

Research Paper



Predicting Fear of COVID-19 Based on Spiritual Well-being and Self-efficacy in Iranian University Students by Emphasizing the Mediating Role of Mindfulness

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ABSTRACT

Objective: Given the importance of COVID-19 consequences and students' health, this study aimed to predict the fear of COVID-19 based on spiritual well-being and self-efficacy among Iranian university students by focusing on the mediating role of mindfulness.

Methods: This study was a descriptive correlational study. An online sampling method was used, and the sample included 396 university students in Tehran City, Iran. Mindful Attention Awareness Scale (MAAS), general self-efficacy scale, fear of COVID-19 scale, and Paloutzian and Ellison's spiritual well-being scale were used for data collection. An independent t test, the Pearson correlation, and the regression test were used to analyze the obtained data.

Results: The results show that the overall effects of religious well-being ($\beta=-0.192$, $P=0.001$), existential well-being ($\beta=-0.227$, $P=0.001$), and self-efficacy ($\beta=-0.093$, $P=0.013$) were significant. The indirect effects of religious well-being ($\beta=-0.026$, $P=0.001$), existential well-being ($\beta=-0.013$, $P=0.016$), and self-efficacy ($\beta=-0.04$, $P=0.001$) were significant, too. The direct effects of religious well-being ($\beta=-0.253$, $P=0.001$), existential well-being ($\beta=-0.205$, $P=0.016$), and self-efficacy ($\beta=-0.133$, $P=0.013$) were significant, as well.

Conclusion: Spiritual well-being, self-efficacy, and mindfulness are associated with a reduction in perceived fear of COVID 19 in Iranian students, and mindfulness has a role in these relationships.

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Highlights

- Overall effects of religious well-being, existential well-being, and self-efficacy were significant.
- The results show a significant correlation between fear of COVID-19 with mindfulness, spirituality well-being total score, religious well-being, existential well-being, and self-efficacy.
- A comparison of the effects in male and female groups showed a significant difference in the effects of mindfulness on the fear of COVID-19 between gender groups.

Plain Language Summary

A student who perceives the COVID-19 outbreak as a threat to their life can lead them to have adverse reactions and cause fear and stress. However, based on the findings of this study, we can say students during the pandemic can strengthen their self-efficacy to the extent to which they can benefit from spiritual well-being. As a result, they will be able to cope better with the stress of uncertainty and reduce their negative expectations for the future. Also, the result of the research implies the importance of spiritual health and mindfulness as spiritual and psychological variables in explaining of fear of COVID-19. Thus, training based on promoting spiritual health and mindfulness in educational systems improves students' self-efficacy.

1. Introduction

One of the prevalent challenges in the last two years is coping with COVID-19 consequences. In December 2019, a highly contagious virus spread in about all countries. Its prevalent signs included tiredness, fever, myalgia, and dyspnea (Nooripour et al., 2021). The high mortality rate from this epidemic and its educational, economic, and social consequences caused a lot of concern and fear worldwide (Wu et al., 2020).

The epidemic nature of this virus has led to anxiety and fear of its spread. Also, the stigma of this disease makes people more susceptible to infection (Ahorsu et al., 2020). Fear of COVID-19 drives people to be on high alert to protect themselves and their loved ones leading to fear and panic in society. The unique nature of COVID-19 and uncertainty regarding its future are likely to feed the fear of COVID-19. Fear can weaken the immune system and make people vulnerable to diseases such as COVID-19 (Tsang, Avery, & Duncan, 2021).

During the turbulent period of the COVID-19 pandemic, several studies have been conducted to examine the predictive components for the likelihood of fear and stress of COVID-19 (Bakioğlu, Korkmaz, & Ercan, 2020).

Bufford, Paloutzian, and Ellison (1991) defined spiritual well-being as the combination of existential and

theological components of spirituality. Apart from any particular religious reference, existential well-being refers to the horizontal (Davidson, 2000) or “this-worldly” component of spirituality that encompasses the experience of life’s meaning and fulfillment. According to previous studies, spirituality increases psychological well-being—one of the fundamental pillars of mental health—by strengthening the sense of belonging. In sensitive and stressful situations, well-being can be an essential predictor of coping with COVID-19 (Bakioğlu, et al., 2020).

In addition to spiritual well-being, other authors have examined issues, such as self-efficacy, as essential variables during COVID-19 (Nooripour et al., 2021; Tsang et al., 2021). People’s self-efficacy refers to their belief in taking the necessary steps to achieve specific goals. Self-efficacy refers to people’s belief in their abilities to control their motivation, behavior, and social environment (Blanco et al., 2020). Thus, self-efficacy could be a protective element in preventing physical and mental disorders such as fear. Self-efficacy is thought to be negatively related to tension and fear; recent research on fear of COVID-19 supports these findings (Satinsky et al., 2021).

In addition to self-efficacy, it is believed that mindfulness techniques, such as focusing on one task at a time; walking meditation; stopping what you are doing; putting things down for a minute, taking a breath; observing thoughts, feelings, and emotions; and moving on to something that will help at the moment can promote coping styles with challenging conditions, such as fear

of COVID-19. These techniques, based on some metaphors, help reduce stress and fear (Joie-La Marle et al., 2021). Also, people with self-efficacy have higher mindfulness in their daily activities, and during COVID-19, people with high self-efficacy and mindfulness skills reported less fear of COVID-19 (Xiong, Yi, & Lin, 2020).

There are also obvious and accurate points for students regarding the COVID-19 pandemic. Because of the widespread effects of COVID-19, students have indicated that they will behave more negatively in their academic assignments (Blanco et al., 2020, p. 19). Some studies found that mindfulness predicts self-efficacy and spiritual well-being (Ando et al., 2009; Oman, et al., 2008). Mindfulness is a significant source of well-being, particularly in non-Western civilizations, such as Iranian culture (Christopher, 2018).

Considering the effective role of spiritual well-being, self-efficacy, and mindfulness, the adverse effects of fear of COVID-19 on students' mental health, and the important role of students as a prominent group in society, scientific study of these cases is necessary. To our knowledge, the relationships between these variables have not been studied simultaneously. Predicting the fear of COVID-19 based on self-efficacy and spiritual well-being seems to open a new avenue in the COVID-19 literature. As a result of these interpretations, the current study seeks to predict fear of COVID-19 among Iranian university students based on spiritual well-being and self-efficacy, with the mediating role of mindfulness.

2. Materials and Methods

The present research is a descriptive correlational study. A total of 396 students from an Iranian university in Tehran are participants in this study. In the present sample, 163 students (41.2%) were male, and 233 (52.8%) were female. The present study was correlational, and the components of spiritual well-being (religious well-being (RWB) and existential well-being (EWB)) and self-efficacy were considered predictors and independent variables, mindfulness as a mediator variable, and fear of COVID-19 as a dependent variable. The participants completed the study questionnaires in university settings. Afterward, the researcher assured the participants of the confidentiality of their answers. To clarify potential conflicts and questions participants may have, four trained research assistants monitored the completion of the questionnaires.

Study measures

Mindful Attention Awareness Scale (MAAS)

Brown and Ryan introduced the mindful attention awareness (MAAS) scale in 2003. It includes 15-item with a 6-point Likert scale from "nearly always" to "nearly never." The scale has a total score for mindfulness from 15 to 90, and a higher score indicates high mindfulness. The internal consistency of test questions was reported based on the Cronbach α coefficient from 0.80 to 0.87 (Brown, Ryan, & Creswell, 2007). In Iran, the Cronbach α value was reported to be 0.90 for the general population (Ghorbani, Watson, & Weathington, 2009). In the current research, its Cronbach alpha was 0.81.

General Self-efficacy Scale (GSE)

The general self-efficacy scale (GSE) was developed in 1979 by Schwarzer and Jerusalem and revised in 1981, and reduced to ten items. The scale is scored on a 4-point Likert-type from 1 to 4. The total scores from 10 to 20 are considered low self-efficacy, scores between 21 and 30 mild self-efficacy, and scores above 30 high self-efficacy. The Cronbach α coefficient of this scale has been reported to be 0.82 (Chang, Crogan, & Wung, 2007), and the reliability coefficient was reposted at 0.69 in the German population (Schwarzer, et al., 1997). In Iran, the Cronbach α coefficient of this scale was obtained as 0.81 (Moeini et al., 2008). In the current research, its Cronbach α was 0.78.

Spiritual Well-being Scale (SWBS)

Paloutzian and Ellison's spiritual well being scale (SWBS) was developed in 1982. This scale has 20 items, 10 of which measure existential well-being and 10 items measure religious well-being. The scale is scored on a 6-point Likert-type; "strongly disagree" to "strongly agree." The scores for spiritual and existential well-being range from 10 to 60. The Cronbach α values of the present study were 0.82 for existential well-being and 0.80 for religious well-being.

Fear of COVID-19 Scale (FCV-19S)

The fear of COVID-19 scale (FCV-19S) is a 7-item scale prepared in 2020 by Ahorsu et al. to assess fear of COVID-19. It is scored on a 5-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree." The minimum score is 7, and the maximum score is 35. A higher score indicates more fear of COVID-19. The Cronbach α of the scale for the present study was 0.84.

Study procedure

Due to the limitations caused by the COVID -19 pandemic (November 2020 to April 2021) and the impossibility of collecting data in person, the online method (through convenient sampling) was used to collect data. A list of male and female students studying in Tehran universities in the academic year 2020-2011 was prepared. The list included undergraduate, graduate, and doctoral students who were studying at 15 universities in Tehran. Then the link to the questionnaires was sent to these students through social networks (Telegram, WhatsApp, SMS, and university emails). After clicking on the link, students will be notified of the consent promise page, upon which has already been read and agreed. Students could only access the questionnaire if they had completed informed consent. The informed consent page contains information such as the research objectives and the confidentiality of the research data. Communication with the students in this study was done in their native language.

Statistical analysis

The independent t test and the Pearson correlation were calculated to examine possible differences and correlations between the different scales of students. We used the bootstrapping procedure for mediators to examine whether mindfulness plays a mediator in the relationship between spiritual well-being and self-efficacy, and fear of COVID-19. We used the macro AMOS to test the indirect effects of spiritual well-being and self-efficacy on the potential mediating variable of fear of COVID-19.

Ethical approval

Our study observed the National Research Committee's ethical values, the Helsinki Declaration of 1964,

and its subsequent modifications. When the participants returned the survey, all signed an informed consent form, and the scales were completed anonymously. The authors state that they do not have any competing interests.

3. Results

In the study sample, 163 participants (41.2 %) were male, and 233 (52.8 %) were female. The age range of the participants was between 19 to 40 years (Mean=21.55, SD=5.47 y). Also, 260 participants (65.6%) were BA or BS students, 84 (21.2 %) were MS or MA students, 34 (8.5 %) were PhD students, and 18 (4.5 %) did not report their degree of education. Besides, 195 subjects (42.2%) were married, 153 (38.6%) were single, and 48 (12.1%) did not report their marital status (Table 1).

Table 2 presents the correlations between the different study variables. The results show a significant relationship between all the variables with fear of COVID-19: the correlation between fear of COVID-19 with mindfulness ($r=-0.32$, $P<0.001$), spirituality well-being total score ($r=-0.376$, $P<0.001$), religious well-being ($r=-0.368$, $P<0.001$), existential well-being ($r=-0.476$, $P<0.001$), and self-efficacy ($r=-0.28$, $P<0.001$).

The mediating role of mindfulness

Table 3 indicates that the overall effects of religious well-being ($\beta=-0.192$, $P=0.001$), existential well-being ($\beta=-0.227$, $P=.001$), and self-efficacy ($\beta=-0.093$, $P=.013$) were significant. The indirect effects of religious well-being ($\beta=-0.026$, $P=0.001$), existential well-being ($\beta=-0.013$, $P=0.016$), and self-efficacy ($\beta=-0.04$, $P=0.001$) were significant, too. The direct effects of religious well-being ($\beta=-0.253$, $P=0.001$), existential well-being ($\beta=-0.205$, $P=0.016$), and self-efficacy ($\beta=-0.133$, $P=0.013$) were significant as well.

Table 1. Relationship between fear of COVID-19 with sociodemographic characteristics

Variables		No. (%)	Mean±SD	F (df)	P
Gender	Male	163(41.2)	14.18±4.76	3.34 (394)	0.001*
	Female	233(52.8)	15.84±4.92		
Physical diseases	Yes	10(97.5)	13.30±3.74	1.21 (394)	0.23
	No	386(2.5)	15.21±4.94		
COVID-19 in Family or friends	Yes	41(10.4)	16.32±6.03	1.70	0.04*
	No	355(89.6)	15.02±4.76		

* Indicate the significance at 5% level.

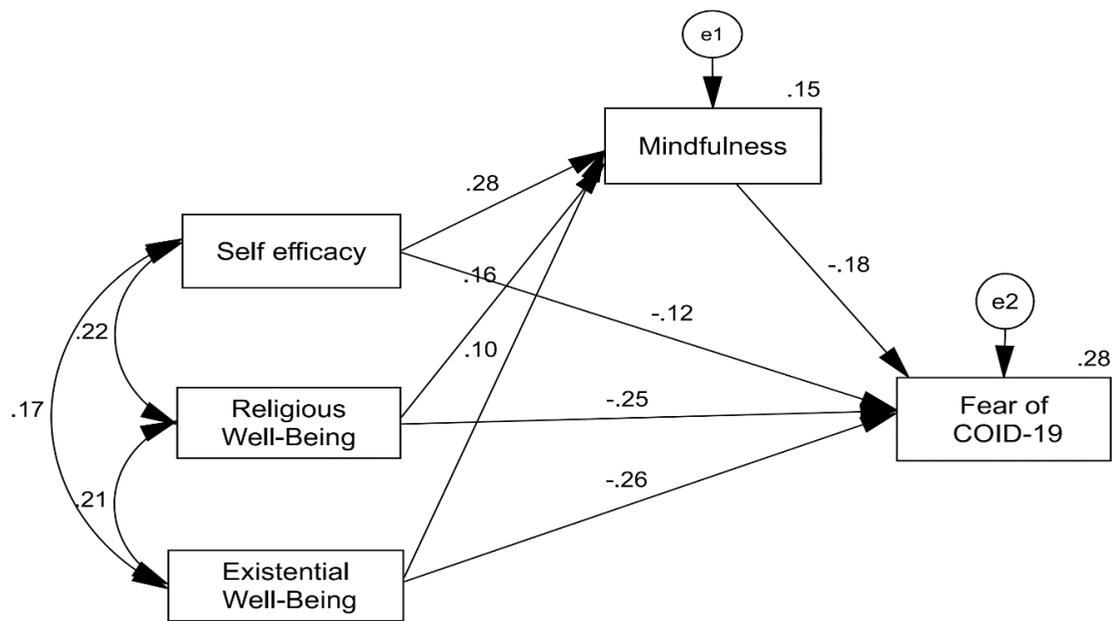


Figure 1. Predicting fear of COVID-19 based on spiritual well-being (religious well-being and existential well-being) and self-efficacy in Iranian students by emphasizing the mediating role of mindfulness

The results show that in men, the effects of self-efficacy and RWB on mindfulness were significant, while the effect of EWB on mindfulness was not. Also, the effects of self-efficacy, RWB, EWB, and mindfulness on fear of COVID-19 were significant, while the effect of mindfulness on the fear of COVID-19 was not. For females, the effects of self-efficacy, RWB, and EWB on mindfulness were significant, while self-efficacy’s effect on the fear of COVID-19 was not. A comparison of the effects in male and female groups showed a significant difference ($z=-1.929, P=0.05$) in the effects of mindfulness on the fear of COVID-19 between gender groups (Table 4) (Figure 1).

4. Discussion

This study aimed to investigate the prediction of fear of COVID-19 based on spiritual well-being and self-efficacy in Iranian university students by emphasizing the mediating role of mindfulness. Based on the mediating role of mindfulness, our findings showed the relationship between self-efficacy and components of spiritual well-being, such as religious well-being and existential well-being, and fear of COVID-19.

The findings confirmed the relationship between self-efficacy and fear of COVID-19. This result is consistent with previous related studies (Chudzicka-Czupala & Zalewska-Lunkiewicz, 2020) but inconsistent with other

Table 2. Matrix of correlations

Row	Variables	Mean±SD	1	2	3	4	5	6
1	Fear of COVID-19	15.15±4.92	1					
2	Mindfulness	60.79±13.88	-0.326**	1				
3	Spirituality well-being	32.40±5.45	-0.376**	0.247**	1			
4	Religious well-being	39.15±6.72	-0.368**	0.185**	0.208**	1		
5	Existential well-being	71.55±9.49	-0.476**	0.273**	0.721**	0.828**	1	
6	Self-efficacy	29.78±6.18	-0.278**	0.337**	0.221**	0.175**	0.251**	1

* $P \leq 0.05$; ** $P \leq 0.01$

Table 3. Mindfulness as mediators between components of spirituality well-being and self-efficacy with fear of COVID -19

Variables	Total Effect	Indirect Effect	Direct Effect	Mediation
Religious well-being	-0.192	-0.026	-0.253	Partial mediation
Existential well-being	-0.227	-0.013 (0.016)	-0.205	Partial mediation
Self-efficacy	-0.093 (0.013)	-0.040	-0.133 (0.013)	Partial mediation

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research studies (Mistry, et al., 2021). We hypothesized that a feeling of self-efficacy would help deal with the COVID-19 epidemic. One possible explanation is that students with a high sense of self-efficacy are less likely to have psychological issues. Students with severe mental distress symptoms were four times more likely to report low self-efficacy and twice as likely to report delayed academic achievement as students with mild or moderate psychological distress symptoms (Kodden, van Ingen, & Langeweg, 2020). As a result, students with high self-efficacy are less likely to experience mental health issues, such as various mental disorders and fear of COVID-19, based on their current situation. It should be remembered that self-efficacy enables one to accurately assess circumstances and pursue practical coping methods with problems and obstacles experienced (Chudzicka-Czupala, et al., 2020).

Meanwhile, people with high levels of self-efficacy can maintain relatively stable feelings even in dire circumstances. Another interpretation is that self-efficacy promotes attention and self-management (Przepiórka, Błachnio, & Siu, 2019). As a result, low levels of self-efficacy are related to anxiety and feelings of inadequacy.

On the other hand, high levels of self-efficacy are associated with increased positive emotions, which lead one to pursue challenges with zeal, set goals, and achieve success in accomplishing those goals (Ouweneel, Le Blanc, & Schaufeli, 2013). Furthermore, self-efficacy and fear of COVID-19 are not directly related (Mistry et al., 2021). In other words, the reported correlations may be due to the role of underlying cognitive variables rather than the construct of self-efficacy. Thus, the reported correlation in our study could also be due to the role of cognitive variables.

Considering the correlation between the total spiritual well-being score, religious well-being score, existential well-being score, and fear of COVID-19, some interpretations could be explained based on previous theoretical and scientific findings. In the current study, spiritual well-being was another significant predictor of the dependent variable (fear of COVID-19). As previous studies, students' wellbeing can be viewed critically during COVID-19 potentially negatively affecting students' psychological outcomes (Deniz, 2021). According to the literature, a considerable amount of meaning-based coping

Table 4. Mediating role of gender in effects among variables

Variables	Male		Female		Z-Score
	Estimate	P	Estimate	P	
Self- efficacy -->MF	0.724	0.000	0.567	0.000	-0.728
RWB -->MF	0.369	0.037	0.517	0.003	0.593
EWB -->MF	0.142	0.383	0.259	0.036	0.573
Self- efficacy -->Fear	-0.109	0.037	-0.078	0.125	0.436
RWB -->Fear	-0.219	0.000	-0.208	0.000	0.130
EWB -->Fear	-0.193	0.000	-0.184	0.000	0.125
Mindfulness-->Fear	-0.037	0.134	-0.084	0.000	-1.929*

RWB: religious well-being; EWB: existential well-being; MF: Mindfulness; Fear: fear of COVID -19.

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* P<0.05.

styles and spiritual well-being mediates the unpleasant influences of fear of COVID-19 (Özmen, et al., 2021).

On the other hand, people with high levels of well-being show happiness, contentment, and joy, a pleasant mental state, and great satisfaction with their lives. In contrast, people with low levels of spiritual well-being are dissatisfied with their lives and report repeated negative emotions, anger, hopelessness, sadness, and anxiety (Diener et al., 2010). Studies show that spiritual well-being is negatively correlated with lower mental health problems such as stress, mood disorders, and psychological distress and positively associated with improved psychosocial skills, such as self-efficacy, social interactions, optimism, appropriate emotion regulation, adaptive coping styles, and self-efficacy (Sekely, et al., 2020). Thus, spiritual well-being contributes to and influences how people evaluate their lives, extreme events, illnesses, and the experience of positive and negative emotions (Habersaat et al., 2020).

Some studies indicate that mindfulness could decrease fear, stress, and depression, but others report that mindfulness could also increase risk factors. The COVID-19 pandemic emphasizes that self-awareness of religious beliefs and norms can be a "booster" of inappropriate coping strategies, leading to lower tension and higher wellbeing. According to some studies, religiously-induced fear may trigger students' adaptive systems by motivating them to analyze the COVID-19 situation as a threat and loss or challenge and conceptualize their previous approach to COVID-19 through a religious lens (Schachter & Ben Hur, 2019). Also, this finding highlights a beneficial effect of spiritual well-being in preventing and reducing natural and health disasters. People facing potentially stressful or dangerous disasters invoke it to reduce fear. Alternatively, fear of COVID-19 might encourage students to look to religious beliefs for alternatives and interpret and evaluate events as less dangerous (Hardy, et al., 2019).

The results showed that the overall effects of religious well-being, existential well-being, and self-efficacy were significant. The indirect and direct effects of religious well-being, existential well-being, and self-efficacy were significant. Our findings are consistent with some previous studies (Dolcos, et al., 2021).

Recent studies have shown that mindfulness practice has a wide range of benefits, including improving working memory, refining psychological functioning, and reducing depressive symptoms, including negative affect and rumination (Darvishi, Otaghi, & Mami, 2020).

Similarly, mindfulness helps students cope with stress by expanding self-restraint (van der Riet, Levett-Jones, & Aquino-Russell, 2018), indicating the important effect of mindfulness on stress management, and perception of painful events, the anticipation of positive emotions, reduction of rumination, and promotion of positive affect. These factors increase life satisfaction and self-efficacy. Functioning well, managing stress, and minimizing the impact of circumstances perceived as painful have economic, personal, and social implications. In addition, mindfulness is related to self-efficacy and better coping with painful circumstances (Jalali, Farghadani, & Ejlali-Vardoogh, 2019). In summary, mindfulness is effective on many occasions, such as preventing future burnout (Guidetti, et al., 2019), moral decision-making (Sutamchai, Rowlands, & Rees, 2020), and improving memory and attentional processing (van den Hout et al., 2011). Mindfulness could control vulnerability to anxiety in dangerous situations (Taylor, Hageman, & Brown, 2016). It is worth mentioning that the functional importance of mindfulness techniques in managing stress and improving self-care has been emphasized.

Study limitations and suggestions for future research

Our study adds to our knowledge of the fear of COVID-19. Our first study limitation is the cross-sectional nature of our research. Because self-efficacy and spiritual well-being were assessed concurrently with fear of COVID-19, we cannot claim with certainty that the two variables predict the fear of COVID-19. Another limitation is that the online sample focuses on the student population, limiting the data's generalizability. In addition, using other instruments along with the questionnaires may increase the validity of the results.

Although our exploratory analyses revealed some reasons for the mediating role of mindfulness, we know that mediating should always be evaluated with a longitudinal design to assess cause-effect relationships. A significant gap in our study is the role of cognitive variables as latent variables that were not examined. Future researchers should consider adopting a longitudinal design, using more valid sampling methods, and focusing on other statistical populations to investigate these findings further. In addition, the present study examined only one dimension of mindfulness (mindful awareness), so future studies should consider using other measurement tools to examine additional dimensions of mindfulness. Furthermore, this limitation could be compensated for in future studies using meta-analysis.

Mental health professionals should use online mindfulness practice during the pandemic. Using various mindfulness films and television shows, group-based therapy applications can be created online. Furthermore, smartphone applications could develop and implement a set of culturally responsive mindfulness activities. Furthermore, the findings suggest that mindfulness (a relatively adaptable and positive concept) could be used by health promotion practitioners in general and therapists on a personal basis to mitigate the adverse psychological effects of the COVID-19 pandemic. Also, techniques from the third wave of cognitive-behavioral therapy could be used to help people who are suffering from severe psychological consequences as a result of their fear of COVID-19.

Ethical Considerations

Compliance with ethical guidelines

The research processes involving humans were about the National Research Committee's ethical values, the Helsinki Declaration of 1964, following modifications, or correspondent ethical standards. When they returned the survey, and the scales were completed anonymously. The authors declare that they have no competing interests. All participants signed an informed consent form.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

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