The Invisible Battle: Investigating the Relationship Between Coronavirus Stress, Affective Balance, Mindfulness, and Psychological Health in University Students During the Pandemic

Furkan Kaşıkcı [i]
Ankara University

Burak Can Korkmaz [ii]
Family and Social Services

Neslihan Güney Karaman [iii]
Ankara University

Abstract

This study examines the effect of coronavirus stress, affective balance, and mindfulness on psychological health. The participant group of the study consisted of 692 university students, 391 (56.5%) of whom were female and 301 (43.5%) of whom were male. The mean age of participants was 21.08 (Sd = 1.91). Results indicated that coronavirus stress was significantly and negatively related to positive affect, mindfulness, and psychological health but positively to negative affect. The relationship between coronavirus stress and psychological health was partially and serially mediated by affective balance and mindfulness. These findings suggest that affective balance and mindfulness are important mechanisms that may help explain the effect of coronavirus stress on psychological health.

Keywords: Coronavirus Stress; Affective Balance; Mindfulness; Psychological Health

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[i] **Furkan Kaşıkcı,** Assist. Prof. Dr., Department of Educational Psychology, Ankara University, ORCID: 0000-0002-1042-1920

Correspondence: furkan.kasikci@atauni.edu.tr

[ii] **Burak Can Korkmaz,** Republic of Turkey Ministry of Family and Social Services, ORCID: 0000-0002-7122-9289

[iii] **Neslihan Güney Karaman,** Prof. Dr., Department of Educational Psychology, Ankara University, ORCID: 0000-0003-1318-303X

INTRODUCTION

Although nearly three years have passed since the pandemic outbreak, the number of people negatively affected by the pandemic has been increasing daily. WHO reported that as of September 2022, about 601 million people were infected with COVID-19, and approximately 6,5 million died (WHO, 2022). These reasons have put the world in unprecedented uncertainty. Hence, to combat the worldwide pandemic, interventions were implemented that seriously changed the routines of daily life.

In order to prevent the spread of the pandemic, quarantine, and lockdown regulations have been implemented since the early days of the outbreak. People have been separated from their loved ones due to COVID-19 restrictions. Furthermore, there have been ongoing concerns about health conditions (McDonald et al., 2022). A recent multinational study including 35 countries showed that 26.7% of the participants had symptoms of depression. Moreover, this study found that 28.2% of participants had anxiety symptoms, while 18.3% had stress symptoms (Chen et al., 2021). Because individuals were at risk during the COVID-19 pandemic, it is necessary to consider the psychological health of all individuals, regardless of whether they were infected.

Schools closing due to the pandemic has led to a lack of social interaction and access to stress-coping resources for students. The shift to online teaching has further limited the interaction between students and teachers. The pandemic has significantly impacted students of all educational levels, as they may have lost their social resources, such as peers and teachers (Angelina et al., 2021). Personal resources, such as mindfulness and affective balance, may mediate the relationship between coronavirus stress and psychological health, especially when social resources are limited in people of all ages.

Alongside the positive emotions, university students may experience more negative emotions than ever due to sudden changes and long-lasting uncertainties during the pandemic. Thus, the perspective of existential positive psychology (PP 2.0) will be more meaningful in evaluating the COVID-19 pandemic that affects our lives profoundly. PP 2.0 suggests that balancing individuals' negative and positive emotions effectively protect psychological health (Wong, 2019). Maintaining optimal affective balance is challenging during the pandemic. Thus, university students' psychological health may be at risk due to higher negative emotions. As another theoretical basis of this research, according to the broaden-and-build theory, positive emotions are valuable sources of enhancing thought-action repertoires, and the scope of attention (Zhao & Zhang, 2022). Thus, affective balance is essential for psychological health. However, when coronavirus stress emerges, the impact of affective balance on psychological health may be more critical.

Similar to affective balance, the role of mindfulness is significant in the relationship between coronavirus stress and psychological health because affective balance and mindfulness are not only associated with each other (Ramasubramanian, 2017) but are also directly related to stress (Johnson et al., 2021). On the other hand, Enkema et al. (2020) claimed that mindfulness is not always associated with affective balance. As a result, this study identified affective balance and mindfulness as potential mediating factors. It is useful to examine the literature on coronavirus stress and psychological health separately to understand the function of affective balance and mindfulness.

Coronavirus stress, affective balance, and mindfulness

There has been a worldwide effort to take serious measures to prevent the spread of the COVID-19 pandemic. After the implementation of measures, people have faced severe negative consequences such as economic stress, job loss, and loss of social support (Saladino et al., 2020). All these undesirable consequences led to unpleasant experiences during this challenging period, making the coronavirus a major source of stress (Arslan et al., 2021). Due to the significant impact of coronavirus stress, there is a need to examine specific cognitive and affective factors that may influence psychological health during the COVID-19 pandemic (O 'Connor et al., 2022).

Positive and negative emotions are evaluated within the 3-component structure of the concept of happiness according to the subjective well-being model (Diener, 2000). Affective balance is the dominant factor in identifying an individual's perception of happiness. The closer the affective balance is to the optimal level, the more positive the person will respond to the negativities in daily life (Veilleux et al., 2020). Affective balance has consistently been linked to psychological health in the literature, as demonstrated in a study by Arslan et al. (2021). They found that affective balance plays a crucial role in maintaining psychological well-being. On the other hand, Denes et al. (2017) stated that individuals' affection preferences may differ. Thus, examining affective balance with psychological health during the COVID-19 pandemic is crucial.

As another factor related to coronavirus stress, mindfulness refers to noticing what the individual goes through (Kelly, 2022). In this respect, mindfulness is a crucial self-regulatory and stress-coping strategy (Skelly & Estrada-Chichon, 2021). In addition, mindfulness reduces ruminative thoughts, expressed as the frequent use of negative thoughts and evaluations towards oneself (Thompson et al., 2021). Therefore, the role of affective balance and mindfulness in the relationship between coronavirus stress and psychological health can be significant.

Affective balance, mindfulness, and psychological health

Studies suggest that relatively more expressions of positive emotions than negative ones positively impact resilience (Xie et al., 2019), well-being, and psychological health (Veilleux et al., 2020). Also, Arslan et al.'s (2021) study showed a positive and moderate correlation between positive emotions and psychological health. In contrast, a negative and moderate association was found between negative emotions and psychological health. In conclusion, discussed studies highlight that changes in affective balance may impact psychological health in a stressful situation, such as the COVID-19 pandemic.

Dillard and Meier (2021) indicate that mindfulness is positively associated with psychological health and well-being. Moreover, Liu et al. (2022) claim that mindfulness is negatively related to many undesirable factors (depression, anxiety, and stress). Similarly, a Systematic Review study in which 93 articles were examined revealed a negative association between mindfulness and psychological symptoms (Tomlinson et al., 2018). On the other hand, Roche et al. (2020) indicated that mindfulness does not always compensate for adverse conditions. Thus, it is crucial to investigate the role of mindfulness in the relationship between coronavirus stress and psychological health.

Affective balance is more optimal in older adults than young adults because negative affect decreases and emotion regulation increases with advancing age in adulthood (Wrzus et al., 2014). Emerging adulthood confronts young adults with many uncertainties, hard decisions, and changes. Thus, the young adult population should be targeted in terms of psychological health (González-Sanguino et al., 2020). Because affective balance is less stable for young adults, they may be more susceptible to potential crises, such as the COVID-19 pandemic, and immediate changes. That is why university students were selected as the participant group for this study.

Current Study

This study aims to investigate the effect of coronavirus stress, affective balance, and mindfulness on psychological health. The significance of determining the factors that mediate the relationship between coronavirus stress and psychological health is evident (O'Connor et al., 2022). Because affective balance is associated with mindfulness for various reasons like lower rumination (Tumminia et al., 2020), emotional clarity, and avoiding distraction (Carleton et al., 2018), this research takes into consideration affective balance as well as mindfulness in the relationship between coronavirus stress and psychological health.

On the basis of the above-discussed literature, the following hypotheses were tested.

1. Coronavirus stress negatively predicts psychological health.

2. The relation between coronavirus stress and psychological health is mediated by affective balance (positive and negative affect).

3. The relation between coronavirus stress and psychological health is mediated by mindfulness.

4. The relation between coronavirus stress and psychological health is serially mediated by affective balance (positive and negative affect) and mindfulness.

In the context of the research model, the evaluation of affective balance and mindfulness as mediators was conducted in a systematic manner. Initially, the mediating role of each variable was assessed individually (Hypothesis 2 and 3). Subsequently, the joint mediation effect of both variables was analyzed in a combined model (Hypothesis 4)."

METHOD

Participants

The participant group of the research was 692 university students. Of the participants, 391 (56.5%) were female, and 301 (43.5%) were male. In addition, the age of the participant group is between 18 and 24 years (mean age = 21.08±1.91). A sample of 692 university students was collected using a convenient sampling method. Convenient sampling is a type of sampling method in which researchers select participants for their study based on their availability and accessibility..

Measures

Coronavirus Stress

The Coronavirus Stress Measure was developed by Arslan et al. (2021) to assess the stress caused by the COVID-19 pandemic. The scale was adapted from the perceived stress scale developed by Cohen et al. (1983). The scale has a one-dimensional and 5-item structure (e.g., "How often have you felt nervous and stressed because of the COVID-19 pandemic?"). In addition, the Coronavirus Stress Scale is a self-report and 5-point Likert scale, ranging between 0 = never and 5 = very often. As a result of the explanatory factor analysis performed during the adaptation process of the scale, it was concluded that the scale had a good fit ($\chi2$ = 67.21, sd = 5, CFI =.98, TLI =.96, RMSEA =.16, SRMR =.06). The scale has high reliability (α= .83) in the Turkish sample. The Cronbach alpha reliability coefficient of the scale for this study is .80.

Affective Balance

We used the Positive and Negative Experience Scale to measure the participants' affective balance. The scale was developed by Diener et al. (2010). The scale consists of 2 sub-dimensions (positive emotion and negative emotion) and a total of 12 items. Telef (2013) carried out the adaptation study of the scale to the Turkish sample. In the adaptation phase, the scale fitted well ($\chi2$ / sd = 1.80, CFI = .99, NFI = .97, RMSEA = .04, SRMR = .03). In addition, the Cronbach alpha reliability coefficient of the scale was calculated as .85 for positive emotion and .75 for negative emotion. This study's Cronbach Alpha reliability coefficients were .88 and .81, respectively.

Mindfulness

Mindfulness was measured using the Compassion scale developed by Pommier (2011) to measure the mindfulness levels of the participants. The mindfulness subscale consists of 4 items (e.g., "I pay careful attention when other people talk to me") that measure the awareness levels of young

adults. Akdeniz and Deniz (2016) carried out the adaptation study of the scale to the Turkish sample. In the Turkish version of the scale, item factor loads range from .46 to .64. In the adaptation study, the Cronbach alpha reliability coefficient of the scale was .85. The Cronbach alpha reliability coefficient for this study is .72.

Psychological Health

Psychological health was measured using the Psychological Health Problems Brief Symptom Inventory (BSI-18) developed by Derogatis and Fitzpatrick (2004), translated and validated in the Turkish context by Arslan et al. (2022). The inventory consists of 18 items including 3 sub-dimensions: depression (e.g., "Feeling no interest in things"), anxiety (e.g., "Nervousness or shakiness inside") and somatization (e.g., "Faintness or dizziness"). Arslan et al., (2022) obtained indicate that the scale has sufficient compliance ($\chi 2$ / sd = 3.19, CFI = .92, TLI = .90, RMSEA = .07). In the related study, the reliability cast number of the scale was .93. The Cronbach alpha reliability coefficient of the scale for this study was .83.

Data Collection

Before starting the data collection process, research approval was first obtained. During the data collection process of the research, data were collected online (due to the Covid-19 pandemic and the lack of face-to-face education in schools) in accordance with legal procedures. In this context, the link prepared via Google Forms was sent to the students via the student information system, e-mail and communication applications such as WhatsApp. In addition, an informed consent form link declaring that students voluntarily participated in the data collection process was added to the online form. The students were informed that they could leave the research whenever they wanted. Since each of the questions presented to the participants during the data collection process required an answer, there was no missing data during the research process. Finally, the data collection process of the study took place between November 2021 and December 2021.

Data Analyses

This research examined the mediation of positive affect (M1), negative affect (M2), and mindfulness (M3) in the relationship between coronavirus stress (X) and psychological health (Y). Before the data analysis phase, as researchers, an online form was sent to those who volunteered to participate in the research in order to reduce the sampling error. In addition, the data were collected by exceeding the minimum required number in order to reducesampling error. Missing data analysis was made for the collected data, and its suitability for parametric tests was examined. Then, multivariate analyzes of normality and outlier analyzes (kurtosis, skewness) were performed. In this context, we used the MVN package in R (4.1.2) to calculate the multivariate skewness and kurtosis values of Mardia. As a result of this procedure, the multivariate normality of Mardia was confirmed (p>.05). Consequently, a total of 723 young adults were reached, and the scale form of 31 students was removed from the data set. Correlation analysis was performed to test the relationship between the variables. After revealing the relationships between the variables, the mediator role of positive/negative affect and mindfulness in the relationship between coronavirus stress and psychological health was examined with a contemporary approach. In the analysis of mediation models, instead of the traditional approach introduced by Baron and Kenny (1986) and expressed as the causal steps approach, the contemporary approach, which provides more valid and reliable results in mediation models, was used (Fritz & MacKinnon, 2007; Preacher & Hayes, 2008). In the next step, we performed the regression-based mediation analysis (Model 80) proposed by Hayes (2018).

In the final stage, the (10,000) re-sampling bootstrapping method was applied to estimate the 95% confidence intervals (CI) to examine the significance of the indirect effects (Preacher & Hayes, 2008). Mediation analyzes were performed using the PROCESS macro (Hayes, 2018).

Ethical Rules Followed in This Research

In this research process, we paid attention to Research and Publication Ethics. In this context, carried out within the scope of the permission obtained based on the decision of the Ethics Committee of X University Institute of Educational Sciences Unit, dated 11/11/2021. Besides, the data collection process was continued only with students who accepted voluntary participation (approved the informed consent form).

RESULTS

In the preliminary analysis phase of the study, the kurtosis and skewness coefficients of the variables were calculated first. Table 1 shows that the kurtosis values of the variables are between -.26 and .08; skewness values range from -.21 to .11. Also, the kurtosis and skewness values are between ± 2 criteria for the assumption of normality. This means that all variables have a normal distribution (George & Mallery, 2010).

Then, the relationship between the variables was examined. In this context, first of all, there is a significant and positive relationship between psychological health and mindfulness (r =.33, p<.01). There is a negative and moderate correlation between coronavirus stress and positive affect (r = -.32, p<.01), mindfulness (r= -.26, p<.01), and psychological health (r = -.39, p<.01). Also, contrary to this situation, there was a positive and moderate relationship between coronavirus stress and negative affect (r =.25, p<.01). In addition, there was a moderate and positive correlation between positive affect and mindfulness (r =.25, p<.01), psychological health (r =.27, p<.01). Finally, there was a negative and moderate relationship between negative affect and mindfulness (r = -.28, p<.01) and psychological health r = -.34, p<.01. These results are in Table 1.

Table 1 Descriptive statistics and correlation result.

	Mean	SD	Skewness	Kurtosis	CSTR	POE	NEE	MIND	PHEA
CSTR	14.04	3.04	.08	-.17	-	-.32**	.25**	-.26**	-.39**
POE	20.98	3.02	.02	.11	-	-	-.25**	.25**	.27**
NEE	17.07	3.99	-.26	.13	-	-	-	-.28**	-.34**
MIND	13.92	4.04	.04	-.19	-	-	-	-	.33**
PHEA	23.94	5.03	-.03	-.21	-	-	-	-	-

n= 692. ** p<.01. CSTR = Coronavirus stress. POE = Positive effect. NEE = Negative effect. MIND = Mindfulness. PHEA = Psychological health

Mediation Analyses

After examining the preliminary analyses, the mediation model was conducted to examine the direct and indirect relationships between variables. In this context, firstly, coronavirus stress significantly predicted positive affect (β = -.32, p < .001) and negative affect (β = .25, p < .001). Coronavirus stress explained 10% of the variance in positive affect and 6% of the variance in negative affect. In addition, coronavirus stress (β = -.17, p < .001) was a significant predictor of positive affect (β = .14, p < .001) and negative affect (β = -.20, p < .001) on mindfulness. As seen in Table 2 and Figure 1, coronavirus stress and affective balance factors explain 14% of the variance in mindfulness. This indicates that affective balance factors mediate the relationship between coronavirus stress and mindfulness.

Table 2 Coefficients for the mediation model (Unstandardized)

	Consequent															
	M_1 (Positive Affect)				M_2 (Negative Affect)				M_3 (Mindfulness)				Y (Psychological health)			
	Coeff.	SE	t	p	Coeff.	SE	t	p	Coeff.	SE	t	p	Coeff.	SE	t	p
Constant	25.41	.50	50.62	<.001	13.65	.50	27.52	<.001	16,79	1.29	12.97	<.001	26.73	1.33	20.11	<.001
X	-.21	.04	-8.87	<.001	.16	.04	6.90	<.001	-.19	.04	-4.38	<.001	-.58	.04	-7.32	<.001
M_1									.25	.04	3.81	<.001	.26	.04	2.49	<.01
M_2									-.36	.04	-5.41	<.001	-.38	.04	-5.69	<.001
M_3													.47	.04	5.23	<.001
	$R^2 = .10$				$R^2 = .06$				$R^2 = .14$				$R^2 = .26$			
	F = 78.63, p < .001				F = 47.65, p < .001				F = 36.19, p < .001				F = 59.29, p < .001			

Another finding of psychological health is coronavirus stress ($\beta = -.26$, $p < .001$), positive affect ($\beta = .09$, $p < .05$), negative affect ($\beta = -.20$, $p < .001$), and mindfulness ($\beta = .19$, $p < .001$). As a result, all variables explained 26% of the variance in psychological health. This result shows that psychological health is predicted by coronavirus stress, affective balance elements, and mindfulness. In other words, as seen in Table 2 and Figure 1, positive affect, negative affect, and mindfulness partially mediate the relationship between coronavirus stress and psychological health. In addition to these findings, the Bootsrapping method was applied to see the indirect and direct effects of coronavirus stress on psychological health, and 95% confidence areas were calculated. The results obtained are in Table 3.
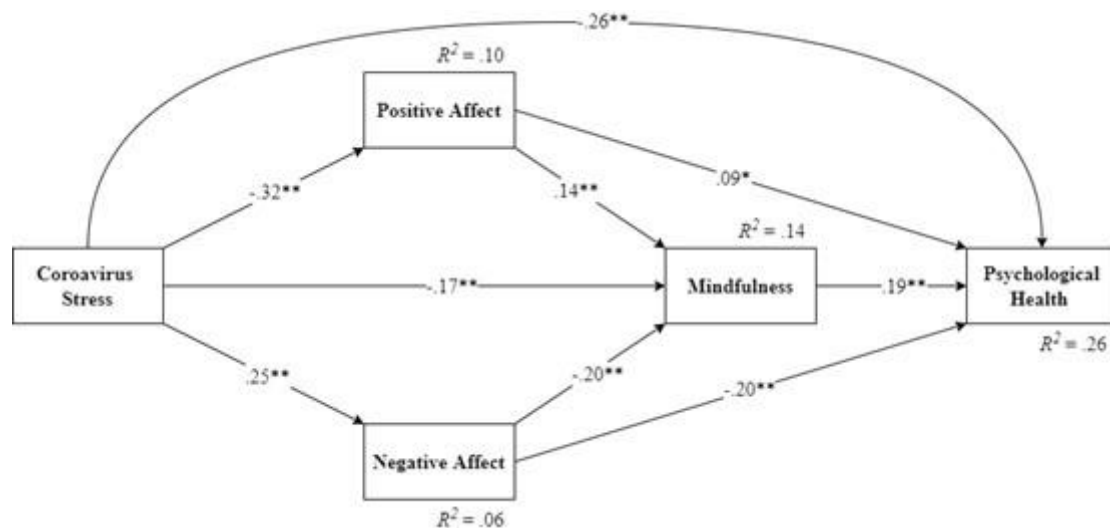

Figure 1 The research model of the study

Table 3 Unstandardized total, direct and indirect effects, and 95% bias-corrected confidence.

Paths	Effect	SE	BootLLCI	BootULCI
Total effect	-.39	.03	-.32	-.38
Direct effect	-.26	.04	-.19	-.25
Total indirect effect	-.13	.02	-.16	-.10
Coronavirus Stress --> Positive Affect --> Psychological Health	-.03	.01	-.05	-.01
Coronavirus Stress --> Negative Affect --> Psychological Health	-.05	.01	-.07	-.03
Coronavirus Stress --> Mindfulness --> Psychological Health	-.03	.01	-.05	-.01
Coronavirus Stress --> Positive Affect --> Mindfulness --> Psychological Health	-.01	.00	-.02	-.01
Coronavirus Stress --> Negative Affect --> Mindfulness --> Psychological Health	-.01	.00	-.02	-.01

DISCUSSION

The current study aimed to investigate underlying psychological mechanisms linking coronavirus stress to university students' psychological health. In this sense, this study sought the roles of affective balance and mindfulness in the context of the COVID-19 pandemic. Various studies on coronavirus stress and psychological health have been found in the literature. However, to the best of our knowledge, this is the first study addressing the mediators as affective balance and mindfulness for the relationship between coronavirus stress and psychological health.

Coronavirus Stress and Psychological Health

These results revealed, as we hypothesized, that coronavirus stress negatively and significantly predicts psychological health. On this basis, university students' psychological health is at risk of worsening when coronavirus stress arises. This finding is consistent with previous studies (Chen et al., 2021; Wang et al., 2022). Although a mature audience, such as the 18-24 age group, was selected for this study, the negative effect of coronavirus stress on psychological health emerged. This age group, consisting of university students, is supposed to be better at coping with difficulties than younger age groups (Oyoo, 2018). Thus, it can be predicted that coronavirus stress may adversely affect the psychological health of younger age groups, as they have fewer coping strategies than young adults.

Coronavirus stress affects the psychological health of university students regardless of whether they are exposed to coronavirus disease. Even only knowing the presence of the coronavirus influences psychological health. Hence, coronavirus stress is more likely to arise from a process that comes with uncertainty and develops gradually rather than a sudden change. The complete disappearance of the coronavirus is unlikely today. Coronavirus stress, thus, may exist in our lives for many years. Therefore, it will be useful to consider the possible mediating variables between coronavirus stress and psychological health to understand underlying psychological mechanisms.

The Mediating Role of Affective Balance

Coronavirus stress was negatively and significantly related to positive affect, but positively to negative affect. This finding supports that those experiencing coronavirus stress undergo negative emotions noticeably more. In addition, the negative relationship between coronavirus stress and positive affect indicates that coronavirus stress is an influential variable in reducing positive emotions. In this sense, coronavirus stress suppresses positive emotions in university students and leads to the augmentation of their negative emotions. This interpretation is coherent with the finding of Bachem et al. (2020), demonstrating that coronavirus-related problems are associated with negative emotions.

Moreover, the finding is in line with prior studies reporting that negative affect results in poor psychological outcomes, while positive affect brings about better outcomes (Deng et al., 2021; Wang et al., 2020). Positive affect plays a critical contributory role in coping with stressful life events. On the contrary, negative affect gives rise to university students being affected more deeply in stressful situations. Hence, negative affect deleteriously influences their mental health. Thus, affective balance tends to be less optimal for university students exposed to coronavirus stress because considering that the measures taken during the COVID-19 pandemic are significant stressors on university students, these stressors result in more inhibiting positive emotions and experiencing more negative emotions instead. Hence, negative affect adversely influence the psychological health of university students with high coronavirus stress levels.

The Mediating Role of Mindfulness

Findings from the present study confirm the mediator role of mindfulness in the relationship between coronavirus stress and psychological health. Mindfulness is an effective self-regulating mechanism, emphasizing the significance of creating awareness by paying attention to the present moment (Skelly & Estrada-Chichon, 2021). However, due to the stress brought on by the COVID-19

pandemic, it can become exponentially harder for university students to focus on the present in their already busy pace of life. At the same time, the daily lives of university students have necessarily changed with the coronavirus measures, so the coronavirus means more than just the source of stress that affects the individual (Saladino et al., 2020). The changes in social life led to an excessive number of factors that university students have to consider. Because university students, despite their enhanced cognitive capacities, face more elements than usual to cope with, preserving mindfulness can be more challenging for them.

This finding may also be attributed to the exacerbation of ruminative thoughts. Mindfulness effectively prevents negative evaluations concerning oneself, called ruminative thoughts (Thompson et al., 2021). Because coronavirus stress negatively influences mindfulness, ruminative thoughts may co-occur. For this reason, a change in mindfulness is more likely to affect psychological health by causing ruminative thoughts. Thus, university students' mindfulness levels are at risk of plummeting with the emergence of coronavirus stress. Therefore, mindfulness is another significant mediator in the relationship between coronavirus stress and psychological health.

Affective Balance and Mindfulness as Serial Mediators

The findings of this study suggested that positive affect was positively associated with mindfulness, while negative affect was negatively associated with mindfulness. More specifically, the closer the affective balance of university students is to the optimal, the higher their level of mindfulness. The broad-and-build theory explains the relationship between affective balance and mindfulness, indicating that individuals with affective balance are more likely to have enhanced attention, thoughts, actions, and awareness, thanks to the predominance of positive affect (Zhao & Zhang, 2022). From this point of view, the coping skills of individuals who maintain affective balance markedly improve, thus bringing mindfulness to the fore (Tschacher & Lienhard, 2021). Therefore, affective balance predicts mindfulness for university students.

Limitations and Implications

The findings of this study should be interpreted with several limitations. First, this research is a cross-sectional study, which prevents us from making causal inferences. Future studies could be designed longitudinally to test the temporal variation of the model we tested in the research. In addition, the data obtained during this research process was self-report and limited to data from participants only. In this context, future studies can benefit from various sources of information (family members and friends) to test the relevant model. This research only explained the psychological health status of university students in the aftermath of the COVID-19 pandemic, but no information was obtained about their status before the COVID-19 pandemic. For this reason, the variables that affect university students' psychological health may be under the influence of different factors that have been ongoing since before the COVID-19 pandemic. Moreover, the study was conducted in a specific country with a specific social environment. Therefore, generalizing the findings to other regions and countries should be made with caution.

In this study, we preferred quantitative research methods. Future studies can be designed in a qualitative or mixed model to obtain more in-depth results. We also used a variable-focused approach in this research. Future researchers can test the model we tested with a person-centered approach. In addition, it should be considered that there is a need for research from the perspective of PP 2.0, which constitutes the theoretical basis of this research. Furthermore, intervention studies that encourage both affective balance and mindfulness should be carried out to protect/improve the psychological health of university students.

Because adapting to containment measures is challenging for university students, policies should target this specific group. Even if containment measures limit university students' daily lifves and expectations related to vaccination during the COVID-19 pandemic force university students, mindfulness-based interventions can effectively protect their psychological health. If interventions

focus on mindfulness and affective balance together, the adverse effects of the COVID-19 pandemic on university students may decrease. As university students start to be vaccinated and their self-help activities increase, there is a decrease in emotional reactions to covid. In this sense, instead of a crisis-based intervention, interventions in which individuals develop and recognize themselves will be more beneficial in matters concerning public health and especially youth.

CONCLUSION

The current study suggested that coronavirus stress deteriorated university students' psychological health even after three years from the first case of coronavirus disease. Moreover, affective balance and mindfulness partially and serially mediated the impact of coronavirus stress on psychological health. The findings of this study provide evidence for the broaden-and-build theory by stating that affective balance predicts mindfulness and mediates the relationship between coronavirus stress and psychological health. In addition, this study supports existential positive psychology theory by indicating that affective balance results in better psychological health. In conclusion, the study explains underlying psychological mechanisms connecting coronavirus stress to psychological health with the mediating effects of affective balance and mindfulness.

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CRediT Author Statement: FK, and BCK agreed jointly on setting the objectives of the research, how to collect the data and determine which analysis to apply. FK, and BCK played an active role in completing the study. While the FK worked to get the ethics committee approvals and the official permission work for the implementation of the scales, the FK and BCK conducted the data collection process. Examination of the suitability of the collected data for analysis was carried out by FK. The findings and discussion sections of the research were written by FK, NGK and BCK. The introduction and methodology parts were written by FK, NGK and BCK made proofreading of these parts.

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