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# The role of death anxiety as a mediator in the relationship between personality types and psychological well-being in coronavirus disease-2019 patients

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## Abstract:

**BACKGROUND:** Given the widespread presence of the coronavirus disease-2019 (COVID-19) virus, it is critical to explore the psychological consequences of this disease on people at all levels of society. The purpose of this study was to look into the role of death anxiety as a mediator in the relationship between personality types and psychological well-being in people with COVID-19 disease.

**MATERIALS AND METHODS:** In this study, the research method is correlational in terms of descriptive data collection method. The statistical population consisted of all people who had experienced COVID-19 in Kermanshah, Iran 2020–2021, 220 of whom were chosen by the available sample method. The Ryff Psychological Well-Being Questionnaire (PWBQ), the personality types of John and Srivastava's short five-factor list (BFI-SV), and the Collett-Lester Anxiety Death Scale were among the research instruments employed (CL-FODS). The suggested model was evaluated using the structural equation modeling strategy and the Amos software.

**RESULTS:** The findings demonstrated that extraversion, adaptation, and conscientious personality types have a positive and significant relationship with psychological well-being while neuroticism has a negative and significant relationship with psychological well-being, and openness to experience indirectly improves psychological well-being by reducing death anxiety.

**CONCLUSION:** Death anxiety appears to play a mediating role in the relationship between personality types and psychological well-being in people with COVID-19, according to the findings of this study. As a result, the proposed model fits well and can be used as an important step in identifying factors that affect people with COVID-19's psychological well-being.

## Keywords:

Coronavirus, death anxiety, personality types, psychological well-being

## Introduction

Coronaviruses are a large viral family that causes respiratory infections ranging from colds to severe respiratory diseases and, in extreme cases, death.<sup>[1,2]</sup> The disease was discovered in Wuhan, China, in December 2019 and has spread fast throughout the world in just 3 months.<sup>[3]</sup>

One of the psychological variables that is highly affected by COVID-19 is psychological

well-being. Psychological well-being is regarded as one of the most significant measures of the health of the community, and it refers to emotional recovery for the ability to enjoy life while experiencing pain, despair, and misery, as well as attaining a degree of belief in oneself and others' dignity.<sup>[4]</sup> Psychological well-being is defined by researchers as a good vibe and a sense of overall life satisfaction that includes six components: self-acceptance, personal growth, meaning in life, mastery of the

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environment, independence, and positive relationships with others, all of which lead to enhanced success in life. Better health, more supportive social interactions, and, as a result, improved mental and physical well-being.<sup>[5]</sup>

People can normally cope with life's difficulties while also benefiting society.<sup>[6]</sup> However, research on unforeseen occurrences such as epidemics and natural disasters has demonstrated that the psychological consequences of an accident can linger for years, and the various psychosocial concerns that most of these patients suffer can significantly affect their psychological well-being and quality of life.<sup>[7]</sup>

Fear and anxiety induced by the coronavirus pandemic have been linked to mental health issues. Furthermore, research has revealed that patients who have coronavirus have issues including sleeplessness, anxiety, and sadness.<sup>[8-10]</sup> Generally, the diagnosis of this disease is a very stressful event that, in the absence of definitive therapy, generates plenty of psychological problems in the patient and his family members.<sup>[6]</sup> Due to the increasing rate of COVID-19, the experience of high levels of fear and anxiety around the world is predictable. In this regard, the results of previous studies have shown that each of the variables of corona fear and behavioral inhibition system plays a decisive role in predicting death anxiety.<sup>[11]</sup>

Studies have shown that COVID-19 as a traumatic event reminds of the possibility of death and causes anxiety in individuals.<sup>[12]</sup> A person experiences various degrees of death anxiety throughout his life. This experience is naturally more common in people with incurable or difficult-to-treat diseases.<sup>[13]</sup>

As a result, research into factors that influence psychological well-being, such as personality types, is particularly important. Personality qualities are thought to be the most essential element determining people's adaptability and health.<sup>[14]</sup> Personality is the most essential issue in psychology since it focuses on topics such as learning, motivation, perception, thinking, emotions and feelings, intelligence, and so on. In other words, the factors listed above are regarded as personality components.<sup>[15]</sup>

Scientists have expressed varying views on the personality aspects of people and distinct divisions. Costa and McCrae's five-factor character model is one of these hypotheses.<sup>[16]</sup> Conscientiousness, neuroticism, extraversion, openness, and adaptability are the five dominant known personality traits.

Although the findings of previous research reveal a direct association between personality types and psychological

well-being, the current study looked into the impact of death anxiety as a mediator in this respect. Death anxiety is also defined by Craius, Pargament, and Ironson as follows: People typically suffer anxiety while attempting to predict a state that does not exist. Death anxiety increases in persons with COVID-19, but psychological well-being declines, according to studies (Siegel, Moore, & Lahaw, 2021). Several research have found a relationship between death anxiety and psychological well-being.<sup>[17-19]</sup>

In this regard, several studies have shown that psychological well-being has a significant effect on reducing COVID-19 death anxiety.<sup>[20,21]</sup> In addition, other studies have shown that COVID-19 anxiety has a negative effect on mental health.<sup>[22-24]</sup>

Many people throughout the world are infected with the SARS-CoV-2 and suffer from death anxiety, which has a negative impact on their psychological well-being. Because the fear of complications from COVID-19 and reinfection with the virus will always be with these people, it is necessary to investigate the factors related to their psychological well-being to enhance their psychological well-being. On the other hand, although people all over the world are working to fight the epidemic of COVID-19 in every aspect possible, it is critical to investigate their mental health state. The findings of this study can help all people of all ages, especially those who have experienced COVID-19, understand the vulnerabilities and protective factors of COVID-19. Based on the theoretical foundations and research findings mentioned, and taking into account the limitations of previous research in examining the structural relationships of these variables, the relationship between personality types and death anxiety with psychological well-being was studied in a structural model. As a result, the primary question of this study was whether the suggested model for predictors of psychological well-being in people with COVID-19 was worthy of the data?

## Materials and Methods

### Study design and setting

*The current study used a descriptive-correlational methodology*

Review the files of patients referred for COVID-19 by contacting patients and obtaining consent to attend after receiving a license from Kermanshah University of Medical Sciences and attending Farabi and Golestan hospitals, which are the treatment centers for COVID-19 in Kermanshah, Iran, and coordinating with the hospital staff. The virtual link to the questionnaires was provided to them during the research.

### Study participants and sampling

The statistical population consisted of people who had been exposed to COVID-19 in Kermanshah, Iran 2020–2021. The available sampling method was used in this study.

People with COVID-19 experience and those who do not take nerve and anxiety medications met the inclusion. Subjects who had a history of taking nerve and anxiety pills were excluded from participating in the study.

Finally, 220 people were included in the study after the distorted questionnaires were removed. Given that researchers in structural equations have a ratio of 15 subjects per observed variable and some others recommend a ratio of 10 to 20 subjects per observed variable<sup>[25]</sup> so the sample size is sufficient.

### Data collection tool and technique

#### *Psychological Welfare Questionnaire*

Ryff<sup>[5]</sup> developed the Psychological Welfare Questionnaire, which was updated in 2002. This survey has 18 items that are graded on a six-point Likert scale ranging from strongly agree: 6 to strongly disagree: 1.

It also evaluates six factors, namely, independence, environmental mastery, personal growth, healthy interpersonal connections, life purpose, and self-acceptance. The sum of the scores of these six factors constitutes the overall score of mental well-being. The upper and lower limits of the questionnaire are 18 to 108. The cut point is 63. Using Cronbach's alpha of 0.91, Ryff and Singer<sup>[26]</sup> calculated the questionnaire's internal consistency coefficient. Khanjani *et al.*<sup>[27]</sup> in a study aimed at investigating the factor structure and psychometric properties of the short form of the Ryff Psychological Well-Being Scale in students, found that the internal consistency of the factors of this scale using Cronbach's alpha ranged from 0.51 to 0.76 and used factor analysis to evaluate the factor structure of the questionnaire. The findings revealed that the structure of the six-factor psychological well-being of the Ryff fits well with the data. The Cronbach's alpha coefficient of 0.87 was used in this study to determine the reliability of the questionnaire.

### The short version of the Big Five Factors Index (BFI-SV)

This version, developed by John and Srivastava,<sup>[28]</sup> uses short phrases to assess the main qualities of the five major personality variables. The survey consists of 10 short items on a five-point scale containing opposite: 1; somewhat opposite: 2; neither agree nor disagree: 3; somewhat agree 4; strongly agree: 5 is graded. Extraversion, adaptability, conscientiousness, neuroticism, and openness to experience are the

subscales of this test, each with two items. The findings of Rammstedt and John's study,<sup>[29]</sup> which aimed to evaluate personality characteristics in under a minute using short versions (10 items) in English and German, revealed that the short version has substantial psychometric qualities. According to Rammstedt and John,<sup>[29]</sup> while the number of questions was reduced, the convergent and divergent validity of the short version in the German and English samples was considerable. The reliability of the questionnaire in this study for the subscales of this test, including extraversion, adaptability, conscientiousness, neuroticism, and openness to experience, was 0.83; 0.85, 0.81, 0.84, and 0.79, respectively.

### Death Anxiety Questionnaire

The Collett-Lester Fear of Death Scale (CL-FODS) is a 32-item self-assessment questionnaire used to assess fear anxiety and fear. This questionnaire has four subscales: self-death, seeing your death, death of relatives, and seeing the death of relatives. The terms of this questionnaire are graded on a five-point scale from completely false: 1 to completely true: 5. This test has a maximum score of 160 and a minimum score of 32. The closer a person's score is to 160, the greater her death anxiety. Collett-Lester<sup>[30]</sup> stated that the reliability of the Revised Anxiety Scale retest questionnaire for the self-death subscale was 0.85, seeing self-death was 0.79, death of relatives was 0.86, and seeing the death of relatives was 0.83. The reliability coefficient of this questionnaire was achieved by Ismaili and Naderi<sup>[31]</sup> in Iran using Cronbach's alpha and two halves of 0.89 and 0.68, respectively, and the simultaneous validity of this scale with the death anxiety of Templer<sup>[32]</sup> was equal to 0.57. This value indicates the questionnaire's acceptable validity. Cronbach's alpha coefficient of 0.84 was used to determine the questionnaire's reliability in this study.

### Statistical analysis

The data were analyzed using descriptive statistics (mean and standard deviation), the Pearson correlation test, and structural equations using Statistical Package for the Social Sciences (SPSS)-27 and Analysis of Moment Structures-24 (AMOS-24) software. The questionnaires were completed anonymously and with coding to follow ethical concerns in conducting the study, the confidentiality of the answers of the subjects was observed, and the participants were engaged in the study with full information. The following tools were used to collect data.

### Ethical considerations

#### *Adherence to the principles of research ethics*

To comply with ethical principles, before conducting the research, all participants were informed about the objectives of the research and completed the tools with satisfaction. Also, the questionnaires were completed

anonymously and coded, and the study participants were assured that all their information would remain confidential. The experiments used in this study were approved by the Ethics Committee of Islamic Azad University (IR.KUMS.REC.1400.702).

## Results

A total of 220 people, with an average age of  $31.42 \pm 6.11$  took part in the research. Table 1 shows descriptive statistics for research variables such as mean and standard deviation. The Kolmogorov–Smirnov test was used to investigate the distribution of personality type variables with psychological well-being and the mediating role of death anxiety.

The *P* value for all analyzed variables is more than 0.05, according to the Kolmogorov–Smirnov test results. As a result, the test result for any of the variables is not significant, and the distribution of all variables is normal, enabling parametric tests to be employed to evaluate the research hypotheses. To evaluate the proposed model of this research, the structural equation modeling method using SPSS-27 and AMOS-24 software has been used. An initial proposed model for explaining psychological well-being based on personality types and death anxiety is obtained, which is shown in Figure 1.

The root index of calculating the variance of the approximation error (RMSEA = 0.308) suggests that the initial model has to be updated, according to the data in Table 2. Because the original model was saturated, which means that all possible paths were plotted, Chi-square and other indicators could not be calculated. However, after deleting one of the paths (openness to experience to psychological well-being), the model became saturated, and Chi-square and other indices could be calculated. Figure 2 depicts the final model. The root

index in the final model was the estimated variance of the approximation error (RMSEA = 0.0001), indicating that the model was well-fit. The modified model can be found below.

The following are the findings related to the estimation of path coefficients for the study of direct paths in Table 3.

The findings of Table 3 showed that all paths except the path of openness to experience psychological well-being were statistically significant at the level of  $P < 0.05$ . Next, in Table 4, the bootstrap method is used to determine the significance of indirect relationships.

The confidence levels of Table 4 indicate the significance of the indirect paths of personality types to psychological well-being with the mediating role of death anxiety at the level of  $P < 0.05$ .

## Discussion

All direct paths, except the path of conscientiousness, became significant to psychological well-being, according to the findings. Death anxiety and psychological well-being became significant indirect pathways. The proposed model has an acceptable fit based on the findings of this study, and this can be an important step in identifying the factors affecting the psychological well-being of people with COVID-19. The first finding of the study showed that there is a significant relationship between extraversion, adaptation, conscientiousness, neuroticism, and psychological well-being. This finding is in line with the findings of Khalatbari *et al.*<sup>[33]</sup> and Taqvaei and Mirzaei’s research.<sup>[14]</sup> However, there is no significant relationship between experience type, openness to experience, and psychological well-being. This finding is inconsistent with the results of the research of Khalatbari *et al.*<sup>[33]</sup> and Taghvainia and Mirzaei.<sup>[14]</sup>

Extraversion was found to be positively and significantly related to psychological well-being. Explaining this finding, it can be said that extroverts have more motivation to work and more confidence in their abilities due to having characteristics such as being active and energetic, tending to communicate with others, and enjoying talking to others. As a result of these characteristics, the person achieves greater success in life and receives more emotional and social support from others, as well as strengthening positive emotions and a positive mood. It is obvious that the presence of such characteristics, as well as low levels of anxiety, stress, and low self-esteem, is associated with obtaining a higher welfare score.<sup>[33]</sup>

Neuroticism is also associated with psychological well-being in a negative and significant way, according

**Table 1: Mean and standard deviation in research variables**

Statistical indicators/Variables	Mean	Standard deviation
Psychological well-being	78.09	12.04
Extraversion	5.90	1.43
Compatibility	6.04	1.41
Conscientiousness	5.82	1.61
Psychiatry	5.94	1.37
Openness to experience	5.88	1.92
Death anxiety	103.50	29.35

**Table 2: Fitness indices of the initial and final model**

Fit	$\chi^2$	df	$\chi^2/df$	IFI	RFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-	-	1.00	1.00	-	-	308.0
Final model	211.00	1	211.00	00.1	99.00	1.03	00.1	00.1	0001.0

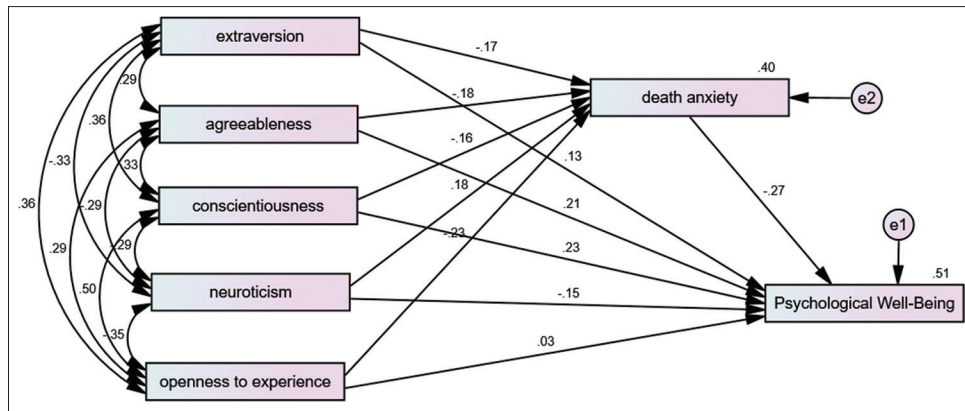


Figure 1: The initial model in standard mode

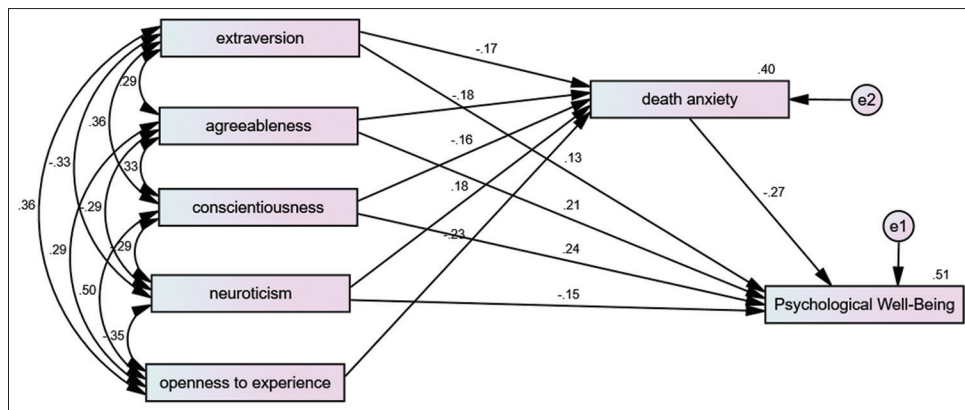


Figure 2: The final model in standard mode

**Table 3: Path coefficients of direct effects between research variables in the initial and final model of the standard Paths**

Paths	The initial model		The final model	
	Standard path coefficients ( $\beta$ )	Significance	Standard path coefficients ( $\beta$ )	Significance
Extraversion: psychological well-being	.131.0	.017.0	.133.0	.015.0
Extraversion: death anxiety	-.169	0.005	-.169	0.005
Adaptation: psychological well-being	.207.0	.0001.0	.208.0	.0001.0
Compatibility: death anxiety	-.177	0.002	-.177	0.002
Conscientiousness: psychological well-being	.229.0	.0001.0	.237.0	.0001.0
Conscientiousness: death anxiety	-.158	0.012	-.158	0.012
Neurosis: psychological well-being	-.146	.007.0	-.149	.006.0
Neurosis: death anxiety	.180	0.002	.180	0.002
Openness to experience: psychological well-being	.027	.646.0	-	-
Openness to experience: death anxiety	-.233	0.0001	-.233	0.0001
Death anxiety: psychological well-being	-.267	.0001.0	-.273	.0001.0

**Table 4: Results of the Bootstrap method in the study of indirect paths in the initial and final model**

Predictive variables	Mediator	Criterion variable	The initial model		The final model	
			Bootstrap	Significance	Significant bootstrap	
Extraversion	Death anxiety	Psychological well-being	0.378	0.017	0.388	0.017
Compatibility	Death anxiety	Psychological well-being	0.403	0.034	0.413	0.034
Conscientiousness	Death anxiety	Psychological well-being	0.315	0.041	0.323	0.041
Psychiatry	Death anxiety	Psychological well-being	-0.420	0.010	-0.430	0.010
Openness to experience	Death anxiety	Psychological well-being	0.388	0.012	0.398	0.011

to the findings. Neurosis activates negative emotions and prevents positive emotions, which are important

for psychological well-being, from replacing negative emotions because it is linked to anxiety, depression,

and other psychological and physical dysfunctions and consequently will reduce the psychological well-being of the individual.<sup>[14]</sup>

Furthermore, the findings revealed that adaptation was associated with psychological well-being in a positive and significant way. In explaining this finding, it can be said that adaptation is related to one's desire for forgiveness, kindness, generosity, empathy, and altruistic thinking. Friendly, warm, and social behavior are all part of the adaptation process. Because the person has more social support and can hold more people by his side, such behavior helps to alleviate depression. As a result of these relationships, adapted people generate more social support and happiness, which improves their well-being.<sup>[34]</sup>

The findings revealed that conscientiousness is related to psychological well-being in a positive and significant way. Explaining this finding, it can be said that conscientious people usually move toward positive social aspects and feel more responsible for their behavioral and communication health. As a result, they are less likely to associate with high-risk groups. On the other hand, they deal with life in a planned way. As a result, social success and psychological well-being improve.<sup>[35]</sup>

Another personality trait that was mentioned was openness to new experiences, which had no bearing on psychological well-being. The relationship between openness to experience and psychological well-being was examined by the Pearson test and regression in the studies mentioned, and it was found to be significant. However, in the model, due to mediating role of the death anxiety, all of the effects of this variable are explained by death anxiety, leaving no room for openness to experience. In general, openness to experience may be defined as an individual's passion for inquiry, love of art, artistry, adaptability, and logic. When a person is open to new experiences, he or she treats life's difficulties and obstacles as issues, and sometimes even tends to deal with them. This results in a favorable evaluation of life events.<sup>[36]</sup> Another research demonstrated a direct and negative relationship between death anxiety and psychological well-being in patients with COVID-19, implying that lowering death anxiety in these people can be predicted to enhance their psychological well-being. This conclusion is based on the findings of the study by Bakhshi *et al.*<sup>[18]</sup> Varaee *et al.*,<sup>[19]</sup> and Aghababaei *et al.*<sup>[17]</sup> According to the idea of fear management, death awareness creates high anxiety, inhibits adaptive psychological function, leads to psychological difficulties, and has a negative impact on well-being, since death anxiety conflicts with the evolutionary drive, which is for survival.<sup>[18]</sup> According to this view, even if people are

aware of mortality, they may live in relative peace and therefore attain better well-being.<sup>[37]</sup> According to this hypothesis, humans do not always suffer death anxiety because they employ various psychological strategies to lessen death anxiety. As a result, people believe that their existence has a broad purpose, is stable, and meaningful, and in this way, they reduce their death anxiety, which in turn increases their well-being; however, awareness of death in people who do not have the appropriate psychological shock increases their death anxiety, which in turn decreases their well-being; As a result, psychological shock absorbers can be said to counteract this impact.<sup>[38]</sup>

Furthermore, the findings revealed that death anxiety acts as a moderator in the association between personality types and psychological well-being. Searching for the background, no research consistent with this finding was made available to the researcher. There was a significant relationship between extraversion, adaptability, conscientiousness, neuroticism, and psychological well-being indirect routes, but there was no significant relationship between openness to experience and psychological well-being. The indirect hypothesis, on the other hand, found that openness to experience is associated with psychological well-being if it first decreases their death dread and hence enhances their psychological well-being. This study demonstrated that death anxiety was capable of appropriately demonstrating the mediating function in the interactions between variables.

### Limitations and suggestions

Using self-report tools may have influenced the accuracy of their reports due to subject bias. Because the statistical population is limited to people with COVID-19 in Kermanshah, extrapolating the findings to other cities is cautious. To solve this problem, researchers should conduct similar studies in other communities and compare the results. Access to participants is restricted due to the country's coronary conditions. The existence of distorted questionnaires and the time spent processing them is another limitation of the current research.

### Conclusion

Death anxiety appears to play a mediating role in the relationship between personality types and psychological well-being, according to the findings. There was a significant relationship between extroverted personality types, adaptation, conscientiousness, neuroticism, and psychological well-being in direct paths, but no such relationship existed in indirect paths. The indirect hypothesis, on the other hand, revealed that openness to experience is linked to psychological well-being if it first reduces death anxiety and thus improves psychological

well-being. This result demonstrated that death anxiety correctly demonstrated the mediating role in the relationships between variables.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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