



The Relationship of COVID-19 Student Stress with School Burnout, Depression and Subjective Well-Being: Adaptation of the COVID-19 Student Stress Scale into Turkish

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Abstract COVID-19 has caused psychological problems in all age groups since it emerged from the first day. One of the most important groups has been affected negatively during the COVID-19 pandemic process are university students. One of the negative situations caused by the pandemic process in university students is student stress caused by COVID-19. To assess stress situations in Italian culture, the COVID-19 student stress scale (CSS-S) has been developed. In this context, the aim of this study was to adapt the CSS-S into Turkish. Another aim of the study was to investigate the direct and indirect relationships of COVID-19 student stress with school burnout, depression and subjective well-being. The participants of the study were 485 Turkish university students. The values obtained with the confirmatory factor analysis revealed that the factor structure of CSS-S is satisfying ($\chi^2/df = 2.99$, AGFI = .95, TLI = .93, CFI = .96, IFI = .96, RMSEA = .06, SRMR = .04). Moreover, it was found that school burnout has a mediating role in the relationship between COVID-19 student stress and depression and subjective well-being ($\chi^2/df = 2.41$, AGFI = .87, TLI = .91, CFI = .91, IFI = .91, RMSEA = .05, SRMR = .05). These findings imply that psychosocial intervention studies to reduce COVID-19 student stress can reduce students' school burnout and depression. It also implies that these psychosocial intervention studies can have a positive impact on students' subjective well-being.

Keywords COVID-19 student stress · School burnout · Depression · Subjective well-being

Introduction

COVID-19 has caused serious problems on individual's psychological and mental health (Khattak et al., 2020; Usher et al., 2020; Cullen et al., 2020; Talevi et al., 2020). Factors such as the restrictions and measures taken due to the pandemic and the fear of catching COVID-19 have adversely affected individuals psychologically and spiritually (Chaturvedi, et al., 2021; Dubey et al., 2020; Gundogan, 2021; Son et al., 2020). The frequency of experiencing psychological problems such as depression, anxiety and stress has increased during the pandemic (Hao et al., 2020; Lebel et al., 2020; Shah et al., 2021; Soga et al., 2021). Students continuing their university education have also been adversely affected in this process and experienced different problems [for example, depression, stress, anxiety, fear, school burnout] (Copeland et al., 2021; Jiang, 2021; Li et al., 2021; Mong & Noguchi, 2021). In addition, the COVID-19 pandemic has negatively affected the happiness and well-being of individuals and made individuals feel uneasy (Kapoor et al., 2021; Paredes et al., 2021).

Scales have been developed to determine the psychological problems emerge during the COVID-19 pandemic and to take precautions. For example, the fear of COVID-19 scale (Ahorsu et al., 2020), the coronavirus anxiety scale (Lee, 2020), and the COVID-19 phobia scale (Arpaci et al., 2020) are some of the scales. The COVID-19 phobia scale (Arpaci et al., 2020) was developed in Turkish culture, and the fear of COVID-19 scale (Satıcı et al., 2020) and the coronavirus anxiety scale (Evren, et al., 2020; Karaahmet

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et al., 2021) were adapted to Turkish culture. In addition to these scales, the COVID-19 student stress scale (CSS-S) was developed on university students in Italy to determine student stress, which is one of the problems caused by the COVID-19 pandemic in students (Zurlo et al., 2020). Such a scale was also needed in Turkish culture to determine the stress that Turkish university students are experiencing as a result of COVID-19. Therefore, one of the purposes of this study is to adapt the CSS-S to Turkish culture.

It has been reported in previous studies that the stress of COVID-19 have negative effects on both mental health and academic processes of students (Husky et al., 2020; Yang et al., 2021; Ye et al., 2020). It has been stated that the stress caused by COVID-19 in university students during the pandemic causes school burnout (Vu & Bosmans, 2021) and depression (Rehman et al., 2021), and negatively affects students' subjective well-being (Arslan & Allen, 2021). In this context, the other aim of this study is to holistically investigate the direct and indirect relationships between COVID-19 student stress and the school burnout, depression and subjective well-being variables with the structural equation modelling (SEM) analysis.

Theoretical Background and Hypotheses

Stress is a situation that causes pressure on individuals and pushes them into a distressed mood (Ensel & Lin, 1991; Hobfoll, 2001). According to Selye (1973), negative situations that people face cause stress, and this stressful mood causes many physical and mental problems. According to Lazarus' (1993) psychological stress theory, there are two concepts at the centre of the concept of stress: (a) the individual's evaluation and coping with what is happening for his/her own well-being, (b) the individual's efforts to think and act to manage certain external demands. Seen from this perspective, an external negativity or demand triggers the stress of the individual and causes him/her to experience more intense stress.

The COVID-19 pandemic has adversely affected many areas, including health care, social and economic activities (McBride et al., 2021). In addition, it has caused serious negative effects on the mental health of individuals (Arpaci et al., 2021; Cullen et al., 2020; Dubey et al., 2020; Hao et al., 2020; Zhai & Du, 2020). Stress is one of the negative mental states that individuals experienced during the COVID-19 pandemic (Babore et al., 2020; Kar et al., 2021; Gallagher et al., 2021). It has been reported that one of the problems caused by the stressful mood in students in this process is depression (Rehman et al., 2021; Salari et al., 2020). In this context, COVID-19 student stress triggered students' depression even more. Previous studies have also concluded that stress increases depression and is a positive

predictor of it (Ang & Huan, 2006; Lee & Kim, 2016). Therefore, the first hypothesis is as follows:

COVID-19 student stress is a positive predictor of depression (Hypothesis-1).

The COVID-19 pandemic has also negatively affected the well-being of individuals (Gundogan, 2021; Möhring et al., 2021; Paredes et al., 2021). The stress experienced by students due to the COVID-19 pandemic has led to a restless and unhappy mood (Droit-Volet et al., 2020). In previous studies, it was concluded that the stress experienced by students during the pandemic process negatively affects their subjective well-being and life satisfaction (Arslan & Allen, 2021; Arslan & Yıldırım, 2021; Krok et al., 2021). Therefore, the second hypothesis is as follows:

COVID-19 student stress is a negative predictor of subjective well-being (Hypothesis-2).

One of the situations that the COVID-19 pandemic has negatively affected is the education processes. Because of the pandemic process university students experience a stressful and anxious process for over a year and the time face to face education will begin is still unclear (Hoyt et al., 2021). Therefore, university students experience indifference and boredom towards their education process (Charles et al., 2021; Debowska et al., 2020). As a result, when all these situations are evaluated together, it is thought that COVID-19 student stress triggers and increases school burnout. In this regard, previous studies have concluded that stressful living conditions during the COVID-19 pandemic increase school burnout in students (Fernández-Castillo, 2021; Jiang, 2021; Vu & Bosmans, 2021; Wang et al., 2021). In addition, studies conducted before the start of the COVID-19 pandemic found that stress is a positive predictor of school burnout (Backovic et al., 2012; Lin & Huang, 2014; Yan et al., 2018). Therefore, the third hypothesis is as follows:

COVID-19 student stress is a positive predictor of school burnout (Hypothesis-3).

One of the negative situations experienced by students during the education process is school burnout (Parker & Salmela-Aro, 2011; Salmela-Aro & Upadyaya, 2020; Salmela-Aro et al., 2008). The school burnout is considered as the student's sense of tiredness towards the school or the academic processes (Salmela-Aro et al., 2009, 2016; Walburg, 2014). According to the demands resources model, which tries to explain school burnout, demands cause school burnout in students and intense demands increase the frequency of this situation (Salmela-Aro & Upadyaya, 2014). In this context, it can be considered that transition to distance education increased the expectations from the university students, so school burnout has increased amongst them (Wang

et al., 2021). It is stated that the school burnout experienced by students may lead to more psychological problems for them (Tang et al., 2021). Previous studies have concluded that school burnout triggers depression and is a positive predictor of depression (Fiorilli et al., 2017; May et al., 2015; Salmela-Aro et al., 2017). Therefore, the fourth hypothesis is as follows: School burnout is a positive predictor of depression (Hypothesis-4).

In addition, school burnout causes negative effects on students' well-being (Çapri et al., 2013; Murdock, 2013). Previous studies have found that school burnout is a negative predictor of subjective well-being (Raiziene et al., 2014; Cazan & Năstăsă, 2015; Ríos-Risquez et al., 2018). Therefore, the fifth hypothesis is as follows:

School burnout is a negative predictor of subjective well-being (Hypothesis-5).

The Present Study

There are scales developed in Turkish culture (Arpaci et al., 2020) or adapted to Turkish culture (Evren et al., 2020; Karaahmet et al., 2021; Satici, et al., 2020) to measure the mental health effects of COVID-19. However, there is no CSS-S in Turkish culture that will measure the stress, which is another mental health effect of COVID-19 and negatively affects students. Therefore, the first purpose of the this study is to adapt the CSS-S to Turkish culture, which was developed by Zurlo et al. (2020) in the Italian culture and permission was obtained for adaptation via e-mail.

The second purpose of the study is to examine the relationship of COVID-19 student stress, which is seen during the pandemic in university students, with school burnout, depression and subjective well-being. Accordingly, it is aimed to examine the relationships between COVID-19 student stress, school burnout, depression and subjective well-being holistically with SEM analysis and to examine the direct and indirect relationships between these variables. In this context, the main hypothesis of the study is "School burnout has mediating role in the relationships between COVID-19 student stress and depression and subjective well-being" (Hypothesis-6) (Fig. 1).

Method

Participants

The participants of this study were 485 university students from graduate and postgraduate schools in various universities in Turkey, who were in the age group of 18–36

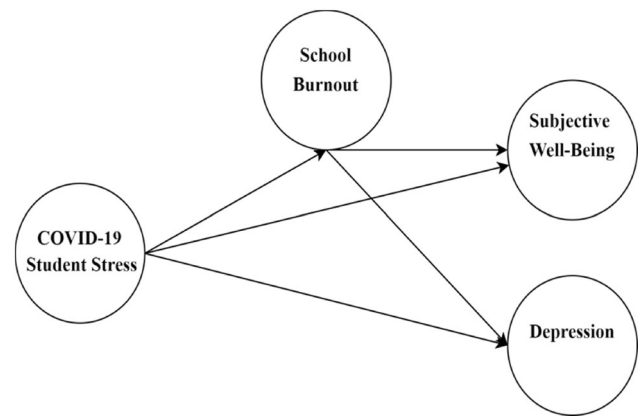


Fig. 1 SEM model

($M = 23.18$, $SD 4.67$). The participants were selected with the convenience sampling method and they completed all the scales in the online data collection form. Demographic features of the participants are given in Table 1.

Measures

COVID-19 Student Stress Scale

The CSS-S is a scale developed in Italian culture by Zurlo et al. (2020) to measure the stress in students as a result of the COVID-19 pandemic. The scale is a Likert-type scale consisted of 7 items. The scale consists of three factors (relationships and academic life, isolation and fear of contagion). The fit values of the scale were found to be good ($\chi^2/df = 0.56$; $CFI = 0.95$; $TLI = 0.95$; $RMSEA = 0.06$). Its Cronbach's alpha coefficient was found to be .71. In this study, the Cronbach's alpha coefficient was found to be .76. Within the scope of this study, the scale was adapted to Turkish culture by conducting explanatory factor analysis (EFA) and confirmatory factor analysis (CFA). In this study, the single-factor structure of the scale gave a better fit.

Maslach Burnout Inventory-Student Form

The Maslach Burnout Inventory-Student Form (MBI-SS) was developed by Schaufeli et al. (2002) to assess the school burnout of university students, and adapted to Turkish culture by Çapri et al. (2011). The scale is a Likert type scale consisted of 13 items and 3 factors: "exhaustion (5 items)", "cynicism (4 items)" and "efficacy (4 items)". The items in the exhaustion and depersonalization subscale are scored normally, whilst the items in the competence subscale are reversing scored. The fit values of the scale adapted to Turkish culture were found to be good ($\chi^2/df = 2.87$; $RMSEA, .049$; $TLI = .97$; $CFI = .98$; $GFI =$

Table 1 Characteristics of the participants

Variable	Value	<i>n</i>	%
Gender	Female	361	74.5
	Male	119	24.5
	Other	5	1
Diagnosed with COVID-19	Yes	113	23.3
	No	372	76.7
Education	Undergraduate	390	80.4
	Postgraduate	95	19.6
Total		485	100

.97; AGFI = .95; SRMR = .037). In the adaptation study, the Cronbach's alpha value of the scale was found to be .76 for the first sub-factor, .82 for the second sub-factor, and .61 for the third sub-factor. In this study, the Cronbach's alpha value of the scale was found to be .91. Moreover, CFA of the scale was also conducted in this study (Table 4).

DSM-5 Depression Scale

DSM-5 Depression Scale (DDS) is a scale developed to measure the severity of depression according to the DSM-5 criteria (APA, 2013). The adaptation study of the Depression Scale to Turkish culture was carried out by Sücüllüoğlu-Dikici et al. (2017). The scale is a Likert type measurement tool consisted of 9 items. In the adaptation study of the scale, the internal consistency Cronbach's alpha coefficient was found to be 0.91, and the item-total score correlation coefficients were found to be in the range of 0.60–0.83. In this study, the Cronbach's alpha value was found to be .87. Moreover, CFA of the scale was also conducted in this study (Table 4).

Oxford Short Happiness Scale

The Oxford Short Happiness Scale (OSH-S) is a scale developed by Hills and Argyle (2002) to evaluate the happiness or subjective well-being of individuals. The adaptation study of the scale to Turkish culture was done by Doğan and Çötök (2011). The scale is a Likert type measurement tool consisted of 7 items. As a result of adaptation to Turkish culture, the fit values were found to be good ($\chi^2/df = 2.77$, AGFI = 0.93, GFI = 0.97, CFI = 0.95, NFI = 0.92, IFI = 0.95, RMSEA = 0.07). In the adaptation study of the scale, the internal consistency coefficient was found to be .74 and the test–retest reliability coefficient was found to be .85. In this study, the Cronbach's alpha value of the scale was found to be .78. Moreover, CFA of the scale was also conducted in this study (Table 4).

Procedure and Data Analysis

Data were collected online because of the interruption of education due to the pandemic and the transition to distance education, as well as the risk of transmission of the disease. The online data collection link was delivered to university students via various social media tools. Informed consent has been added to the beginning of the online data collection link. The study was conducted with 485 students who answered honestly and completely to the scales in the online data collection link.

In the analysis of the data, firstly outliers, normality, linearity, multicollinearity and singularity assumptions were checked. In addition, skewness and kurtosis values being between -1.5 and $+1.5$ was taken as the criterion for the determination of whether the data distributed normally (Tabachnick & Fidell, 2013). Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted for the adaptation of CSS-S. In the SEM analysis, the values given as the acceptable values in the literature were used to evaluate the fit; < 3 for χ^2/df ; $\geq .85$ for Adjusted Goodness of Fit Index (AGFI); $\geq .90$ for Comparative Fit Index (CFI), Tucker Lewis Index (TLI) and Incremental Fit Index (IFI); $\leq .08$ for root mean square error of approximation (REMSEA) and standardised root mean square residual (SRMR) (Kline, 2015; Schumacher & Lomax, 2004). In SEM analysis, it is suggested that CFA of the scales should be done and the measurement model should be tested before the model is tested (Kline, 2015). In this context, first the CFA of the scales was performed and the measurement model was tested, and then the mediation model was tested.

Whilst adapting the 7-item CSS-S, all items were translated into Turkish by two language experts. Then, a third linguist compared the two translations. For each item, the translation that best reflects the original meaning has been adopted. In the adaptation of the scale, no items were added or reduced from the scale. In the adaptation of the scale to Turkish culture, the single factor structure gave better adaptation.

Results

In this part of the study, the results related to the adaptation CSS-S and testing of the mediation model are given.

CSS-S Adaptation Study

It is suggested that confirmatory factor analysis should be performed first when adapting a scale (Çokluk et al., 2012). It is stated that if the CFA result does not show good fit values, it is necessary to perform EFA again (Çokluk et al., 2012, pp. 283–284). The new factor structure formed as a result of EFA should also be examined again for the values of compliance with CFA. In this context, CFA of the original three-dimensional form of the scale was performed and the fit values did not satisfy ($\chi^2/df = 5.36$, AGFI = .81, TLI = .81, CFI = .82, IFI = .82, REMSEA = .09, SRMR = .09). Therefore, EFA was performed again and single factor structure was obtained (Table 2). Then, CFA of this structure was performed (Fig. 2). The results are presented in Table 2 and Fig. 2.

As can be seen in Table 2, as a result of the exploratory factor analysis conducted for the adaptation of CSS-S to Turkish culture, a single factor structure explaining 41.83% of the total variance was obtained. Kaiser–Meyer–Olkin index was found to be .81 ($\chi^2 = 687.463$, $df = 21$, $p = .000$). The factor loadings of the CSS-S items ranged between .55 and .72, and the total correlation values between .39 and .56. The Cronbach's alpha value was found to be .76.

As can be seen in Fig. 2, as a result of the CFA conducted to determine whether the structure of the adapted scale was confirmed, the fit values of CSS-S were found to be as $\chi^2/df = 2.99$, AGFI = .95, TLI = .93, CFI = .96, IFI = .96, REMSEA = .06 and SRMR = .04. These values show that the fit indices obtained as a result of the adaptation of the scale meet the expected criteria (Kline, 2015; Schumacher & Lomax, 2004).

Testing of the Mediation Model

Preliminary Analysis

First of all, the binary correlations between the variables of the study were calculated. When Table 3 is examined, it is seen that there is a positive correlation between student stress and depression ($r = .46$; $p < .01$) and school burnout ($r = .39$; $p < .01$) and there is a negative correlation between student stress and subjective well-being ($r = .39$; $p < .01$). Moreover, there is a negative correlation between subjective well-being and school burnout ($r = -.55$; $p < .01$) and depression ($r = -.59$; $p < .01$) and there is a positive correlation between school burnout and depression ($r = .61$; $p < .01$). Since these correlation values were found to be lower than .85, it was concluded that there was no multicollinearity problem (Kline, 2015). It is seen that the skewness and kurtosis values are between -1.5 and $+1.5$ and the data show a normal distribution (Tabachnick & Fidell, 2013). In addition, COVID-19 student stress did not differ statistically in students with and without a diagnosis of COVID-19 ($t = 1.36$, $p > .05$). Therefore, mediation was tested in the same model for all participants.

When Table 4 is examined, it is seen that the CFA of the scales and the fit values of the measurement model meet the expected criteria (Kline, 2015; Schumacher & Lomax, 2004). In the next step, mediation analysis was performed using the AMOS (Ver. 21) programme to test the hypotheses. A bootstrapping procedure with 5000 bootstrapping samples and 95% confidence intervals was applied to test direct and indirect relationships. The results are presented in Table 5.

Table 5 shows that COVID-19 student stress is a positive predictor of depression ($\beta = .28$, $p < .001$, 95% CI [.18; .37], SE = 0.05) thus H1 is supported. COVID-19 student stress is seen to be a negative predictor of subjective well-being ($\beta = -.17$, $p < .01$, 95% CI [-.28; -.05], SE = .06) thus H2 is supported. It is seen that COVID-19 student stress is a positive predictor of school burnout ($\beta = .51$, $p < .001$, 95% CI [.41; .58],

Table 2 Statistics on the items of the CSS-S

	Factor loadings	Item-total correlation	Mean \pm SD	Skewness	Kurtosis
Item 1	.553	.390	1.78 \pm 1.20	.252	-.702
Item 2	.684	.528	2.12 \pm 1.17	-.088	-.823
Item 3	.650	.493	1.65 \pm 1.25	.223	-.961
Item 4	.676	.516	1.38 \pm 1.23	.529	-.713
Item 5	.722	.562	1.76 \pm 1.35	.254	-1.104
Item 6	.671	.508	2.50 \pm 1.33	-.443	-1.007
Item 7	.550	.394	1.07 \pm 1.38	.960	-.491

Fig. 2 Confirmatory factor analysis using structural equation modelling

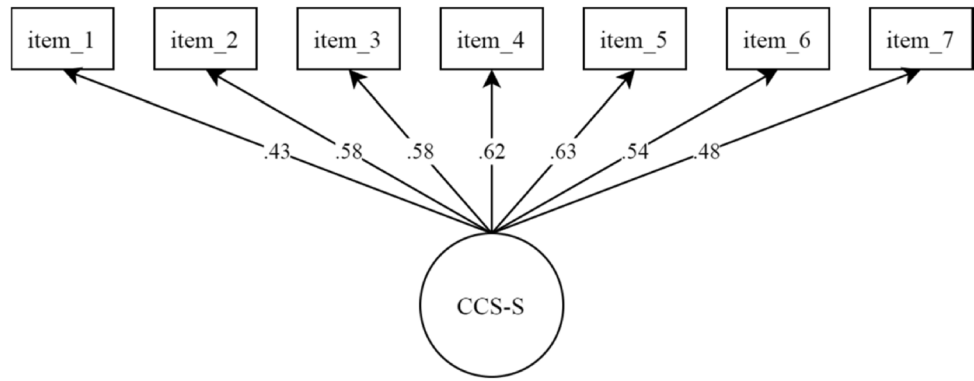


Table 3 Correlations, skewness, kurtosis, and reliability coefficients

	1	2	3	4
1. COVID-19 student stress	1			
2. School Burnout	.39**	1		
3. Depression	.46**	.61**	1	
4. Subjective well-being	-.35**	-.55**	-.59**	1
Mean	12.3	38.50	12.4	21.26
SD	5.76	11.04	6.35	5.06
Total variance explained	41.83%	61.49%	48.97%	46.39%
Skewness	.11	.06	.24	-.13
Kurtosis	-.36	-.84	-.78	-.24
Cronbach Alfa	.76	.91	.87	.78

***p* < .01

Table 4 CFAs of scales, measuring and structural model

Fit indices	CFAs of Scales				Measuring model	Structural model	Reference value(s)
	CSS-S	MBI-SS	DDS	OSH-S			
χ^2	35.90	152.19	54.74	31.32	710.02	696.39	
<i>p</i> value	< .001	< .001	< .001	< .001	< .001	< .001	
df	12	54	23	12	288	288	
χ^2/df	2.99	2.81	2.38	2.61	2.46	2.41	< 3
AGFI	.95	.92	.95	.95	.87	.87	≥ .85
TLI	.93	.96	.96	.96	.90	.91	≥ .90
CFI	.96	.97	.98	.98	.91	.91	≥ .90
IFI	.96	.97	.98	.98	.91	.91	≥ .90
RMSEA	.06	.06	.05	.06	.05	.05	≤ .08
SRMR	.04	.04	.03	.03	.05	.05	≤ .08

SE = .05) and thus H3 is supported. It is seen that school burnout is a positive predictor of depression ($\beta = .55$, $p < .001$, 95% CI [.47; .61], SE = .04) and thus H4 is supported. Also, that school burnout is a negative predictor of subjective well-being ($\beta = -.57$, $p < .01$, 95% CI [-.67; -.46], SE = .06) and thus H5 is supported.

In Fig. 3, the result of the mediation analysis regarding H6, which is the main hypothesis of the study, is given. As

a result of the mediation analysis, the model fit indices were found to be as follows; $\chi^2/df = 2.41$, AGFI = .87, TLI = .91, CFI = .91, IFI = .91, REMSEA = .05, SRMR = .05 and these values meet the expected criteria (Kline, 2015; Schumacher & Lomax, 2004). Accordingly, it can be suggested that school burnout has a partial mediating role in the relationship between COVID-19

Table 5 Standardized direct and indirect effects

	β	S.E	LCL	UCL	<i>p</i>
Standardized direct effects					
COVID-19 student stress → depression	.28	.05	.18	.37	***
COVID-19 student stress → subjective well-being	-.17	.06	-.28	-.05	**
COVID-19 student stress → school burnout	.51	.05	.41	.58	***
School burnout → depression	.55	.04	.47	.61	***
School burnout → subjective well-being	-.57	.06	-.67	-.46	***
Standardized indirect effect					
COVID-19 student stress → school burnout → depression	.28	.03	.22	.33	***
COVID-19 student stress → school burnout → subjective well-being	-.29	.04	-.35	-.22	***

S.E. standard error, LCL lower confidence limit, UCL upper confidence limit

p* < .01, *p* < .001

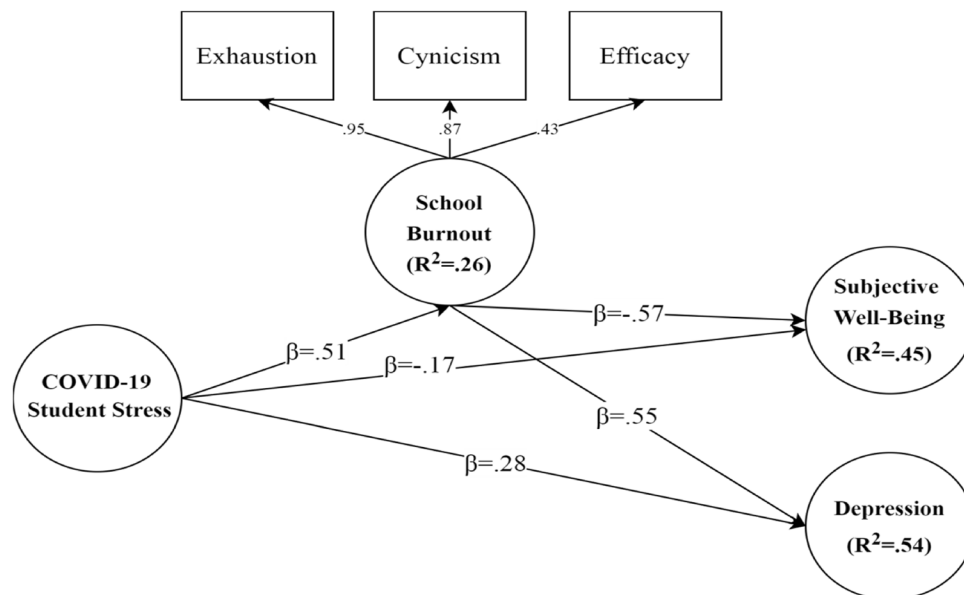


Fig. 3 The structural model

student stress, depression and subjective well-being. Thus, H6 is supported.

Discussion

COVID-19 pandemic not only threatening the physical health of the individuals, but also cause many negative effects on mental health (Cullen et al., 2020; Talevi et al., 2020). Therefore, scales have been developed to determine

the psychological problems in individuals during the COVID-19 pandemic (Ahorsu et al., 2020; Arpaci et al., 2020; Lee, 2020). In this context, CCS-S was developed to determine the stress in students (Zurlo et al., 2020). In this study, it was aimed to adapt this scale into Turkish. As a result of the EFA performed within the scope of the adaptation studies, a 7-item and single-factor structure was obtained. As a result of CFA conducted to examine whether this structure was confirmed, the fit values of the scale were found to be satisfactory. This study results showed

that, CSS-S is a reliable and valid scale to conduct scientific studies in Turkish culture. Also, the scale is a reliable and valid tool to determine stress experienced by the university students because of the COVID-19 pandemic.

The second purpose of the study was to examine the direct or indirect relationships between COVID-19 student stress and school burnout, depression and subjective well-being. In this context, the main hypothesis of the study was determined to be as “School burnout has mediating role in the relationships between COVID-19 student stress and depression and subjective well-being” and the other five hypotheses of the study were tested before this hypothesis. After testing the first five hypotheses of the study, the sixth hypothesis, which is the main hypothesis of the study, was tested.

The first hypothesis of this study “COVID-19 student stress is a positive predictor of depression” was supported. In this study, it was concluded that COVID-19 student stress has a positive effect on depression. It has been stated that stressful situations trigger depression (Ang & Huan, 2006; Lee & Kim, 2016). Thus, this finding of this study concurs with the findings reported in previous studies (Rehman et al., 2021; Salari et al., 2020). In addition, it is claimed that the stressful mood that occurs intensely in students during the COVID-19 pandemic causes serious negative psychological problems (Babore et al., 2020; Kar et al., 2021; Rehman et al., 2021). Accordingly, the results of this study show that this is the case. Like results of this study the results of the previous studies showed that stressful mood experienced by students during the COVID-19 pandemic further triggers depression.

The second hypothesis of this study “COVID-19 student stress is a negative predictor of subjective well-being” was supported. Results showed that, COVID-19 student stress has a negative effect on subjective well-being. Since the pandemic process has seriously shaken individuals psychologically, their well-being has also been seriously affected (Gundogan, 2021; Paredes et al., 2021). This situation, led to such a conclusion in this study. Similarly previous studies in the literature stated that negative mental states such as depression, anxiety, fear and stress experienced by individuals in the COVID-19 pandemic also negatively affect their subjective well-being (Droit-Volet et al., 2020; Paredes et al., 2021). In addition, in previous studies, it has been concluded that the stress during the COVID-19 pandemic negatively affects the subjective well-being of individuals (Arslan & Allen, 2021; Arslan & Yildirim, 2021; Krok et al., 2021). Thus, it can be stated that the finding in this study is consistent with the previous findings.

The third hypothesis of this study “COVID-19 student stress is a positive predictor of school burnout” was supported. In this study, it was concluded that COVID-19

student stress has a positive effect on school burnout. The COVID-19 pandemic has led students to experience more burnout (Charles et al., 2021; Debowska et al., 2020). Due to the COVID-19 pandemic, the feeling of exhaustion occurred as a result of the uncertainty of the students’ school processes (Hoyt et al., 2021). Accordingly, the result of this study shows that this is the case with students. Also, this result of this study concurs with the findings of the previous studies (Fernández-Castillo, 2021; Jiang, 2021; Vu & Bosmans, 2021; Wang et al., 2021).

The fourth hypothesis of this study “School burnout is a positive predictor of depression” was supported. In this study, it was concluded that school burnout has a positive effect on depression. Since school burnout wears out individuals a lot, its psychological consequences are also negative (Salmela-Aro & Upadyaya, 2014; Tang et al., 2021). As a result, the result of this study also revealed this. In addition, individuals have been affected more negatively as they experience more school burnout during the pandemic. Also, this finding in the study is consistent with the findings in previous studies (Fiorilli et al., 2017; May et al., 2015; Salmela-Aro et al., 2017). Both this study and previous study findings show that school burnout further triggers individuals’ depression.

Moreover, the fifth hypothesis of this study “School burnout is a negative predictor of subjective well-being” was supported. In this study, it was concluded that school burnout has a negative effect on subjective well-being. Since school burnout is a negative situation experienced by individuals, it also negatively affects their well-being (Çapri et al., 2013; Murdock, 2013). Ultimately, the result of this study revealed that. This finding of the study is consistent with the findings of previous studies (Raiziene et al., 2014; Cazan & Năstasă, 2015; Ríos-Risquez et al., 2018). The results of this study and previous studies show that school burnout experienced by students negatively affects their subjective well-being and causes students to feel uneasy.

The sixth hypothesis of this study “School burnout have mediating role in the relationships between COVID-19 student stress and depression and subjective well-being” was supported. In this study, it was concluded that COVID-19 stress has a direct effect on depression and subjective well-being, as well as an indirect effect through school burnout. According to this result, it can be stated that COVID-19 student stress causes school burnout in students; school burnout triggers students’ depression and negatively affects their subjective well-being. It has been seen that there is no study finding directly supporting this result in the relevant literature. However, it was stated that the stress experienced by students during the COVID-19 pandemic process further triggered their school burnout (Jiang, 2021; Wang et al., 2021). In addition, it was

suggested that the school burnout situation experienced in this process caused more adverse effects on the mental status of students (Stacey et al., 2020). Finally, in this study, it was found that the stress caused by COVID-19 in students caused more school burnout in students. This situation reflects negatively on students mentally. As a result, students' depression increases and their subjective well-being are negatively affected.

The results of this study showed that the stress seen in students during the COVID-19 pandemic caused students to experience school burnout and depression, and negatively affected their subjective well-being. In this context, this process has had negative effects on the psychological health of students. Thus, students should be offered face-to-face or online psychological counselling services. Professional psychological support and assistance should be provided to students who are determined to have serious psychological problems due to stressful and anxious situations in this process. In addition, when face-to-face education starts at universities, psychological support units should be established and psychological support should be provided for students at universities.

This study has some limitations as well as reaching important findings that will contribute to the literature. The first limitation of the study is that the participants are university students who are continuing their education at undergraduate or graduate level, and that the majority of them are in the young adult group. Given that stressful situations caused by the COVID-19 pandemic in students of all age groups, this limitation can be reduced by collecting data from high school students in further studies and expanding the age range of the participants. Second, the data in this study were collected only with self-report scales. In further studies, this limitation can be reduced by collecting data with methods such as observation and interview in addition to self-report scales. A third limitation is that this study was conducted only on Turkish university students in Turkey. This limitation can be reduced by collecting data from participants from different countries and ethnicities.

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Data Availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of interest The authors declared no conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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