Psychology, Azarbaijan Shahid Madani University, Tabriz, Iran

*Corresponding Author Email: amiraliahmadi91@yahoo.com

Extended Abstract

Background and Objectives

The COVID-19 pandemic has emerged as a multifaceted global crisis, not only affecting physical health but also exerting widespread psychological and social pressure on individuals. The pandemic has triggered a rise in psychological distress, including anxiety, depression, and stress-related disorders. These effects are especially pronounced in populations subjected to social isolation, economic hardship, and prolonged uncertainty. Among the psychological variables contributing to individual differences in coping with such crises, personality traits, particularly neuroticism, play a significant role. Neuroticism, characterized by emotional instability and a predisposition toward negative emotions, is known to increase vulnerability to mental health disorders. Furthermore, perceived stress—the subjective evaluation of one's ability to manage demands—and loneliness have been identified as crucial psychological experiences during the pandemic. This study aimed to investigate whether neuroticism predicts psychological distress and whether this relationship is mediated by perceived stress and loneliness among university students during the COVID-19 pandemic.

Materials and Methods

This descriptive-correlational research utilized a structural equation modeling (SEM) framework to assess the relationships among neuroticism, perceived stress, loneliness, and psychological distress. The study population included all students of Azarbaijan Shahid Madani University in 2022. A total of 300 students were selected using convenience sampling, ensuring a broad demographic representation. Participants completed a battery of validated questionnaires distributed online: the NEO Five-Factor Inventory (NEO-FFI) to assess neuroticism, Cohen's Perceived Stress Scale (PSS), Kessler Psychological Distress Scale (K10), and the Social and Emotional Loneliness Scale for Adults (SELSA-S). The reliability of each scale was confirmed with Cronbach's alpha coefficients ranging from 0.83 to 0.92.

Data were analyzed using SPSS 26 and AMOS 22. Preliminary checks for normality, multicollinearity, and sample adequacy confirmed the suitability of the data for SEM. The goodness-of-fit indices, including RMSEA

= 0.074, CFI = 0.97, and NFI = 0.95, indicated that the proposed model was statistically acceptable. Bootstrapping was used to test the significance of indirect paths.

Results

Findings indicated that neuroticism significantly predicted both perceived stress ($\beta = 0.55$, $p < 0.001$) and loneliness ($\beta = 0.40$, $p < 0.001$), suggesting that emotionally unstable individuals experienced greater subjective stress and isolation. Additionally, both perceived stress ($\beta = 0.40$, $p < 0.001$) and loneliness ($\beta = 0.28$, $p < 0.001$) significantly predicted psychological distress. These outcomes provide evidence that individuals with higher neuroticism scores tend to experience elevated levels of stress and loneliness, which in turn increase symptoms of anxiety, depression, and emotional suffering.

Furthermore, the indirect effects of neuroticism on psychological distress through the mediators were statistically significant. The path via perceived stress yielded an indirect effect of $\beta = 0.22$ ($p = 0.003$), while the path via loneliness yielded $\beta = 0.11$ ($p = 0.010$). This supports a partial mediation model where perceived stress and loneliness explain part of the relationship between neuroticism and psychological distress, while a direct path from neuroticism to distress remains significant.

Discussion

The results of this study affirm the central role of neuroticism as a psychological vulnerability factor during pandemics. Individuals high in neuroticism are less able to regulate their emotions effectively, making them more susceptible to internalizing stress and experiencing emotional disturbances. These traits manifest more acutely during crises, such as the COVID-19 pandemic, when environmental stressors are prolonged and unavoidable.

The mediating role of perceived stress suggests that the cognitive appraisal of stressors intensifies the emotional burden for neurotic individuals. Similarly, the finding that loneliness partially mediates the relationship highlights the critical importance of social connection in psychological well-being. Social isolation, driven by pandemic restrictions, exacerbates feelings of emotional disconnection, particularly in those already predisposed to negative affect.

These findings align with previous studies emphasizing the importance of individual differences in stress response and emotional outcomes during global crises. Psychological interventions aimed at increasing emotional regulation, stress management, and social connectedness—especially among neurotic individuals—can help reduce the severity of psychological distress. Universities and mental health providers should consider screening for personality risk factors and delivering targeted support services during and after large-scale stress events.

Conclusion

The study concludes that neuroticism is a key predictor of psychological distress during the COVID-19 pandemic, operating both directly and indirectly through loneliness and perceived stress. These mediating variables not only amplify distress but also offer potential targets for intervention.

Given the continued relevance of pandemics and large-scale stressors, the findings suggest the importance of:

- Teaching self-care and stress management skills
- Promoting social connectivity and reducing loneliness
- Monitoring vulnerable personality traits such as neuroticism in crisis contexts

These efforts can help individuals better navigate emotional challenges and minimize long-term psychological damage in similar future events.