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Adem Peker & Serkan Cengiz

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ORIGINAL ARTICLE



Covid-19 fear, happiness and stress in adults: the mediating role of psychological resilience and coping with stress

Adem Peker^a  and Serkan Cengiz^b 

^aFaculty of Education, Department of Educational Sciences, Atatürk University, Erzurum, Turkey; ^bSerkan Cengiz, Yakutiye Guidance Research Center, Erzurum, Turkey

ABSTRACT

Objective: The aim of this study is to examine the mediating role of coping with stress and psychological resilience in the relationship between happiness and perceived stress of COVID-19 fear in Turkish adults.

Methods: 827 individuals (516 females, 311 males) above 18 years of age and living in Turkey participated in this research. The data of the research was collected through the COVID-19 Fear Scale, Depression-Happiness Scale Short Form, Perceived Stress Scale and Psychological Resilience Scale Short Form.

Results: The results show that fear of COVID-19 negatively predicts happiness and positively predicts perceived stress. According to the results, psychological resilience and coping with perceived stress mediate the relationship between fear of COVID-19 and happiness and stress. Moreover, psychological resilience and coping with perceived stress mitigate the impact of COVID-19 fear on happiness and stress.

Conclusions: The findings provide evidence as to how to reduce the negative impact of COVID-19 on mental health. In addition, the results provide information to improve mental health during the pandemic period.

KEY POINTS

- Psychological resilience reduces the effect of COVID-19 on stress and increases happiness levels.
- Coping with stress reduces the impact of COVID-19 on stress and increases happiness levels

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COVID-19; psychological resilience; mental health; coping with stress; happiness; mediation

Introduction

The spread of the coronavirus, which was accepted as a pandemic by the World Health Organisation (WHO) in March 2020, has become compounded by the negative physiological and psychological effects it has induced on individuals over a very short period of time. With the advent of the COVID-19 outbreak, individuals the world over were suddenly faced with a bout of intense fear and anxiety. Furthermore, experiencing mental issues during an epidemic can lead to an individual to misinterpret health warnings, such as those experienced in the bodily senses. According to Taylor (2019), many could misinterpret standard harmless bodily sensations or changes as symptoms of infection, leading them to increase in anxiety unnecessarily. Previous research has revealed that individuals are also liable to experience mental issues, such as depression, anxiety and panic attacks – as evidenced in research conducted during the earlier SARS epidemic (Maunder et al. 2003; Lee et al. 2007; Yildirim and Güler 2021).

A sudden epidemic that causes physical illness always represents a threat to mental health to individuals and those in their social circles. Fear of death is also a self-evident likelihood. Doctors and nurses – in particular – who are on the front-line during the treatment of COVID-19 positive patients, can experience the fear of getting infected and can infect their families, friends as well as others (Xiang et al. 2020). Quarantine practices and restrictions can increase the stress level of individuals during a pandemic (Zhang et al. 2020). However, COVID-19 could also lead

to psycho-social adaptation problems in individuals (Banerjee 2020). In addition, the flow of information about COVID-19 on social media can, in itself, serve to increase people's stress (Goyal et al. 2020).

Stress is defined as the behaviour of a person in unrealistic situations (Kasparian 2013). Stress pertains to the emotions of unpredictability, uncontrollability and overloading (Bartram and Gardner 2008). Negative experiences, such as the loss of a loved one and the inability to say last goodbyes as a result of restrictions brought in to fight the pandemic, lead to an increase in fear regarding this virus and further contribute to stress (Xiang et al. 2020).

Happiness is defined as the frequency of life satisfaction, optimistic thoughts and positive experiences (Lyubomirsky 2007). However, happiness can also significantly affect personality traits, social relationships, life goals and life satisfaction (Martinez and Scott 2014). In addition, individuals with high levels of happiness may be healthier (Diener and Ryan 2009) and more successful in interpersonal relationships (Diener and Seligman 2002).

Coping with stress, happiness and perceived stress

Coping is defined as the use of behavioural and cognitive strategies to alter the negative aspects of an individual's environment and to minimise or avoid internal threats caused by stress or trauma (Gil 2005). People who use the coping strategy may experience fewer mental problems after stressful events (Park et al. 2015). Coping strategies can help individuals to re-evaluate

their experiences and improve their psychological adjustment (Prati and Pietrantonio 2009; Strasshofer et al. 2018).

Coping according to the transactional model of stress; cognitive and behavioural efforts that individuals adopt in directing their external and internal needs that challenge or exceed their problem-solving competence (Lazarus and Folkman 1984). According to positive psychology, the use of coping behaviours can increase an individual's wellbeing (Seligman 2002). Recent studies have revealed that the use of stress-coping styles during the pandemic process reduces stress (Goriet al. 2020; Rogowski et al. 2020). The use of problem-focused coping strategies can be effective in reducing anxiety disorders (Kasi et al. 2012).

Fear of COVID-19 can affect an individual's subjective wellbeing (Satici, Kayış, et al. 2020). Previous studies have found that proactive coping predicts happiness (Sohl and Moyer 2009; Hyun and Ku 2020), while proactive coping can lead to positive emotions that increase happiness (Stiglbaauer and Batinic 2015).

While previous research has revealed that positivity (Yildirim and Güler 2021) and hope (Aghababaei et al. 2016) increase happiness; there are very few studies examining happiness during the pandemic period. However, infectious diseases can adversely affect the happiness of individuals (Lau et al. 2008). Therefore, the fear of COVID-19 can reduce the happiness of individuals.

Coping with stress can help reduce individual happiness and stress due to its protective role in mental health. Moreover, the use of stress-coping skills can help maintain mental health during the pandemic. Due to the preventive and protective nature of coping with stress, it can be an effective mediator variable between fear of COVID-19 and happiness and perceived stress.

Psychological resilience, happiness and stress

Psychological resilience is defined as a person's success against difficulties and the capacity to overcome them (Zautra et al. 2010; Rutter 2012). In another definition, psychological resilience is described as a talent by which one can react affirmatively to stress and distress and can accord with them (Shi et al. 2019). According to the positive psychology approach, stress shows the tendency of the human mind to focus on negative stimuli, rather than positive stimulants in daily life. Psychological resilience is described as a personal source that promotes sufficient adaptation towards significant stress factors (Jackson et al. 2007). In this way, psychological resilience could help to protect mental health under stressful conditions (Windle 2011). People with limited positive emotions in their life experiences have more prejudice towards positive information and emotions and are affected more from negative stress experiences (Bonanno, 2008; Rashid 2015). Studies have shown that individuals with low psychological resilience and wellbeing (McCanlies et al. 2014), optimistic perspectives (Krasikova et al. 2015), low social interest and hope levels (Sheeber et al. 2009) are more sensitive to experiencing stress.

According to the positive psychology approach, psychological resilience makes it easier for a person to adapt to threats to mental health and is a multidimensional concept that includes risk factors, protective factors and positive results (Masten 2007). In terms of positive psychology, individuals with high psychological resilience may have more skills to experience positive emotions, participate in physical activities, be optimistic and receive social support (Hefferon and Boniwell 2014). Therefore, according to the positive psychology theory, psychological resilience can be accepted as a protective factor for stress and one that increases happiness (Fredrickson, et al. 2003).

Recent studies reveal that fear of COVID-19 has significant effects on mental health (Ahorsu et al. 2020; Li et al. 2020). Individuals who are afraid of COVID-19 may experience mental problems, such as depression, stress and anxiety (Shigemura et al. 2020; Yildirim et al. 2020). Psychological resilience can be an important factor in maintaining mental health (Hu, Zhang and Wang 2015; McDonnell and Semkowska 2020). Yildirim (2019) found that psychological resilience is related to life satisfaction and positive affect. It is stated that psychological resilience positively predicts happiness (Choi and Kim 2018; Yildirim and Belen 2019), while psychological resilience can be an important spiritual resource, as it reduces the worst effects of stress (Ong et al. 2006). Tecson et al. (2019), meanwhile, found that psychological resilience is a strong predictor of stress.

In previous studies on COVID-19, psychological resilience was used as a mediating variable (Yildirim and Arslan 2020; Yildirim et al. 2020, 2021). However, there are a limited number of studies on the mediating effect of psychological resilience on happiness and perceived stress. Psychological resources such as psychological resilience can significantly protect mental health during the pandemic (Yildirim and Arslan 2020; Arslan et al. 2020). Thus, psychological resilience among adult individuals can mediate the relationship between fear of COVID-19 and happiness and perceived stress. Therefore, psychological resilience can be considered as an important factor in reducing stress from COVID-19 and increasing happiness.

Purpose of the present study

Although previous studies have provided evidence of how COVID-19 affects the mental health of individuals (Lin 2020; Mamun and Griffiths 2020; Schimmenti et al. 2020), there is little information on how this relationship is affected. Studies on the mediation of psychological resilience and coping with stress in the relationship between fear of COVID-19 and happiness and perceived stress are very limited. The study aims to examine how the relationship between fear of COVID-19 and happiness and perceived stress occurs. Therefore, this study will examine the mediating effects of coping with stress and psychological resilience in the relationship between adult individuals' fear of COVID-19 and happiness and perceived stress. Understanding the basic mechanism between fear of COVID-19 and happiness and perceived stress can contribute to the implementation and implementation of planned intervention programs for mental health. Based on this information, the hypotheses in the study were formed as follows:

H₁: Psychological resilience mediates the relationship between fear of COVID-19 and happiness.

H₂: Psychological resilience mediates the relationship between fear of COVID-19 and stress.

H₃: Coping with stress mediates the relationship between fear of COVID-19 and happiness.

H₄: Coping with stress mediates the relationship between fear of COVID-19 and perceived stress

Method

Participants

The study was conducted with 827 adults, whose ages ranged from 18 to 62 (Mean = 29.18, sd = 3.54). 62.4% of participants were female ($n = 516$) and 37.6% were male ($n = 311$). Since

Table 1. Confirmatory factor analysis results of the scales used in the research.

Scales	χ^2/df	GFI	CFI	IFI	NNFI	SRMR	RMSEA
FCS	3.70	.90	.93	.90	.92	.11	.072
DHSSF	2.97	.94	.96	.97	.95	.05	.055
PSS	3.22	.92	.91	.93	.94	.09	.066
SPRS	2.70	.95	.96	.95	.97	.04	.052

lockdown measures were in force due to the pandemic, the data collection process was completed online.

A snowball sampling method was used to determine the participants to participate in the study. The scales, prepared online, were first distributed to university students, who were asked to pass it on to others due to largescale stay-at-home measures. A certain criteria was required of participants. Namely, respondents had to be (i) living in Turkey's Erzurum province, (ii) 18 years of age or older and (iii) able to read and understand Turkish.

The researcher randomly selected one of the students from the Guidance and Psychological Counselling undergraduate program. The aim of the study was explained and an online scale link sent to the selected respondent via the university's message system. This student was asked to send the online scale link to others, who would participate in the study via e-mail. In this way, 870 people were reached. 36 people did not agree to participate in the study. Research data was collected from the 834 people, who agreed to participate in the study.

Data collection tools

The fear of COVID-19 scale (FCS)

This scale was developed by Ahorsu et al. (2020) and adapted into Turkish was Satici, Göcet-Tekin, et al. (2020). The scale takes the form of a 4-point Likert-type scale with seven items and one dimension. A confirmatory factor analysis (CFA) was performed to determine the validity of the COVID-19 Fear Scale as part of the study. The values of fit indices verified the scale (Table 1), while the Cronbach's Alpha reliability coefficients came to .90. An increase in the scores that are obtained from the scale points to a high level of fear of COVID-19. In this study, the Cronbach's Alpha reliability coefficients were found to be .87.

Depression-Happiness scale short form (DHSSF)

This scale was developed by Sapmaz and Temizel (2013). The scale is a 4-point Likert-type scale with six items and one dimension. The Cronbach's Alpha reliability coefficients of the scale were found as .80. The scale ranges from 0–3. A confirmatory factor analysis (CFA) was performed to determine the validity of the Depression-Happiness Scale Short Form. The values of fit indices verified the scale (Table 1), with higher scores obtained from the scale indicating a higher level of happiness for participants. In this study, the Cronbach's Alpha reliability coefficients came to .84.

Perceived stress scale (PSS)

In order to determine the perceived stress level of adults, the Perceived Stress Scale was used, which was adapted to Turkish by Bilge et al. (2009). The scale is a 5-point Likert-type scale (0 never, 4 very frequently) and has two sub-dimensions, which include perceived stress and perceived coping. The scale is scored within the range of 0–32. A confirmatory factor analysis (CFA) was performed to determine the validity of the Perceived Stress Scale in this study. The values of fit indices indicate that the scale was verified (Table 1), with the Cronbach's Alpha reliability coefficients of the scale coming to .81. The scale can be interpreted in terms of both total and subscale scores. Perceived stress and perceived

Table 2. Pearson's correlation coefficients, arithmetic means and standard deviation values regarding the variables of the fear of COVID-19, psychological resilience, coping with stress, happiness and perceived stress.

Variables	1	2	3	4	5
1. Fear of COVID-19	1				
2. Resilience	-.34*	1			
3. Coping with Stress	-.07*	.48*	1		
4. Happiness	-.21*	.08*	.09*	1	
5. Perceived Stress	.46*	-.45*	-.35*	-.25*	1
M	17.42	20	4.60	8.87	13.63
Sd	6.68	4.74	2.59	2.42	6.22
Skewness	.47	-.09	.43	-.05	.29
Kurtosis	-.36	.17	.08	.95	-.60

* $p < .05$.

coping subscales were used separately in this study, in line with the assessment criteria of the scale and the aims of the study. The higher the scores obtained from the perceived stress scale, the higher the perceived stress level. The higher the scores obtained from the perceived coping scale, the higher the level of stress coping behaviour of an individual. In this study, the Cronbach's Alpha reliability coefficients of the perceived stress and coping scales were found as .83 and .80, respectively.

Short psychological resilience scale (SPRS)

Scale developed by Smith et al. (2008). The scale was adapted to Turkish by Dogan (2015). The scale is a 5-point Likert-type scale with six items and one dimension. The scale is scored from 1–5. A confirmatory factor analysis (CFA) was performed to determine the validity of the Short Psychological Resilience Scale in this study. The values of fit indices indicate that the scale was verified (Table 1), while the Cronbach's Alpha reliability coefficients of the scale came to .83. Receiving high scores from the scale demonstrates a high predisposition to psychological resilience. In this study, the Cronbach's Alpha reliability coefficients were found as .79.

Data collection process

Due to the intensity of the COVID-19 outbreak and the fact that lockdown was widely enforced, data collection was performed online. Hence, online data collected via Google Forms, along with the scales, was sent to participants via e-mail.¹ Moreover, the informed consents of the study volunteers was obtained before participation to ensure only those who desired to do so were included. Moreover, individuals were informed that they could stop filling the scales at any point and that the results would remain confidential. The online data collection process was concluded in 12 days.

Data analysis

The data was analysed via computer. Since the program used only validated complete data, none were found lacking the requirements. In the end, 834 scales were used. Before the analysis, the discrepancy and normality values were examined to assess the normality of the skewness and kurtosis values. At this point, it was determined that the data of seven individuals had violated the parametric conditions and hence those were removed from the data set. The normality values were analysed once again to confirm their normality assumption (Table 2). After all these processes, the analysis was carried out with a data set of 827 participants.

The average variables of fear of COVID-19, psychological resilience, coping with stress, happiness and perceived stress and

standard deviation coefficients were found using the SPSS 22 program, inter-variable relationships were determined by the Pearson Product-Moment Correlation analysis and two-stage Structural Equation Modelling (SEM) was applied to examine the mediating role of psychological resilience and coping with stress between fear of COVID-19 and happiness and perceived stress. After the measurement model established with all variables included in the research process was confirmed, the structural model was established in the second stage. The ratio of χ^2 and degree of freedom and GFI, CFI, IFI, NNFI, SRMR, and RMSEA values were used to evaluate the goodness of fit of the established model. As breakpoints that symbol the goodness of fit; $\chi^2/sd \leq 5$; GFI, CFI, IFI, and NNFI $\geq .90$; RMSEA $\leq .80$ with SRMR are taken (Kline 2015). Mediation analyses were carried out using the AMOS-22 program. In addition, bootstrapping was performed to test the indirect and direct effects on the variables (Preacher and Hayes 2008; Inoue et al. 2017; Pandey and Shrivastava 2017). The statistical significance of direct and indirect effects in the model tested in the study was examined on 5,000 bootstrap samples. The predictions came to a 95% confidence interval.

Ethical processes

The permission of the study was obtained from Atatürk University Scientific Research and Publication Ethics Committee (Date: 10.06.2020, No: 2020/8:44738881900-E.547).

Findings

The relationship between fear of COVID-19, psychological resilience, coping with stress, happiness and perceived stress

In this study, in order to determine the relationship between the fear of COVID-19, psychological resilience, coping with stress, happiness and perceived stress, a Pearson's Correlation Analysis was employed. The results of the correlation analysis and values of arithmetic means and standard deviation values of all variables are presented in Table 2.

The results indicate that all correlations among fear of COVID-19, psychological resilience, perceived stress, coping with stress were proven to be statistically significant.

Measurement model

The measurement model was established with five latent variables (fear of COVID-19, resilience, coping with stress, happiness, perceived stress) and 27 observed variables. The established measuring model was found to fit well [$\chi^2/sd = 4.85$; GFI=.90, CFI=.94; IFI=.94; NFI=.93, RMSEA=.079, and SRMR=.048]. Furthermore, it also places a significant load on the latent structure of all observed variables ($p < .01$ between .36 and .78).

Structural model

Three models were established during the research process. In this context, the relationship between fear of COVID-19, happiness and perceived stress was first examined (Model I). In Model 1, the researchers determined that the predictor effect of fear of COVID-19 on happiness ($\beta = -.13, p < .01$) and perceived stress was significant ($\beta = .61, p < .01$). The goodness of fit indices of the structural model were found to come to an acceptable level. (see Table 3). After the level of predictor between fear of COVID-19, happiness and perceived stress was determined, mediating variables (coping with stress, psychological resilience) were added to the model and the path from fear of COVID-19 to happiness, perceived stress was removed (Model II). Considering the goodness

Table 3. Model fit indexes.

Model	χ^2/df	GFI	CFI	EGER BEN	NNFI	SRMR	RMSEA
Model I	4.91	.91	.95	.95	.95	.12	.075
Model II	4.78	.90	.94	.94	.93	.07	.076
Model III	4.87	.90	.94	.94	.93	.08	.075

* $p < .01$.

of fit indices of the structural model at this stage, it can be said that all values are acceptable (see Table 3). In the end, a model with mediating variables between the fear of COVID-19 and happiness and perceived stress was established. In this model, the path between fear of COVID-19 and happiness and perceived stress can be drawn (Model III). Considering the goodness of fit indices of the structural model, in which resilience and hope are mediating, it can be said that all values prove acceptable (see Table 3). The lack of a having significant drops path to happiness ($\beta = -.02, p > .01$) and perceived stress from fear of COVID-19 shows that there is a mediating relationship ($\beta = .40, p < .01$). Fear of COVID-19, coping with stress and psychological resilience explain 51% of perceived stress and 52% of happiness.

The standardized and unstandardized estimation results of the relationships between the main variables are shown in Table 4.

Considering all fit index values, psychological resilience and coping with stress have a mediating role in the relationship between fear of COVID-19 and happiness and perceived stress. Figure 1 shows the path diagram for the mediating model.

Bootstrapping process

The bootstrapping method was used to determine the indirect effects of structural equality modelling, established regarding that resilience and coping with stress have an mediating role in the relationship between fear of COVID-19 and happiness, perceived stress adult individuals. The coefficients resulting from this process and the confidence intervals for these coefficients are presented in Table 5.

In Table 5, there are coefficients for indirect effects between variables and confidence intervals for these coefficients. According to these findings, fear of COVID-19 indirectly and significantly affects happiness (bootstrapestimate = $-.22$, 95% CI = $[-.30, -.15]$), and perceived stress (bootstrapestimate = $.16$, 95% CI = $[.11, -.21]$).

Discussion

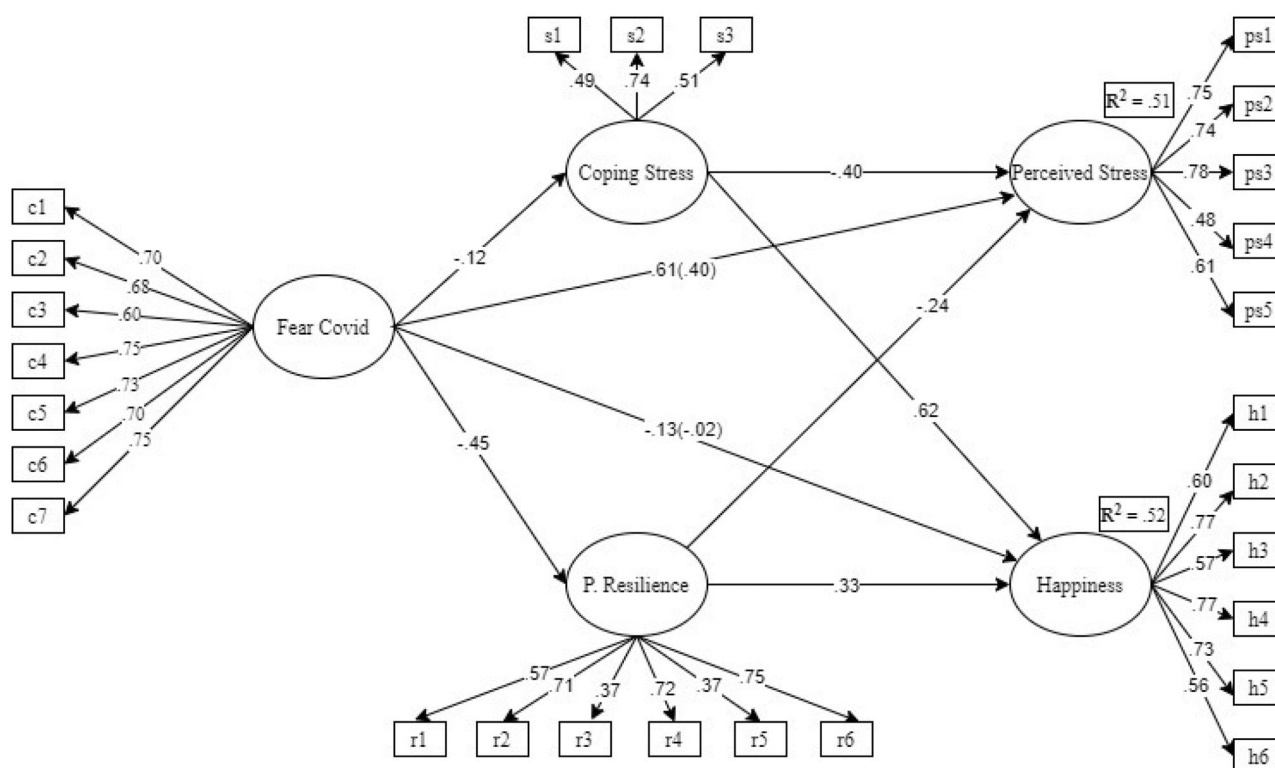
This study first examined the relationships between adults' fear of COVID-19 and psychological resilience, coping with perceived stress, happiness and perceived stress. Later, the mediating effect of psychological resilience and coping with perceived stress in adult individuals on the relationship between fear of COVID-19 and happiness and perceived stress was examined. According to research findings, there appear significant relationships between fear of COVID-19 and psychological resilience, coping with perceived stress, happiness and perceived stress. According to the findings in the mediation model, psychological resilience and coping with perceived stress have a mediating role in the relationship between fear of COVID-19 and happiness and perceived stress.

As consistent with previous studies, the results of this research support the conclusion that fear of COVID-19 reduces happiness (Sturman 2020) and increases stress (Lai et al. 2020; Qiu et al. 2020; Yildirim and Arslan 2020). Although previous studies have revealed that psychological resilience reduces COVID-19 burnout (Yildirim and Solmaz 2020) and increases the psychological health and well-being of individuals (Marcinko et al. 2020), there is a

Table 4. Estimates of the relationships among the main variables.

Variables	Unstandardized Estimate	S.E.	CR (t)	Standardized Estimate	S.E.	Lower	Upper
FCS → CS	-.08	.03	2.61	-.12	.05	.022	.134
FCS → SPRS	-.28	.03	-9.31	-.45	.04	-.341	-.231
FCS → PS	.38	.04	9.3	.61	.04	.327	.478
FCS → DHSSF	-.05	.03	2.01	-.13	.05	-.060	-.040
CS → PS	-.66	.08	-8.32	-.40	.05	.487	.874
CS → DHSSF	.66	.07	-9.3	.62	.05	-.829	-.516
SPRS → PS	-.38	.07	-5.63	-.24	.05	-.527	-.256
SPRS → HSSF	.32	.05	6.78	.33	.06	.265	.465

Note: FCS: The fear of COVID-19; DHSSF: depression-happiness; PS: perceived stress; CS: coping stress; SPRS: short psychological resilience

**Figure 1.** Standardised path coefficients for the structural equation model.**Table 5.** Bootstrapping process for the mediating model.

Indirect Effect	Estimated	%95		SE
		Lower	Upper	
FCS → (Resilience + Coping with Stress) → Perceived Stress	.16	.11	.21	.03
FCS → (Resilience + Coping with Stress) → Happiness	-.22	-.30	-.15	.05

limited number of research examining the mediating role of psychological resilience in the relationship between happiness and perceived stress. This study shows that the psychological resilience levels of adults significantly mediated the fear of COVID-19 and the negative effects on happiness and perceived stress. These results support the first and second hypothesis of the study.

Studies on psychological resilience show it as negative with anxiety (Hu et al. 2020) and possessing a positive relationship with life satisfaction and well-being (Yildirim 2019), which are indicators of happiness. Psychological resilience reduces the effect of negative affect on psychological health and increases the effect of positive affect (Arslan et al. 2020).

The fact that psychological resilience includes characteristics associated with both protective characteristics and optimism and positive emotions (Ong et al. 2006) may make individuals experience less stress from COVID-19 fear. At the same time, the fact

that psychological resilience provides positive effects on the ability of the individual to recover during stressful life events, manage stressful situations effectively and adapt to stressful life events (Bonanno 2008), COVID-19 fear may cause less stress in individuals.

Another result of the study showed that coping with perceived stress significantly mediates the relationship between fear of COVID-19 and happiness and perceived stress. This result can be interpreted as the way adults' coping with stress can reduce the negative impact of fear of COVID-19 on happiness and perceived stress. While research in this area is limited, the findings are consistent with previous studies on the relationship between coping with stress, fear of COVID-19 and mental health. For example, Mahamid and Bdier (2021) found that positive religious coping strategies reduce perceived stress and depression in individuals with COVID-19 fear. Lai et al. (2020) reported that college

students who showed coping behaviors such as positive thinking, exercising and support from family and friends experienced less stress.

Those who use coping strategies less often may be at particular risk of psychopathology when faced with high COVID-19-related stress levels (Mushquash and Grassia 2021). Therefore, using coping styles during the pandemic process can help individuals protect their mental health. For example, a study of medical students found that students' use of their coping styles resulted in less stress (Abdulghani et al. 2020). As a matter of fact, it is stated that coping behaviours during COVID-19 process reduce perceived stress (Gori et al. 2020; Rogowska et al. 2020). Psychological resilience and coping have mediated roles in the relationship between stressful experiences associated with COVID-19 and acute stress disorder (Ye et al. 2020). This finding of the study can be thought to extend previous similar research by incorporating coping strategies to reduce perceived stress and increase happiness after the COVID-19 outbreak.

Different variables can affect the concept of happiness. For example, Yildirim and Güler (2021) observed that positivity had a mediating effect between perceived risk of COVID-19 and happiness. Chang et al. (2016) revealed that emotion-focused coping styles had a mediating role between HIV and happiness. Hyun and Ku (2020) found that proactive coping styles positively affect happiness. Individuals who were prepared to deal with COVID-19 have reported increased overall happiness in their lives compared to those who were not prepared (O'Donnell et al. 2020). These results supported the third and fourth hypothesis of the study.

The concept of psychological resilience is not something activated under normal conditions. The loss of a loved one occurs after traumatic experiences such as encountering serious disease, natural disasters and mental issues, such as stress and depression. In the field of mental health, risks have an impact on risk-protective factors and resulting adaptation behaviours (Winders 2014). Those with poor psychological resilience are more vulnerable to an infectious outbreak in terms of their psychological health and feel more of a need for psychological assistance. A study examining the effects of psychological robustness in psychiatric disorders found that low psychological robustness is associated with various psychopathologies, but moderate and high psychological robustness has a protective effect from psychopathologies (Shrivastava and Desousa 2016). In addition, those who have problems communicating with people in their daily lives and who do not have enough perception to create a positive future may experience more intense depressive feelings (Boxer et al. 2012).

Limitations of the research and recommendations for future studies

The results of the study should be considered in light of their limitations. First of all, there cannot be drawn a cause and effect relationship, because this study was conducted in a relational perspective. Establishing a causality could be done only via an experimental study. Secondly, the answers of individuals given to the scales are based on their own self-reports. A longitudinal study could be conducted in order to obtain more detailed results about the mediation and effects. Another limitation is that this study has been conducted only with adults living in Turkey. Therefore, the generalisation of the results must be considered carefully. Conducting studies on this subject in different geographical regions may provide greater generalisability for the research findings.

In a pandemic, uncertainties can increase stress and reduce happiness. In order to reduce these sensations, information provided by health authorities should be taken into account, rather than excessive exposure to information such as that provided on internet sites. Physical activity in the COVID-19 process should not be neglected, as being physically active is effective in coping with stress. In the COVID-19 process, it is very important to maintain social bonds and stay connected with the environment so that maintaining mental health. Although distance rules require physical distance from other people, it is necessary to abide by social distancing, without being completely disconnected from family, friends and loved ones.

Conclusions

According to the results of this study, psychological resilience and perceived coping play a mediating role in the relationship between adult individuals' fear of COVID-19 and perceived stress and happiness. The results ought to be used to inform mental health specialists and provide evidence that adult individuals with COVID-19 fear are more vulnerable to mental health problems. In addition, psychological resilience and high levels of coping with perceived stress provide new information about less stress and more happiness.

Disclosure statement

No potential conflict of interest was reported by the authors

Author contributions

After the literature review of the relevant subject, AP and SC collectively came up with the idea of this research. After determining the subject, they ensured the completion of the AP and SC research procedures. While AP handled the ethics committee approvals and the official permission work for the implementation of the scales, AP and SC conducted the data collection process. The transfer of the collected data to the computer environment and examination of their suitability for analysis were made by AP. Reporting processes were completed by AP and SC. The introduction part of this study was written by SC, the methodology section by AP and the findings and discussion parts by AP. AP reviewed the whole reporting process of this study.

Note

1. <https://docs.google.com/forms/d/e1FAIpQLSdQim4uhSI-MEWuTKxtgsz>

ORCID

Adem Peker  <http://orcid.org/0000-0002-3594-9166>
Serkan Cengiz  <http://orcid.org/0000-0001-9070-6338>

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