

## The Impact of COVID-19 Fear on Mental Wellbeing: Social Connectedness and Optimism as Multiple Mediators

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The purpose of this research is to investigate the mediating effects of social connectedness and optimism in the relationship between fear of COVID-19 and mental wellbeing. The sample consisted of 826 individuals (57.7% females,  $M_{age} = 23.97$ ,  $SD = 7.65$ ). The participants completed four scales measuring mental wellbeing, fear of COVID-19, social connectedness, and optimism. The correlation analysis results showed that mental wellbeing, social connectedness, and optimism were negatively related to fear of COVID-19. Additionally, structural equation modeling revealed that social connectedness and optimism mediated the relationship between fear of COVID-19 and mental wellbeing. Findings expanded our understanding of the association among COVID-19 fear, social connectedness, optimism, and mental wellbeing during the pandemic.

*Key words:* mental wellbeing, COVID-19 fear, social connectedness, optimism

### Introduction

The coronavirus disease (COVID-19) emerged in the last months of 2019 in the city of Wuhan, Hubei province of China, and was declared a pandemic by the World Health Organization (WHO) as it spread all over the world in a fleeting time (WHO, 2020). COVID-19, which has been present in our lives for more than two

years and defined as both an infectious and a fatal disease (Lipsitch et al., 2020), changed the usual living conditions (Owusu-Fordjour et al., 2020; Viner et al., 2020). As elsewhere in the world, strict measures had to be taken in Turkey (where the present study was carried out) to prevent the spread of the disease after the first case was reported. In particular, the sudden and unprecedented precautions such as self-quarantine and restricting routine

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activities adversely affected the psychological health of individuals (Ahorsu et al., 2020; Ornell et al., 2020). Accordingly, the psychological effects of COVID-19 on individuals' mental health were reported in many studies in the existing literature (Jue & Ha, 2022; Kayış et al., 2021; Sfeir et al., 2021). In these studies, it was mentioned that COVID-19 had detrimental effects on individuals' mental health. Apart from these studies, Shah et al. (2021) reported similar findings and concluded that mental wellbeing levels of individuals decreased with COVID-19.

Mental wellbeing, which is described in the literature as the handling of psychological and subjective wellbeing levels in an integrative framework (Keyes, 2002), is a state of wellbeing that enables individuals to realize their abilities and cope with stressful events in life, and it contributes to the society in which individuals are living (WHO, 2004). Individuals' mental wellbeing levels can fluctuate with uncertainties in life and if they experience something unusual. With the outbreak of COVID-19, individuals had to change their routines and obscurity as well as fear of death started to dominate people's lives. Satici et al. (2020) reported that the extraordinary situation experienced in this process adversely affected mental wellbeing. Another similar finding was revealed by Deniz (2021), who stated that fear of COVID-19 was negatively related to mental wellbeing. In addition, in the study conducted by Lathabhavan and Vispute (2021), it was determined that individuals with high fear of COVID-19 experienced a decrease in the level of their mental wellbeing. All these studies prove that mental wellbeing is influenced to a great extent by the fear of COVID-19. Therefore, mental health care personnel have great responsibilities to improve the psychological health of individuals and to help them cope with the fear of COVID-19. Moreover, it is crucial that this personnel can

give meaningful support to individuals with fear of COVID-19 so that these individuals can overcome this fear.

Nabi and Myrick (2019) describe fear as an emotion that enables individuals to take precautions in dangerous situations. This feeling, which ensures the survival of individuals (Butter, 2012), can cause problems if experienced excessively (Lum & Tambyah, 2020). Being described as one of the psychological consequences of COVID-19 (Pakpour & Griffiths, 2020), fear includes depression, anxiety, and stress (Lathabhavan & Vispute, 2021; Satici et al., 2021). It has been reported that fear makes individuals unhappy (Satici, Kayış, et al., 2020) and negatively affects mental wellbeing (Paredes et al., 2021; Reznik et al., 2020).

Mental wellbeing may be influenced by other variables apart from the fear of COVID-19. Individuals become lonelier if they are isolated with fear of COVID-19, if they have to stay at home unless absolutely necessary to leave, and avoid face-to-face relationships as much as possible (Armitage & Nellums, 2020; Christ & Gray, 2022; Kivelä et al., 2022). Therefore, the social connectedness of these people gradually decreases (Dogerlioglu-Demir et al., 2021; Lábadi et al., 2022). Social connectedness is described as an individual's sense of belonging to the social world and establishing relationships with other people (Lee & Robbins, 1998; O'Rourke et al., 2018). In the literature, social connectedness has been investigated in relation to many psychological factors (Brown et al., 2012; Griffiths et al., 2007; Malaquias et al., 2015; Satici et al., 2016). Social connectedness is explained as one of the key concepts of wellbeing in the literature as well (Csikszentmihalyi, 1990). A number of studies conducted during the COVID-19 period showed that individuals with reduced social connectedness experienced decrease in their mental wellbeing (Johnson,

2022; Yelpaze et al., 2021). Apart from these studies, the longitudinal study of Jose et al. (2012) concluded that high social connectedness positively affected the mental wellbeing of individuals. In other studies conducted during the pandemic period, it has also been determined that individuals are disconnected from their environment and the level of their wellbeing diminishes as their social connectedness decreases (Kim & Zhu, 2022; Michaels et al., 2021). Consequently, in the light of the existing research, it can be argued that social connectedness has a mediating effect on the relationship between fear of COVID-19 and mental wellbeing.

Studies conducted during the pandemic period have also revealed that social connectedness plays a mediating role along with optimism (Olasupo et al., 2021; Yıldırım et al., 2021). Optimism, which is considered as a strong predictor of mental wellbeing, is tested as the second mediating variable in the present study. Optimism is described as having positive thoughts (Dember, 2001) and positive expectations for the future (Scheier & Carver, 1985). The concept of optimism has been studied extensively with the prediction that positive thoughts and expectations of individuals decrease during the pandemic (Genç & Arslan, 2021; Lai et al., 2022; Reizer et al., 2022). One such study was carried out with individuals who were afraid of COVID-19 (Bakioğlu et al., 2021). In that study, it was determined that fear of COVID-19 predicted optimism negatively. A similar finding was reported by Nazari et al. (2021), who concluded that fear of COVID-19 reduced the optimism levels of individuals. In a similar way, recent research into optimism has shown statistically significant relationship between optimism and wellbeing (Hao et al., 2016; Kardas et al., 2019; Reizer et al., 2022). For instance, it has been reported that optimism positively predicts wellbeing (Genç & Arslan, 2021). Based

on these findings, optimism may be argued to have a mediating role on the relationship between fear of COVID-19 and mental wellbeing.

Considering the fact that precautions taken by authorities with the declaration of COVID-19 as a pandemic by WHO affected people's lives negatively; it can be hereby argued that there exists a significant relationship between fear of COVID-19 and mental wellbeing. Based on the existing literature, it can also be concluded that social connectedness and optimism may serve as mitigating factors in this relationship. In this context, the present study will make a great contribution to the research into mental wellbeing and COVID-19 fear by revealing some of the psychological effects of the pandemic. Although prior research investigated the relationship between these two variables, no research has so far reported on fear of COVID-19, mental wellbeing, social connectedness, and optimism together. Therefore, the main purpose of the present study is to investigate the mediating role of optimism and social connectedness in the relationship between fear of COVID-19 and mental wellbeing.

## Method

### Participants and Procedure

A sample of Turkish adults ( $N = 826$ ) completed an online survey from October–December 2021. In this study, the convenience sampling method was used as the sampling method. The sample consisted of 57.7% females ( $n = 477$ ) and 42.3% males ( $n = 349$ ). On average they were 23.97 years of age ( $SD = 7.65$ , ranged 18 to 65 years). The participants' education was distributed as follows: less than a high school degree ( $n = 55$ , 6.7%), a high school degree ( $n = 135$ , 16.3%), associate degree ( $n = 108$ , 13.1%), college degree ( $n = 523$ ,

63.3%), and graduate degree ( $n = 5$ , 0.6%). The majority of participants had a middle socio-economic status ( $n = 695$ , 84.1%).

### Ethics

The Artvin Coruh University Scientific Research and Ethical Review Board (E.6408) provided approval for the study. Informed consent was provided by all the participants, and the questionnaires were subsequently completed individually. All participants were informed they could withdraw at any time.

### Measures

*Fear of COVID-19 Scale* was developed by Ahorsu et al. (2020) to measure adults' fear of COVID-19. The scale, which consists of seven items, does not include any reverse item. Some of the items include "I feel tired", "I feel pessimistic", and "I avoid social situations." The scale was adapted into Turkish by Satıcı et al. (2021). This adapted scale has the same number of items as the original scale. The lowest 7 and the highest 35 points can be obtained from the 5-point scale (1 = Strongly disagree; 5 = Strongly agree). A high score indicates that the individual experiences more fear of COVID-19. The reliability coefficient of the scale adapted to Turkish was .82 (Satici et al., 2021).

*Warwick-Edinburgh Mental Wellbeing Scale* is a 14-item measurement tool developed by Tennant et al. (2007). It was adapted to Turkish as a short form consisting of seven items by Demirtaş and Baytemir (2019). Some of the items include "I'm optimistic about the future" and "I feel comfortable." All positive items were rated on a 5-point scale (1 = Never; 5 = Always), with high scores indicating high mental wellbeing. The Cronbach alpha internal consistency value of the scale was reported as .86 (Demirtaş & Baytemir, 2019).

*Social Connectedness Scale* developed by Lee and Robbins (1995), measures the social connectedness levels of individuals. The 8-item scale is scored on a 6-point scale (1 = Strongly disagree; 6 = Strongly agree). One of the items include "I feel very distant from people." This item demonstrates that the scale has reverse items. The scale was adapted into Turkish by Duru (2007). This adapted scale has the same number of items as the original scale. A score between 8 and 48 is taken from the scale. The high scores of the participants mean that their social connectedness levels are high. In the statistical analysis, the reliability was stated as .90 in the Turkish adaptation study of the scale (Duru, 2007).

*Life Orientation Test* was developed by Scheier et al. (1994), and it was adapted to Turkish by Aydın and Tezer (1991). Türküm (2001) revised the scale. There are a total of eight items in the form, including four fillers. One of the items includes "In situations where I can't predict what will happen, I always expect the best result." The form obtained as a result of the revision process was used in this study to determine the optimism levels of the participants. A total score can be obtained from the 5-point Likert-type scale. Higher scores indicate that individuals are more optimistic. The reliability coefficient of the scale adapted to Turkish was .74 (Türküm, 2001).

### Data Analysis

Data were analyzed with IBM SPSS Statistics 22 and AMOS Graphics. Preliminary analyses were conducted, first to investigate the descriptive statistics of each variable, the correlations among study variables, and the reliability coefficients of the study variables. Next, we employed structural equation modeling (SEM) to evaluate the multiple mediation model. We tested whether social connectedness and optimism (multiple me-

diators) mediated the relation between fear of COVID-19 (independent variable) and mental wellbeing (dependent variable). To evaluate overall model fit in each of our models, we used a model fit criteria suggested by researchers (Hu & Bentler, 1999; MacCallum et al., 1996), including the Comparative Fit Index (CFI), Goodness of Fit (GFI), Normed Fit Index (NFI), and Tucker-Lewis Index (TLI) > .90 and Standardized Root Mean Square Residual (SRMR) < .08.

## Results

### Preliminary Analyses

Descriptive statistics and reliabilities of the variables are reported in Table 1. Correlations between mental wellbeing, COVID-19 fear, social connectedness, and optimism are presented in Table 2. Mental wellbeing was negatively correlated with the fear of COVID-19 ( $r = -.301, p < .001$ ), and it positively correlated both with social connectedness ( $r = .466, p < .001$ ) and optimism ( $r = .499, p < .001$ ). On the other hand, the fear of COVID-19 was

negatively correlated with social connectedness ( $r = -.281, p < .001$ ) and optimism ( $r = -.249, p < .001$ ).

### Structural Equation Modelling

*Measurement model.* The measurement model was composed of four latent constructs (mental wellbeing, fear of COVID-19, social connectedness, and optimism) and eight observed variables. The indices of the measurement model presented good model fits:  $\chi^2 (14, N = 826) = 59.37, p < .001$ , CFI = .985, GFI = .982, NFI = .981, TLI = .971, SRMR = .029. The results indicated that factor loadings were ranged .60 to .96, and all factor loadings were statistically significant. Therefore, these findings proved that the observed variables were strong representatives of the latent constructs.

*Structural model.* Since the measurement model supported the adequacy of the latent factor structure, the SEM was used to examine the mediating effect of social connectedness and optimism on the relationship between fear of COVID-19 and mental wellbeing. First-

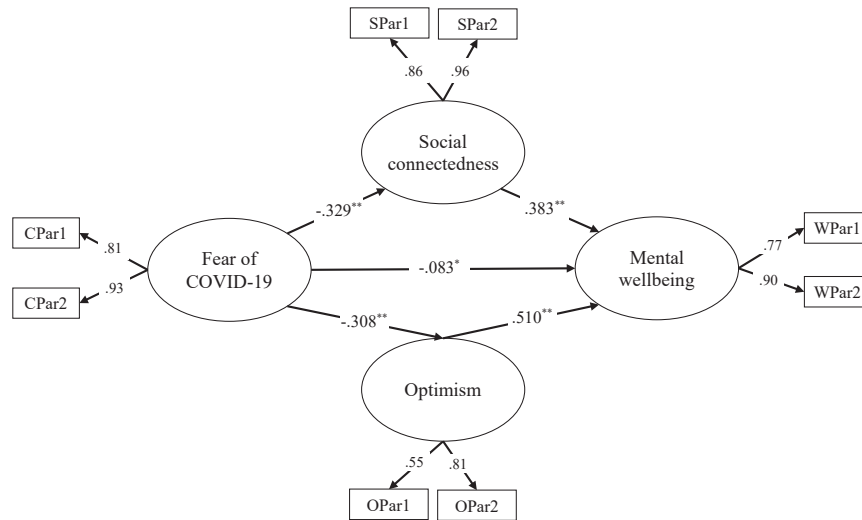
Table 1 Descriptive statistics for the study variables

Construct	Mean	SD	Confidence interval	Variance	Skewness	Kurtosis	$\alpha$	$\omega$
Mental wellbeing	24.97	5.46	24.61-25.36	29.85	.161	-.360	.836	.840
Fear of COVID-19	18.30	6.25	17.87-18.74	39.09	.214	-.462	.888	.889
Social connectedness	33.44	8.89	32.83-34.06	79.39	-.310	-.138	.908	.909
Optimism	15.63	3.53	15.40-15.88	12.51	-.106	.169	.705	.707

Table 2 Correlations for the study variables

Construct	1	2	3	4
1. Mental wellbeing	–			
2. Fear of COVID-19	-.301**	–		
3. Social connectedness	.466**	-.281**	–	
4. Optimism	.499**	-.249**	.343**	–

Note. \*\*  $p < .001$



Note.  $N = 826$ ; \*  $p < .05$ , \*\*  $p < .001$ ; *CPar* parcels of COVID-19 fear; *SPar* parcels of social connectedness; *OPar* parcels of optimism; *WA* parcels of mental wellbeing.

Figure 1 Standardized factor loading for the partially-mediated structural model.

ly, a partially-mediated model (Model 1) with two mediators and a direct path from fear of COVID-19 to mental wellbeing was found to be the indicator of an acceptable fit for the data:  $\chi^2(15, N = 826) = 121.02, p < .001$ , CFI = .966, GFI = .966, NFI = .961, TLI = .936, SRMR = .082, RMSEA = .093 90%CI = .078, -.108, AIC = 163.02, ECVI = .198. Then, it was found that a fully mediated model (Model 2), which was tested subsequently with the path from fear of COVID-19 to mental wellbeing, constrained to zero. The results revealed an acceptable fit to the data:  $\chi^2(16, N = 826) = 125.36, p < .001$ , CFI = .965, GFI = .965, NFI = .960, TLI = .938, SRMR = .080, RMSEA = .090 90%CI = .077, -.106, AIC = 165.36, ECVI = .200. Both Model 1 and Model 2 showed acceptable fit indices and significant factor loadings. When Model 1 and Model 2 were compared, a significant chi-square difference was found ( $\Delta\chi^2 = 4.34, df = 1, p < .05$ ), as well as a smaller AIC and

ECVI, which revealed that this additional path significantly contributed to the model. As a result, the overall findings indicated a partially mediating model. The standardized path coefficients of Model 1 are shown in Figure 1.

## Discussion

Due to COVID-19, which has become a global problem, it is reported in studies that the level of mental wellbeing of individuals decreased during the pandemic (Rettie & Daniels, 2021; Shah et al., 2021). Therefore, it is argued that investigating the variables that affect individuals' mental wellbeing is crucial. The aim of the present study was to investigate the mediating role of social connectedness and optimism in the relationship between fear of COVID-19 and mental wellbeing. The results of the study showed that social connectedness and optimism had a partial medi-

ating role in the relationship between fear of COVID-19 and mental wellbeing.

First, the mediating role of social connectedness in the relationship between fear of COVID-19 and mental wellbeing was analyzed. The findings showed that social connectedness mediates the relationship between fear of COVID-19 and mental wellbeing. During the pandemic, individuals who experienced an elevated level of fear of COVID-19 took more precautions to maintain their physical health. Individuals who isolated themselves from the society due to precautions against the pandemic became lonelier. This loneliness negatively affects interpersonal relationships, causing individuals to have a more introverted mood, deteriorating their psychological health. In this context, the findings of this study overlap with the results of previous studies (e.g., Dogerlioglu-Demir et al., 2021; Kivelä et al., 2022). In the study conducted by Christ and Gray (2022), it is stated that the social connectedness of individuals decreases as a result of the fear they experience. The study by Lábadi et al. (2022) also corroborates the findings of Christ and Gray's (2022) study. Lábadi et al. (2022) reports that fear of COVID-19 predicts social connectedness.

Decreased level of social connectedness negatively affects the mental health of individuals. Low social connectedness during the pandemic reduces mental wellbeing by reducing individuals' quality of life. The findings in the present study are further supported by other studies in the literature, which report that social connectedness is one of the variables that predict mental wellbeing (e.g., Jose et al., 2012; Michaels et al., 2021; Yelpaze et al., 2021). In a recent study conducted by Johnson (2022), it was revealed that weak social relations have an effect on the decrease in the mental wellbeing of individuals. Individuals whose interpersonal relationships weakened during the pandemic period and

who were more disconnected from their environment had low social connectedness, and their wellbeing levels decreased. Likewise, the study of Kim and Zhu (2022) states that social connectedness predicts mental wellbeing. Within the framework of all the studies, it could be concluded that reducing the fear of COVID-19 and strengthening social relations of individuals can play a significant role in improving mental wellbeing.

Another finding of the present study is that optimism has a mediating role in the relationship between fear of COVID-19 and mental wellbeing. In particular, negative psychological reflections of COVID-19 caused a decrease in positive thoughts and expectations of individuals. Besides, individuals, who experienced the fear of testing positive for COVID-19 and the fear of losing their own life or the life of their loved ones, experienced a decrease in their optimism levels. Prior research has reported similar findings as well, signaling the significant influence of the fear of COVID-19 on optimism (e.g., Bakioğlu et al., 2021; Nazari et al., 2021). The findings obtained in the research of Arslan et al. (2021), for instance, are in line with the results of the present study. The authors state that fear of COVID-19 reduces optimism. Another study conducted during the pandemic reported that there exists a statistically significant relationship between fear of COVID-19 and optimism (Vos et al., 2021). In a similar vein, it has been reported that mental wellbeing is influenced by optimism (e.g., Genç & Arslan, 2021; Reizer et al., 2022). Moreover, a recent study carried out in Iran (Valibeigi et al., 2022) shows findings that are consistent with the findings of the present study. The study of Valibeigi et al. (2022) concludes that there is a positive and significant relationship between optimism and wellbeing. Finally, in the study conducted by de Vries et al. (2022), optimism has been found to be a statistically significant

predictor of wellbeing. Based on all these research findings, if the fear of COVID-19 is coped with, the optimism level of individuals and indirectly their mental wellbeing can be positively influenced.

In the present study, the partial mediating role of social connectedness and optimism in the relationship between fear of COVID-19 and mental wellbeing has been confirmed via the model tested. In this model, it was determined that fear of COVID-19 directly and significantly affects mental wellbeing. An elevated level of fear of COVID-19 reduces mental wellbeing in individuals. This finding is parallel to the findings of prior research in the literature (e.g., Gavin et al., 2020; Lathabhan & Vispute, 2021; Sfeir et al., 2022). In a study conducted during the pandemic, it was reported that fear of COVID-19 is among the determinants of mental wellbeing (Choi et al., 2021). In the study of Dymecka et al. (2022), it has been revealed that fear of COVID-19 has a negative effect on the wellbeing of individuals. Based on the findings of the present research study and other studies found in the literature, the ability to cope with the fear of COVID-19 can be acquired with the help of mental health professionals in order to increase the mental wellbeing of individuals during a pandemic.

#### **Limitations and Future Research**

Some limitations should be considered when interpreting the findings of the present study. First, the research data were obtained using self-report scale tools. Although the data were collected from individuals who volunteered, the participants may have given biased answers due to the social desirability mistake. Therefore, in future research, data may be collected using a method different from self-report methods. One of these different methods is collecting data from partici-

pants using Marlowe-Crowne Social Desirability Scale (MCSDS). Otherwise, the scales used in the research are limited to the features they measure. The second limitation is that it is difficult to detect causal links between variables due to the cross-sectional nature of the research design. Longitudinal or experimental studies can be done in future research in order to express the cause-effect relationship clearly. The third limitation is the use of convenience sampling method in the study. Collecting data from the participants during the pandemic is the fourth limitation of the study. The answers of the participants who are afraid of COVID-19 or who do not have a prominent level of mental wellbeing can be considered as a limitation. After the pandemic is over, the model can be retested, taking into account the variables examined in this study. Finally, the sample group in this study consisted of non-clinical individuals. It is important to apply these research findings with caution in the clinical population.

#### **Implications**

This research revealed that fear of COVID-19 negatively affects the mental wellbeing of individuals, and that social connectedness and optimism are important mediator variables in this relationship. A complex model was tested in this research, which was carried out specifically during the pandemic period, which strained the psychological health of individuals. This tested model shows which variables can be studied to increase the mental wellbeing of individuals. Mental health professionals can benefit from the findings of this research in order to gain knowledge about the prevention of the fear of COVID-19 in the society and to protect the psychological health of individuals. Supporting individuals with positive and functional thoughts during psychological counseling sessions carried out by men-



tal health professionals can increase mental wellbeing. In addition, the development and implementation of intervention programs, designed to increase social connectedness and optimism levels of individuals and thus strengthen their mental wellbeing and the development of coping strategies used to conquer fear of COVID-19, can make individuals feel more competent during a pandemic. Future intervention programs may play an important role in the protection of the psychological health of individuals in the event of a new epidemic in the future.

### Conclusions

In this research, social connectedness and optimism turned out to play a partial mediating role in the relationship between fear of COVID-19 and mental wellbeing. Based on the findings, mental wellbeing, decreased due to fear of COVID-19, can be strengthened by positive factors such as social connectedness and optimism. The positive factors can act as a protection against the negative psychological reflections of the COVID-19 period. Finally, it is believed that these findings will guide researchers and practitioners.

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