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The mediating role of perceived stress in the relationship between neuroticism and death anxiety among women in Isfahan during the coronavirus pandemic

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Abstract:

BACKGROUND: The aim of this study was to evaluate the structural modeling of the mediating role of perceived stress in the relationship between neuroticism and death anxiety among 25–50-year-old women during coronavirus infection.

MATERIALS AND METHODS: The present correlational study was conducted with the presence of 130 people (women) using the available sampling method in Isfahan. The Perceived Stress Scale, BFI Five Factor Scale and Death Anxiety Scale were used to measure the research variables. Data analysis was performed using structural equation modeling, and also SPSS version 23 and Smart PLS3 statistical.

RESULT: Findings show that the indirect coefficient of neuroticism on death anxiety mediated by perceived stress in the model was significant ($P < 0.05$) although the mediation rate was partial. Also, in modeling structural equations, the direct effect of perceived stress on death anxiety (0.195), neuroticism on perceived stress (0.305), neuroticism on death anxiety (0.407) were achieved significantly (05/0p).

CONCLUSIONS: Based on the results of the study, it can be concluded that with increase of neuroticism, death anxiety increases in women and with the entry of perceived stress in this regard and increasing this variable in women, the effect of neuroticism on death anxiety increases. Paying attention to this mechanism can be useful in formulating effective preventive and therapeutic interventions for women to reduce the effects of neuroticism and death anxiety.

Keywords:

Covid_19, death anxiety, perceived stress, personality traits, structural equation model, women's health

Introduction

Human history has been influenced by many pandemics. At the beginning of the twenty-first century, the international community faced an emergency situation with the outbreak of acute respiratory disease (SARS) as a specific disease all over the world and across international borders.^[1] Later, in late December 2020, the

World Health Organization announced a new virus known as the coronavirus disease 2019 (COVID-19), as a contagious virus that spreads rapidly from person to person. Finally, in January 2020, an international public health emergency was declared.^[2] To date, the number of deaths due to the virus in the world, according to global data, has reached 4,941,183 people.^[3] During the pandemic, people were more likely to show negative emotions such as anxiety, stress

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and depression, while the incidence of positive emotions such as happiness was significantly reduced and the production of negative emotions for people has played a protective role.^[4] Given the undeniable effects of the coronavirus, such as anxiety and stress, the aim of the present study was to investigate the relationship between death anxiety and neuroticism during the pandemic and to investigate the mediating role of perceived stress.

Because the coronavirus pandemic is a public health emergency of international concern, it is a cause for anxiety. Anxiety alone is a warning response to a vague, unknown, and internal peril that's unconscious and willful and is caused by several factors.^[5] In the meantime, one of the most important challenges that everyone faces, especially in a pandemic, is the reality of death and the resulting anxiety. Death is an undeniable fact of the end of human life. In many cases, death anxiety is defined as a general and great fear that includes negative thoughts and feelings about one's death and the loss of important people in life.^[6] The results of Martínez-López *et al.*'s^[7] research in the pandemic period show that the high rates of death anxiety among social workers, the highest values of fear related to the death of others are 81.6 and fear of the death process of others 78.3, and also, women are at greater risk of fear of the others death. The results of Suhail and Akram have shown that women with less religious beliefs and of older age have more death anxiety, which indicates the relationship between death anxiety and religion, age and gender.^[8] One of the factors that increase or decrease the rate of death anxiety is gender. Research in the United States show that women experience higher levels of death anxiety than men.^[9]

According to the five-factor theory of Costa & McCrea, neuroticism is a personality trait in which a person has a relatively constant tendency to provide intense emotional responses to threats, frustration and failure, as well as being prepared to express negative emotions.^[10,11] In general, people with neurotic characteristics are more likely to experience stress, attention-seeking, hostility, and low self-esteem, and also to experience negative emotions with greater and higher intensity.^[11,12] The results of a study by Chappelle *et al.*^[13] show that neuroticism is higher in female employees of military aircraft compared to civilian women and ascertains the effect of job position on personality traits in women.

In determining the extent of the pandemic effect on individuals, various factors have played an important role, such as stress, which in the general definition refers to a condition that disrupts a person's normal psychological or physical functions. And the more stressful events a person experiences, the more different mental and physical disorders he or she will

experience. Therefore, one of the appropriate ways to prevent all kinds of mental and physical disorders and consequently, reduce the related injuries is to employ a moderating model.^[14] Perceived stress reflects an overall assessment of the importance and severity of environmental and personal challenges, and in fact, it is the body's response to a change that requires adaptation or a physical, emotional, and mental response.^[15]

Kakavand and Damercheli, in their research, have shown that perceived stress plays a mediating role in relation to neurosis and blood pressure.^[16] The results of Pradhan *et al.*'s^[17] study have demonstrated the mediating role of perceived stress in the relationship between death anxiety and neuroticism in students. The results of studies such as Frazier and Foss-Goodman and Templer have indicated a significant positive relationship between neuroticism and death anxiety.^[18,19] However, considering the role of women in the family and the importance of their mental health and considering the shortage of research in this field, the present study investigated the relationship between neuroticism and death anxiety during the COVID-19 pandemic, among women between 25 and 50 years old and also examined the role of perceived stress as a mediator. In this regard, the main question of the present study was whether perceived stress had a mediating role in the relationship between neuroticism and death anxiety?

Materials and Methods

Study design and setting

The present structural equation model is a correlational study, and the sample size included 130 subjects selected via convenience sampling method. In the data analysis, Pearson correlation coefficient method and structural equation modeling using SPSS version 23 and Smart PLS3 software were used.

Study participants and sampling

This study was conducted on a sample population including all the women in the age range of 25 to 50 years in Isfahan city in the winter of 2021. The sample size included 130 subjects.

Data collection tools and technique

- **The Death Anxiety Scale** is a self-administered questionnaire of 15 items that was developed by Templer in 1970, which measures participants' attitudes toward death. This scale is a yes-no questionnaire with a score (1 or 0).^[20] The questionnaire is scored from 0 (no death anxiety) to 15 (very high death anxiety) with a midpoint of 6 or 7 as cutoff, more than 7 to 15 (high death anxiety) and less than 6 to 0 (low death anxiety). The correlation coefficient of 0.86 was obtained by Templer.^[21] Masoudzadeh

et al.^[22] reported a correlation coefficient of 0.95 of questions on the Death Anxiety Scale. In the present study, Cronbach’s coefficient alpha was 0.792.

- **The BFI Five Factor Scale** included 44 questions that measure the five main factors of (1) extraversion, (2) adaptability, (3) conscientiousness, (4) neuroticism, and (5) openness. In the American and Canadian samples, the internal consistency of the five subscales ranged from 0.75 to 0.90.^[23] Internal consistency of the five subscales of this tool in Iran varied from 0.60 to 0.81.^[24] In the present study, reliability was reported to be 0.88 using the Cronbach’s alpha coefficient.
- **The Perceived Stress Scale** was first developed by Cohen *et al.* in 1938. This tool can be used to see how well people recognize their stress when dealing with life’s unpredictable and uncontrollable events. The perceived stress questionnaire has 14 questions. The answers are in the form of five Likert options from 0 (never) to 4 (always). Cohen *et al.*^[25] obtained the Cronbach’s alpha coefficient for this scale between 0.84 and 0.86 in three groups of subjects (two groups of students and one heterogeneous group). Cronbach’s alpha coefficient in the present study was negative stress 0.722, positive stress 0.725 and total stress 0.842, respectively.

Ethical consideration

The current study is a correlational study that was undertaken to assess the stress and anxiety of women during the COVID-19 epidemic with no risk to participants. It was also intended to maintain the participants’ anonymity and freedom.

Results

The results of descriptive findings and internal correlation of research variables are presented in Table 1. The results show that the internal correlation of research variables is significant ($P < 0.01$).

The model of the effect of neuroticism on death anxiety with the mediating role of perceived stress is presented in Figure 1. The model fit indices are also presented in Table 2.

Table 2 shows that in measurement models, each of the composite reliability and Cronbach’s alpha indices in the research variables is higher than 0.7 and acceptable. Also, average variance extracted in all variables was higher than 0.5. The Fornell–Larcker index in all variables was higher than the correlation of variables with each other in the model and acceptable in all variables. The fit of measurement models is good. The perceived stress variable’s coefficient of determination (0.093) and the death anxiety variable’s coefficient of determination (0.2), in the structural model fit demonstrate the percentage of

Table 1: Descriptive findings and internal correlation of research variables

Variable	Mean	SD	1	2
Neuroticism	17.9	4.27		
Death anxiety	27.22	7.29	** .262	
Perceived stress	4.76	1.12	** .222	** .272

* $P < 0.05$, ** $P < 0.01$

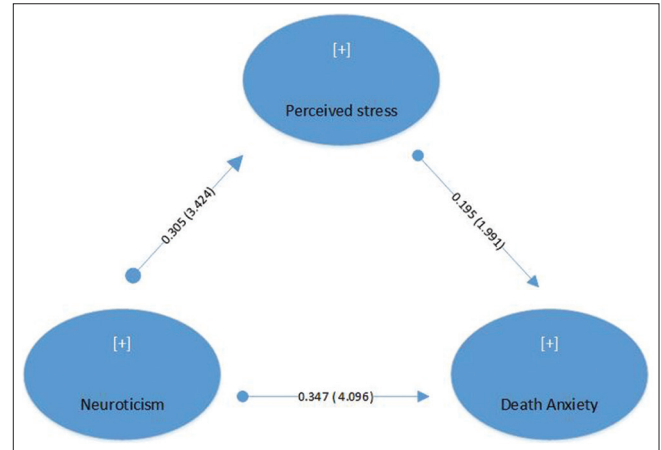


Figure 1: Model of the effect of neuroticism on death anxiety with the mediating role of perceived stress

changes that depend on the independent variable. The perceived stress variable’s coefficient of determination is 10.3% and the death anxiety variable’s coefficient of determination is 13.7%. VIF is also less than 2.5.

Based on the results in Table 3 in modeling structural equations, the direct effect of perceived stress on death anxiety (Conff = 0.195, $T = 2.08$), neuroticism on perceived stress (Conff = 0.305, $T = 3.32$), neuroticism on death anxiety (Conff = 0.407, $T = 6.57$) were significant. The value of t in direct effect in the model is higher than 1.96. According to the results, with increasing perceived stress, death anxiety increases; also with increasing neuroticism, perceived stress increases, and with increasing neuroticism, death anxiety increases. The results in Table 3 in the section on indirect effect have shown that the indirect effect of neuroticism on death anxiety mediated by perception stress (Conff = .059, $T = 1.99$) is significant ($P < 0.05$). Therefore, perceived stress mediates the relationship between neuroticism and death anxiety. VAF coefficient in this path, which is equal to 0.24, is partial. In other words, with the increase of neuroticism, death anxiety increases in women, and with the introduction of perceived stress in this regard and the increase of this variable in women, the effect of neuroticism on death anxiety increases.

Discussion

The present study aimed to investigate the relationship between perceived stress, death anxiety and neuroticism

Table 2: Model fit indices of the measurement models and the structural model

Model fit	Required amount	Perceived stress	Death anxiety	Neuroticism
R^2	-	0.093	0.2	-
R^2 Adjusted	-	0.086	0.187	-
R^2	-	0.103	0.137	-
Composite Reliability	>0.7	0.963	0.844	0.806
Cronbach's Alpha	>0.7	0.923	0.804	0.727
Average Variance Extracted (AVE)	>0.5	0.928	0.513	0.582
Fornell-Larcker	-	0.963	0.716	0.786
VIF	<2.5	1.03	-	1.000

Table 3: Total, direct and indirect effects of research variables

Effects	Independent variable	Mediator	Dependent variable	Standard coefficient	Sample Mean	Standard deviation	T statistic	P
Total	Perceived stress	→	Death anxiety	0.195	0.201	0.093	2.08	<0.05
	Neuroticism	→	Perceived stress	0.305	0.324	0.092	3.32	<0.001
	Neuroticism	→	Death anxiety	0.407	0.447	0.062	6.57	<0.001
Direct	Perceived stress	→	Death anxiety	0.195	0.201	0.093	2.08	<0.05
	Neuroticism	→	Perceived stress	0.305	0.324	0.092	3.32	<0.001
	Neuroticism	→	Death anxiety	0.347	0.381	0.083	4.19	<0.001
Indirect	Neuroticism	Perceived stress	Death anxiety	0.059	0.066	0.04	1.99	<0.05

among women during the coronavirus pandemic. As for the first result, results indicated that neuroticism had a direct impact on death anxiety and with the increase of neuroticism, the rate of death anxiety in women increased. The findings of this study are consistent with the findings of previous studies such as those by Templer, Fraser and Foss Goodman.^[18,19] Furthermore, in the study by Pradhan *et al.*^[17] the results showed a positive relationship between death anxiety and neuroticism during the pandemic among Pakistani youth. Second, our results demonstrated that as neuroticism increases, so does perceived stress. These results are consistent with the findings of Montolio *et al.*^[26] that the high rate of neuroticism is related to the high level of perceived stress in individuals. Moreover, Korotkvo's research has shown that personality traits such as extraversion, openness to experience and neuroticism mediate the relationship between stress and health, which occurs by modifying or increasing that health or lack of mental health.^[27] The reason for this can be seen in the fact that neuroticism is one of the introductory dimensions of personality and is the foundation of numerous injuries and disorders such as anxiety and depression.^[28] In the definition of etiological texts, neuroticism is considered as a pathological factor that the degree to which a person has this feature shows the difference between them and other disorders.^[29] Neurotic persons are more likely to react negatively to stressful situations as a result of their worry and helplessness, as they are more prepared to experience emotions and express negative behaviors.^[30] As a result, identifying and thinking about stressful situations such as death and subsequent occurrences is one of the techniques for individuals with neurotic features. Furthermore, in a time of pandemic, neuroticism

can predict how much psychological suffering people will experience.^[31]

According to other findings, the rate of death anxiety rises as perceived stress rises. The findings of this study are consistent with the results of the study by Chang *et al.* and Pradhan *et al.*, which shows a positive relationship between stress and death anxiety.^[17,32] The results of a study by Zarei also show that stress is perceived as a risk factor in increasing the symptoms of depression and anxiety in nurses.^[33] It may be claimed that different factors cause stress in a person, but what matters from a cognitive perspective is the sort of stress perception a person has, which can be defined in both positive and negative ways. In a negative perception of stress, a person looks at stressors with a negative view and shows a negative reaction such as fear, anxiety and mistrust.^[34] As a result, the person uses an avoidant and emotion-oriented coping style to get away from the stressful situation that exposes them to the experience of more psychological turmoil. Normally, if a person has proper control over their stress and the amount of stress is normal and acceptable, the person will show fewer symptoms of behavioral and psychological symptoms. As a result, the person experiences less anxiety due to thinking about their own death and that of those around them.^[35]

The most recent discoveries of this study show that perceived stress mediates the relationship between death anxiety and neuroticism, and people with high levels of neuroticism are more likely to be negatively affected by negative emotions and experience more stress during pandemics due to a lack of appropriate adaptation skills.

As a result, perceived stress and death anxiety increase in them.

Limitations and suggestions

One of the most significant limitations of the present study is that this study was conducted in the age range of 25 to 50 years in Isfahan during the winter of 2021. As a result, generalizing findings to different age groups and other periods should be done with caution. Furthermore, because the female community was chosen to conduct the study, it is advised that in future research, the male community, in addition to women, be researched. Because of the aforementioned constraint, it is advised that in future studies, a larger sample group be researched over a longer time period to boost the data's generalizability.

Conclusion

The findings reveal that there is a strong association between neuroticism and death anxiety, with perceived stress viewed as a mediating variable moderating part of this relationship. People with neurotic characteristics such as anxiety, anger, impulsivity, self-concern, and susceptibility have poor mental health and, as a result, experience higher worry as a result of epidemics and thoughts related to illness and death. It is proposed that in future research, training courses be held based on women's acquaintance with neuroticism's harmful psychological features, and interventions to reduce perceived stress and to reduce death anxiety in women. Based on the limitations, it is also advised that more extensive research be conducted on women and men simultaneously to determine the role of gender differences in perceived stress as a mediating variable in the reduction of neurotic behaviors.

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Conflicts of interest

There are no conflicts of interest.

References

1. Liu X, Kakade M, Fuller CJ, Fan B, Fang Y, Kong J, *et al.* Depression after exposure to stressful events: Lessons learned from the severe acute respiratory syndrome epidemic. *Compr Psychiatry* 2012;53:15-23.
2. World Health Organization. Mental health and psychological

- considerations during the COVID-19 outbreak. 18 March 2020. <https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf>.
3. Kazemzadeh Atoofi M, Rezaei N, Kompani F, Shirzad F, Djalalinia S. Requirements of Mental Health Services During the COVID-19 Outbreak: A Systematic Review. *IJPCP*. 2020; 26 (3):264-279. URL: <http://ijpcp.iuims.ac.ir/article-1-3238-en.html>
4. Mortensen CR, Becker DV, Ackerman JM, Neuberg SL, Kenrick DT. Infection breeds reticence: The effects of disease salience on self-perceptions of personality and behavioral avoidance tendencies. *Psychol Sci* 2010;21:440-7.
5. Stuart GW, Laraia MT. Principles and Practice of Psychiatric Nursing. 7th ed. St Louis: Mosby; 2001. p. 275.
6. Sherman DW, Norman R, McSherry CB. A comparison of death anxiety and quality of life of patients with advanced cancer or AIDS and their family caregivers. *J Assoc Nurses AIDS Care* 2010;21:99-112.
7. Martínez-López JÁ, Lázaro-Pérez C, Gómez-Galán J. Death anxiety in social workers as a consequence of the COVID-19 pandemic. *Behavioural sciences (Basel, Switzerland)* 2021;11:61. doi: 10.3390/bs11050061.
8. Suhail K, Akram S. Correlates of death anxiety in Pakistan. *Death Stud* 2002;26:39-50.
9. Daradkeh F, Moselhy HF. Death anxiety (Thanatophobia) among drug dependents in an Arabic psychiatric hospital. *Am J Drug Alcohol Abuse* 2011;37:184-8.
10. Costa PT, McCrae RR. Trait theories of personality. In Barone DF, Hersen M, Van Hasselt VB, editors. *Advanced Personality*. Plenum Press; 1998. p. 103-21. doi: 10.1007/978-1-4419-8580-4_5.
11. Lahey BB. Public health significance of neuroticism. *Am Psychol* 2009;64:241-56.
12. Barlow DH, Ellard KK, Sauer-Zavala S, Bullis JR, Carl JR. The origins of neuroticism. *Perspect Psychol Sci* 2014;9:481-96.
13. Chappelle W, Shadle AH, Martinez RN, Reardon LE, Goodman T, Spencer H, *et al.* Personality traits that distinguish special operations female aircrew. *Aerosp Med Hum Perform* 2021;92:240-7.
14. Shields GS, Toussaint LL, Slavich GM. Stress-related changes in personality: A longitudinal study of perceived stress and trait pessimism. *J Res Personal* 2016;64:61-8.
15. AZIZI ABARGHUEI, M., & FALSAFINEJAD, M., & FALSAFINEJAD, M., & DORTAJ, F. (2017). A Causal Relationship between Student Instructional Stress factors and Social Support with Academic Burnout Considering Mediating Role of Perceived Stress among University Students of Shahid Chamran University of Ahvaz. *EDUCATIONAL DEVELOPMENT OF JUNDISHAPUR*, 7(4), 334-345. <https://www.sid.ir/en/journal/ViewPaper.aspx?id=650975>.
16. Kakavand A, Damercheli N. The role of mediator of perceived stress in the relationship between personality traits and hypertension among the elderly. *J Aging Psychol* 2017;2:271-9.
17. Pradhan M, Chettri A, Maheshwari S. Fear of death in the shadow of COVID-19: The mediating role of perceived stress in the relationship between neuroticism and death anxiety. *Death Stud* 2020;46:1106-10.
18. Frazier PH, Foss-Goodman D. Death anxiety and personality: Are they truly related? *J Death Dying* 1989;19:265-74.
19. Templer DI. Death anxiety: Extraversion, neuroticism, and cigarette smoking. *OMEGA - J Death Dying* 1972;3:53-6.
20. Rajabi G, Bohrani M. Item factor analysis of the death anxiety scale. *J Psychol* 2002;5:331-44.
21. Templer DI. The construction and validation of a death anxiety scale. *J Gen Psychol* 1970;82:165-77.
22. Masoudzadeh A, Setareh J, Mohammadpour R, Modanloo Kordi M. A survey of death anxiety among personnel of a hospital in Sari. *J Mazandaran Univ Med Sci* 2008;18:84-90

23. John, O.P. and Srivastava, S. (1999) The Big Five Trait Taxonomy: History, Measurement, and Theoretical Perspectives. In: Pervin, L.A. and John, O.P. Eds., *Handbook of Personality: Theory and Research*, Vol. 2, Guilford Press, New York, 102-138. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/referencespapers.aspx?referenceid=1888299](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/referencespapers.aspx?referenceid=1888299).
24. Shanesazzadeh L, Nadi M. Structural model of the relationship between big five traits, emotional intelligence abilities with interpersonal forgiveness among nursing students. *Iran J Psychiatr Nurs (IJPN)* 2018;6:74-81.
25. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav* 1983;24:385-96.
26. Montoliu T, Pulopulos MM, Puig-Pérez S, Hidalgo V, Salvador A. Mediation of perceived stress and cortisol in the association between neuroticism and global cognition in older adults: A longitudinal study. *Stress and Health* 2022;38:290-303.
27. Korotkov D. Does personality moderate the relationship between stress and health behaviour? Expanding the nomological network of the five-factor model. *J Res Personal* 2008;42:1418-26.
28. van der Heiden C, Melchior K, Muris P, Bouwmeester S, Bos AE, van der Molen HT. A hierarchical model for the relationships between general and specific vulnerability factors and symptom levels of generalized anxiety disorder. *Journal of anxiety disorders* 2020;24:284-9.
29. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry* 2005;62:593-602.
30. Barnhofer T, Chittka T. Cognitive reactivity mediates the relationship between neuroticism and depression. *Behav Res Ther* 2010;48:275-81.
31. Bajcar B, Babiak J. Neuroticism and cyberchondria: The mediating role of intolerance of uncertainty and defensive pessimism. *Personal Individ Differ* 2020;162:110006. doi: 10.1016/j.paid.2020.110006.
32. Chung MC, Chung C, Easthope Y. Traumatic stress and death anxiety among community residents exposed to an aircraft crash. *Death Stud* 2000;24:689-704.
33. zarei S. The Mediating Role of Depression and Anxiety Symptoms in the Relationship between Perceived Stress and Problematic Mobile Phone Use among Nursing Students. *3JNE*. 2020;9(3):10-20. URL: <http://jne.ir/article-1-1144-en.html>
34. Selye H. Stress without distress. In: **Serban G, editor.** *Psychopathology of Human Adaptation*. Boston, MA: Springer; 1976. doi: 10.1007/978-1-4684-2238-2_9.
35. Lucas RE, Diener E. Understanding extraverts' enjoyment of social situations: The importance of pleasantness. *J Personal Soc Psychol* 2001;81:343-56.