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RESEARCH ARTICLE

Moderator effect of COVID-19 fear on "mediating role of boredom proneness in relationship between internet addiction and DASS-21"

Halim Guner

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CORRESPONDENCE
Halim Guner
h.guner@alparslan.edu.tr
Department of Educational Sciences, Faculty of Education, Mus Alparslan University, 49000, Mus, Turkey.

AUTHOR DETAILS
Additional information about the authors is available at the end of the article.

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ABSTRACT

Background/purpose – COVID-19 emerged at a time when many different psychological factors can negatively affect the human psychology, and thereby making life even more difficult over and above the physical health impact. As known, with the development of modern-day technology, Internet usage has become a part of everyday life. However, this situation often brings about the problem of Internet addiction. A positive relationship is known to exist between Internet addiction and psychological problems. This study aims to examine the moderator effect of COVID-19 fear on the "mediating role of boredom proneness in relationship between internet addiction and DASS-21."

Materials/methods – In the current study, the effect of boredom proneness in this relationship was examined through the mediator effect of boredom proneness in the relationship between Internet addiction and the "Depression, stress and anxiety scale" DASS-21. Then, the moderator effect of the fear of COVID-19 was examined on the mediator role, which constitutes the main purpose of this research. For these purposes, 560 students studying at the undergraduate level at state universities in Turkey were reached as a sample. In the analysis of the collected data; parametric tests, correlation test, structural equation model, and moderator analysis were employed.

Results – In the model in which the moderator effect of COVID-19 fear was examined; it appears that fear of COVID-19 increases the relationship between Internet addiction and boredom proneness. It also increases the relationship between boredom proneness and DASS-21. However, no significant moderator effect was found to exist in the relationship between Internet addiction and DASS-21.

Conclusion – This study shows that the fear of COVID-19 has a significant effect on Internet addiction, boredom proneness, and psychological problems. This research was conducted based on the analysis of certain variables, presentation of the results and their subsequent discussion, and the putting forward of various suggestions.

Keywords – Fear of COVID-19, DASS-21, internet addiction, boredom proneness, moderator, mediator.

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1. INTRODUCTION

It is known that with today's developing technologies, significant convenience is afforded in daily life. However, along with these technological facilities, it has been seen that significant issues have inevitably arisen. In particular, it supports the thesis that Internet users use the Internet for too long, preventing them from carrying out their responsibilities as individuals (Pontes et al., 2015). Unfortunately, due to Internet addiction in certain individuals, significant problems are seen that disrupt the normal flow of life, and these are continuing to increase. Lately, numerous technological developments have been seen, especially in terms of Internet networks. The digital revolution that came with this development has significantly affected and changed the way people communicate with each other, and also in their socialization processes. Technology constitutes the central point in the lives of many young adults, especially those who have grown up with technology from birth. Known as the Z-generation, these individuals are highly affected by technological developments. However, it is known that parents have little control over individuals in this generation and, with the Internet used continuously, Internet addiction occurs as a result of its overuse (Aruna & Santhi, 2015). Also, Kuss et al. (2014) stated that it is difficult to distinguish between functional Internet use and addiction, as Internet use is a part of the daily lives of young people.

Internet usage enables people to experience different virtual experiences through numerous communication channels. Internet usage is also increasing, especially with the ubiquitous spread of social media applications such as Facebook, Twitter, Instagram, and Tiktok. These social media applications are virtual platforms that allow individuals to interact with their friends and other people through personal accounts (Wilson et al., 2010, p. 173). With the ever-increasing use of social media, it has begun to be referred to as the "global consumer phenomenon" (Kuss & Griffiths, 2011, p. 3528). Looking at the literature in this area, it can be seen that social media offers young people many opportunities such as ease of access to information, as well as to entertainment and for the purposes of social interaction (Kahne et al., 2013; Muscanell & Guadagno, 2012). However, it is known that some young people also exhibit signs of virtual (online) gaming addiction by spending much of their day playing virtual games.

With this increasing Internet use, various psychological problems have inevitably emerged. Therefore, a few important points on this are discussed in the current study. First, a model is examined on how boredom affects the psychological problems caused by long-term Internet usage. Then, a second model examines the moderator effect of the fear of COVID-19 on this model. Since many young individuals who use the Internet for long periods of time are expected to use the Internet more during the pandemic, this situation is considered to be worthy of investigation. In this context, the literature published in this area is examined where the research utilized the variables explored in the current research.

Internet addiction, stress, depression, anxiety

With the Internet having become a part of everyday life, there has been a marked increase in the number of studies that have examined the effects of Internet use (Pontes et al., 2015). The effect of internet use, especially among young people, has attracted the attention of researchers in fields such as psychology, education, sociology, and communication.

Christakis (2010) stated that Internet addiction caused by intensive Internet usage is a phenomenon now accepted by social and behavioral scientists, and that it has brought about

various psychological problems (Demir & Kutlu, 2018; Smahel et al., 2012). The main reason for this is that young people spend much of their time using the Internet (Valkenburg & Peter, 2007). Internet addiction is generally expressed as the failure to control Internet use, and as a result, it is stated that psychological problems are being triggered (Pontes et al., 2015). Researchers examining which psychological problems Internet addiction relates to have found various problems such as social isolation, anxiety, psychological dependence, loss of control, and withdrawal symptoms (Widyanto et al., 2007). Valkenburg and Peter (2011) stated that Internet addiction distracts individuals from social communication and as a result, the individual's psychological health is negatively affected. Likewise, Alavi et al. (2010) concluded that excessive Internet use is positively associated with depression and anxiety. Numerous studies have shown that Internet addiction has significant negative effects on psychological health, and that there is a relationship between Internet addiction and depression and social anxiety (Lee & Leeson, 2015). Internet addiction has been shown to increase anxiety (Weinstein et al., 2015), whilst Internet and Facebook addiction can increase symptoms of depression (Hong et al., 2014). Many studies have explained that Internet addiction increases levels of loneliness (Yao & Zhong, 2014), and that Internet addiction positively relates to depression, anxiety, and stress.

Boredom proneness & internet: the mediator role of boredom proneness

When the literature is examined, it can be seen that numerous studies have examined the relationship between Internet addiction and psychological problems. Similarly, the relationships of boredom with both Internet addiction and psychological problems have also been studied by researchers. Internet addiction has significant negative effects on both physical and mental health, and also on social communication (Young, 1998). At the same time, it has been concluded that Internet addiction causes attention deficit in young individuals (Bozkurt et al., 2013; Yen et al., 2007). Therefore, it may be said that Internet addiction creates psychological problems that are difficult to resolve, especially in young individuals.

It is therefore of significant importance to identify the factors that cause such issues in order to address the problem. One such issue is thought to be boredom, which is often very common in young people, and affects them both physiologically and psychologically (Biolcati et al., 2018). However, in individuals with intense issues of boredom; social communication also causes responsibility issues and personal problems (Martin et al., 2012). Similarly, it is stated that boredom occurs as a result of insufficient stimulation and dissatisfaction (Mikulas & Vodanovich, 1993). It is stated that the self-differentiation of individuals decreases with boredom and as a result, monotony emerges (Perkins & Hill, 1985). It has been concluded, therefore, that boredom causes significant negative effects on interpersonal relationships (Vodanovich, 2003). However, boredom is also one of the important causes of addictive substance abuse (Samuels & Samuels, 1974). In studies conducted on young individuals, it has been stated that there exists an important relationship between boredom and Internet addiction and as a result, functional disorders occur in young people (Li et al., 2015; Nichols & Nicki, 2004; Rotunda et al., 2003). It is also stated that boredom triggers online gambling among young individuals (Goldstein et al., 2016). Looking at all of these results, it can be concluded that Internet addiction triggers various psychological problems. At the same time, it is understood that boredom triggers Internet addiction and therefore indirectly causes psychological problems. Therefore, the first hypothesis of the current study aims to examine the mediating effect of the boredom variable in the relationship between Internet addiction and depression, stress, and anxiety.

Hypothesis 1: Boredom proneness has a mediating role in the relationship between Internet addiction and depression, stress, and anxiety.

Fear of COVID-19: the moderator effect fear of COVID-19

COVID-19, which has increasingly impacted much of the world since its discovery, seriously affects both social life and individual life. Social lives have been largely restricted and communication provided predominantly through virtual means, which has exacerbated Internet use. However, the limited social lives of Internet addicted individuals have become even more restricted. Due to this situation, Internet addiction is expected to increase even more due to the pandemic. As a result, the emergence of various psychological problems is deemed inevitable, as important psychological problems are known to arise during and after a pandemic (Karakose & Malkoc, 2021a; Lam et al., 2009). These problems can physically and psychologically affect society and individuals, with former living standards often facing severe restrictions (Sheridan et al., 2020).

Therefore, COVID-19 has triggered the emergence of various psychological problems such as anxiety, depression, stress, and sleep-related disorders (Karakose & Malkoc, 2021b; Koçak et al., 2021). Phelps and Sperry (2020) stated that social isolation that occurs during a pandemic increases depression situations. According to research published during the COVID-19 pandemic, the process has had proven negative psychological and economic effects (Flanagan et al., 2021), resulting in increased instances of depression, anxiety, health anxiety, and social loneliness (Okuhara et al., 2020). When the negative effects of the pandemic are examined, evidence has shown increased levels of panic and anxiety having been observed (Van Bavel et al., 2020). However, it is understood that individuals also have a significant fear of contracting the COVID virus (Hatun et al., 2020; Karakose et al., 2021), and increased levels of depression, anxiety, and stress-related situations have been observed due to fear of the disease (Guan et al., 2020). Looking at the results of the published research, it is understood that there has been an increase in various psychological problems along with both fear and anxiety that have occurred as part of the COVID-19 process.

Therefore, it is considered important to examine whether or not COVID-19 anxiety has a moderator effect on the relationship between Internet addiction and depression, anxiety, stress, and boredom. This situation constitutes the second hypothesis of the current study, and forms the main purpose of this research.

Hypothesis 2: COVID-19 fear has a moderator effect on the "mediating role of boredom proneness in relationship between internet addiction and DASS-21."

This study aims to fill a gap in the literature by examining the moderator effect of COVID-19 fear on the "mediating role of boredom proneness in relationship between Internet addiction and DASS-21." When the studies conducted with the emergence of COVID-19 are examined, it can be seen that various studies have been conducted that have examined the relationship between COVID-19 and various psychological problems (Flanagan et al., 2021; Koçak et al., 2021; Lam et al., 2009; Okuhara et al., 2020; Phelps & Sperry, 2020; Sheridan et al., 2020; Van Bavel et al., 2020).

However, in terms of the fear of COVID-19, no studies have been published that have examined the moderator effect on the mediating role of boredom proneness in the relationship between Internet addiction and depression, anxiety, and stress. Therefore, in order to achieve the main purpose of the current study, intermediary role research was conducted as a preliminary issue. Accordingly, the mediating role of boredom proneness in

the relationship between Internet addiction and depression, anxiety, and stress was examined first. After this model was verified, the main model of the study was examined, which looks at the moderator effect of COVID-19 fear on the three relationships. Based on these two models, two important assumptions were made in this study. First, in the relationship between Internet addiction and depression, anxiety, and stress, boredom proneness was assumed to have a mediating role. Second, in the relationship between Internet addiction and depression, anxiety, and stress, the moderator effect of COVID-19 fear was assumed to have a mediating role on boredom disposition.

2. METHODOLOGY

2.1. Research model

The current research was based on a relational survey model in which a structural equation model was used to determine the moderator effect of a different variable on the relationship between three other variables. Creswell (2017) explained the relational survey model as a model that defines and determines the pattern (relationship) between two or more variables, the degree of the existing relationship between variables, and the state and change of variables that affect each other.

DASS-21 (Depression, Anxiety, and Stress), Internet addiction, boredom proneness, and fear of COVID-19 scales were used within the scope of the study. In the first model, the mediating role effect of boredom proneness in the relationship between Internet addiction and DASS-21 was examined, whilst in the second model, the moderator effect of the fear of COVID-19 variable was examined. Hayes' moderator model was employed in the moderation analysis (Hayes, 2018).

2.2. Participants

The research population comprises state university students enrolled in any undergraduate program during the 2020-2021 academic year. The research sample was comprised of 560 students who were each considered available and therefore convenient. Of the participants, 290 (51.8%) are female and 270 (48.2%) are male. Information on this and the other demographic variables of the study group are presented in Table 1.

Table 1. Frequency and percentage of participants' demographic variables

Variables	Groups	*f*	%
Gender	Female	290	51.8
	Male	270	48.2
Grade	1st	232	41.4
	2nd	132	23.6
	3rd	106	18.9
	4th	28	5.0
	Other	62	11.1
Living place	Village	50	8.9
	Town	28	5.0
	District	88	15.7
	Province	194	34.6
	Metropolis	200	35.7
Total	Total	560	100.0

2.3. Instruments

The following scales were used to collect the study's data: DASS-21, Internet Addiction Scale, Boredom Proneness Scale, and Fear of COVID-19 Scale.

DASS-21 was developed by Lovibond and Lovibond (1995), and subsequently adapted to the Turkish context by Sarıçam (2018). Henry and Crawford (2005) showed the Cronbach's alpha internal consistency reliability coefficient value to be .88 for the Depression subscale, .90 for the Stress subscale, and .93 for the whole scale. According to the same study, the fit index values of the DASS-21 model developed by Lovibond and Lovibond (1995) were S-Bχ^2 = 628.0, $\chi2$ = 1092.1, *df* = 180, RCFI = .93, SRMR = .03, and RMSEA = .05 (Henry & Crawford, 2005).

The *Internet Addiction Scale* was developed by Taş (2019), and encompasses a single-factor structure that explains the scale to almost 40% (39.901%). The KMO (Kaiser-Meyer-Olkin) value of the scale was found to be .820, whilst Bartlett's Sphericity test was found to be χ^2 = 850.521, *p* = .000. It was determined that the factor common variances of the scale items were between .300 and .500, and the item factor loads ranged from .548 to .707. The fit indices (χ^2 / *df* = 1.984, RMR = .028, GFI = .95, AGFI = .91, CFI = .93, and RMSEA = .068) obtained at the end of the CFA were found to be sufficient for the validation of the model. It was also seen that the scale item-total correlation was in the range of .427-.587, the test-retest correlation coefficient of a 1-month interval was *r* = .72, the Cronbach's alpha internal consistency coefficient was .81, and the results of the *t*-test were significant for the lower and upper 27% groups.

Boredom Proneness Scale was developed by Struk et al. (2015) and adapted to the Turkish context by Güner et al. (2021). The short version of the seven-item Boredom proneness scale was adapted to Turkish. For construct validity, exploratory factor analysis (EFA) was performed with the data collected from 495 university students and confirmatory factor analysis (CFA) was performed with the data collected from 251 students. Significant and sufficient results were obtained in both analyses. For the reliability of the adapted scale, the Cronbach's alpha value and the discrimination feature of the lower and upper 27% slices were examined. As a result of the analysis, the Cronbach's alpha (α = .91) and a meaningful *t*-test value was obtained.

The *Fear of COVID-19 Scale* was developed by Ahorsu et al. (2020), and then adapted to the Turkish context by Bakioğlu et al. (2020) as a seven item, one-dimensional scale. It has a 5-point, Likert-type rating system, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Item factor loads of the original scale ranged from .66 to .74, whilst item-total correlations varied between .47 and .56. The Cronbach's alpha internal consistency coefficient of the scale was found to be .82. A positive and significant correlation was found to exist between the total scale score and depression (*r* = .43), anxiety (*r* = .51), perceived infectability (*r* = .48), and germ aversion (*r* = .46).

2.4. Procedure

First, permission was taken from the relevant authorities of the universities where the participating students were enrolled. Then, the research data were collected from students attending İstanbul Marmara, Muş Alparslan, and Fırat Universities during the 2020-2021 academic year. Thus, the convenience sampling method was employed. The participating students were each informed about the nature and process of the study. The students took part in the study voluntarily, which they each confirmed via a written informed consent form

upon which the study purpose and assurance of confidentiality was detailed. During the research, data were collected from students from the faculties of education, theology, and technology. In the next step, the participant students completed paper and pen format scales during their class time. This procedure lasted for a period of approximately 15 minutes. The study was based on a cross-sectional design, and included correlation and simple mediator models.

2.5. Data analysis

Following the data collection, potential errors were checked, and then missing value and outlier analyses were performed. Missing values were determined by eliminating incomplete participant data for each scale, and the mean score of these data was then determined by using the series mean method. *Z*-scores were calculated for each continuous variable in order to determine the outliers. Once the data was prepared, analysis was conducted for *t*-tests, then the correlation analysis was performed in order to detect the relationships between the variables by using IBM's SPSS 25 package program. Finally, the Amos 24 package program was applied for the simple mediation analysis so as to test the mediation effect. In the analysis, the 2000 bootstrap sampling was utilized, with estimations evaluated according to a 95% confidence interval that was free of bias, which then produced the results to the desired level of accuracy.

3. RESULTS

3.1. Parametric tests and relationships between variables

Although the main purpose of this research was to examine the effect of Fear of COVID-19 on the moderating role model, some parametric test analyses from the collected data within the research are also included in the findings as the researchers considered these results to also be of relevant importance to the study. Therefore, first, the results from the independent groups *t*-test and ANOVA tests, which were regarded as important, are briefly mentioned, and then the moderator role effect findings are given. In the analysis performed for the Gender variable, it was found that the COVID-19 fear scores of males were significantly higher compared to females ($p < .001$). No difference was found between any of the other variables. Another interesting result of the study was that the scores of those participants living in villages for Fear of COVID-19, Internet addiction, and Boredom proneness were found to be higher than those living in other settlement types ($F_{Covid-19} = 3.39$; $F_{Internet} = 3.904$; $F_{Boredom} = 3.657$; $p < .005$).

3.2. Relationship between internet addiction and DASS-21

In Table 2, the arithmetic average, Cronbach's Alpha internal consistency coefficients, and correlation values between the variables used in the study are presented. When the internal consistency coefficients are examined, it can be seen that the data from the completed scales used in the research were at a sufficient level.

However, various conditions must be met in order to test the mediator variables (Shrout & Bolger, 2002; Tingley et al., 2014):

-Relationships between dependent and independent variables should be meaningful.

-The mediator variable should reduce the relationship between the dependent and independent variable either completely or partially.

It was found that the data variables were significantly correlated to each other, with positive correlations found between the variables as follows: Internet addiction and DASS-21 ($r = .549$; $p < .001$), Internet addiction and Boredom proneness ($r = .586$; $p < .001$), Internet

addiction and Fear of COVID-19 (r = .248, p < .001), Fear of COVID-19 and DASS-21 (r = .445; p < .001), Fear of COVID-19 and Boredom proneness (r = .319; p < .001), and DASS-21 and Boredom proneness (r = .695; p < .001). According to the results revealed from the analysis, the variables were found to be suitable for mediator role research.

Table 2. Inter-variables correlation, arithmetic averages, and internal consistency coefficients of variables

Variables	*N*	*X*	Cronbach's Alpha	1	3	3	4
1. Fear of COVID-19	560	18.43	.875	1	.445**	.248**	.319**
2. DASS-21	560	37.40	.932	.445**	1	.549**	.695**
3. Internet addiction	560	22.26	.859	.248**	.549**	1	.586**
4. Boredom proneness	560	21.95	.907	.319**	.695**	.586**	1

**p < .001

3.3. Results regarding the mediating model

Another aim of the study was to examine the mediator effect of Boredom proneness variable in the relationship between Internet addiction and DASS-21. Therefore, first, the model between Internet addiction and DASS-21 was examined (Model 1); then, analyses were conducted on Model 1 in which the mediating role effect of the Boredom proneness variable in this relationship was examined (see Figure 1).

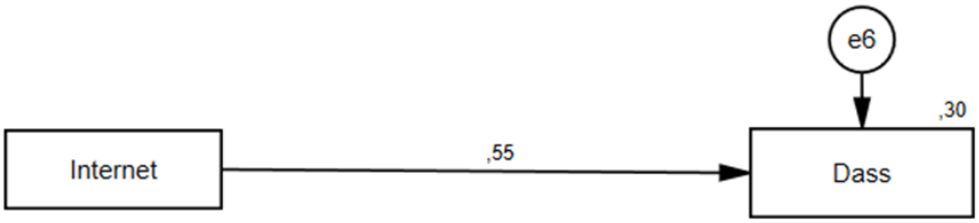

Figure 1. Structural model of relationship between internet addiction and DASS-21-*Model 1*

From looking at Figure 1, it can be seen that a positive and significant relationship was found to exist between Internet addiction and DASS-21 (r = .55; p < .001). In other words, the Internet addiction variable predicted the DASS-21 variable positively by 30%. According to this result, as Internet addiction increases, DASS-21 also increases; and the opposite logic is also considered true.

Following this result, the Boredom proneness variable was added to Model 1 and a new second model (Model 2) was tested in order to see what kind of change or affect the addition of the Boredom proneness variable had on the results obtained from Model 1.

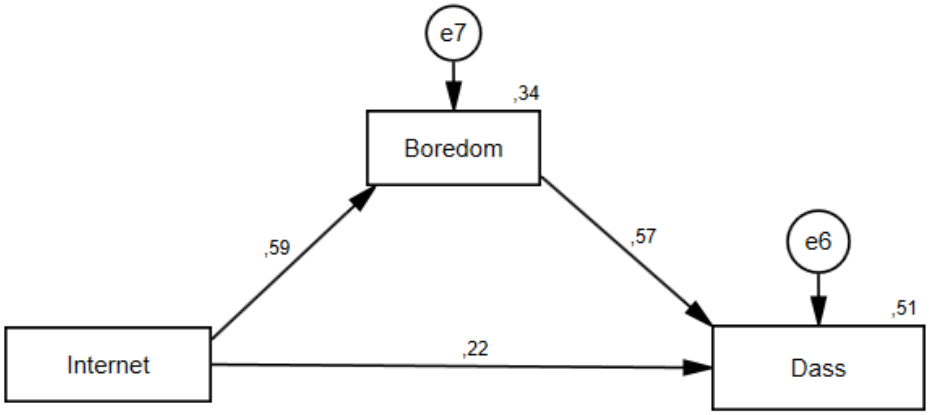

Figure 2. Structural model of mediating role effect of boredom proneness variable in relationship between internet addiction and DASS-21-*Model 2*

Figure 2 shows the result of examining the mediating role effect of Boredom proneness variable between Internet addiction and DASS-21 according to Model 2. In order to understand whether or not a variable has a mediator role, the relationship in the model between the predictor and the predicted variable should either completely or partially decrease along with the mediator variable. In Model 2, and as one of the purposes of the current study, it can be seen that the relationship between Internet addiction and DASS-21 decreased significantly when compared to Model 1. While the previous relationship (in Model 1) was r_1 = .55, this declined to r_2 = .22 in Model 2. According to these results, it can be concluded that the Boredom proneness variable had a partial mediating role in the relationship between Internet addiction and DASS-21. In order to see whether or not the goodness of fit indices of the model related to this relationship (Model 2) were at the desired level, the relevant indices were examined. Finally, the tested Model 2 was found to be significant, and that it explained 51% of the total variance found. The goodness of fit indices of Model 2 obtained as a result of the mediation analysis are presented in Table 3.

Table 3. Goodness of fit indices for Model 2

Index	Model Values	Acceptable Limits
χ^2/SD	1.000	≤ 5 Acceptable fit, ≤ 3 perfect fit < 0
RMSEA	.000	≤ .10 poor fit, ≤ .08 good fit, ≤ .05 perfect fit
GFI	1.000	Between .85 and .89 acceptable fit, ≥ .90 good fit
AGFI	1.000	Between .85 and .89 acceptable fit, ≥ .90 good fit
CFI	1.000	≥ .90 acceptable fit, ≥ .95 good fit, ≥ .97 perfect fit
IFI	1.000	≥ .90 acceptable fit, ≥ .95 good fit, ≥ .97 perfect fit
TLI (NNFI)	1.000	≥ .90 acceptable fit, ≥ .95 good fit

As a result of the research, in order to see whether or not the goodness of fit indices of Model 2 were at the desired levels, it was checked to see whether each of the fit values were among those values accepted in the literature (see Schermelleh-Engel et al., 2003). When looking at the goodness of fit values obtained from the analyses performed in the current study, it can be seen that the values found were considered "perfect" values (χ^2 / *SD* = 1.000; RMSEA = .000; GFI = 1.000; AGFI = 1.000; CFI = 1.000; IFI = 1.000;

TLI = 1.000). According to these results, the tested model can be said to possess the required goodness of fit values.

3.4. Results regarding the moderation model

The main purpose of the study was to examine the moderator effect of the Fear of COVID-19 on the predictions of Internet addiction and Boredom proneness on DASS-21. In order to achieve this goal, first, mediator role work was carried out and a model was obtained accordingly. What kind of effect the Fear of COVID-19 had on this model was then tested, and the results of the tested model are presented in Figure 3.

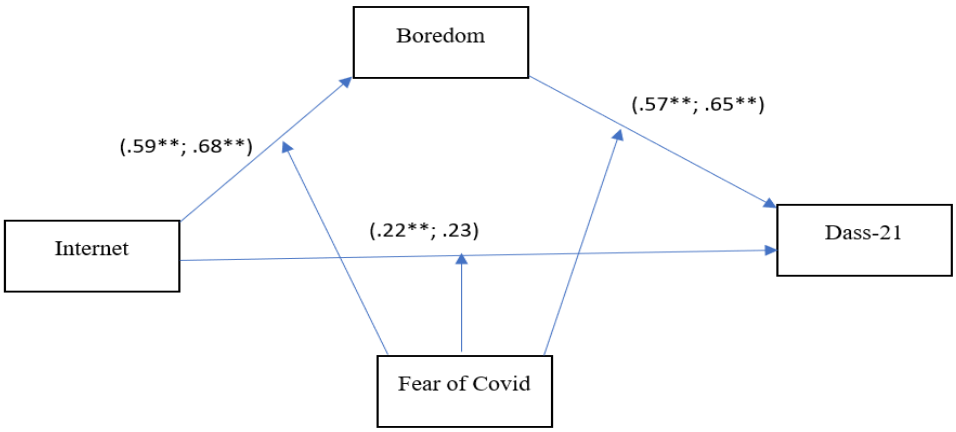

Figure 3. Model examining moderator effect of fear of COVID-19 on "mediating role of boredom proneness in relationship between internet addiction and DASS-21"

When Figure 3 is examined, it can be seen that Fear of COVID-19 significantly increased the relationship between Internet addiction and Boredom proneness, and between Boredom proneness and DASS-21 (r_{1chg} = .110; p < .001; r_{2chg} = .080; p < .001). However, it is understood that Fear of COVID-19 does not significantly increase the relationship between Internet addiction and DASS-21 (r_{3chg} = .001; p > .05). According to these results, Fear of COVID-19 increases the relationship between Internet addiction and Boredom proneness more than other relationships. Similarly, Fear of COVID significantly increases the relationship between Boredom proneness and DASS-21. The obtained results are presented in Table 4.

Table 4. Regression analysis of moderator effect of fear of COVID-19 on "mediating role of boredom proneness in relationship between internet addiction and DASS-21"

		Coeff.	*SE*	*t*	*p*
Constant	i_Y	-3.1107	2.6580	-1.1703	.000
Internet addiction (X)	b_1	.9185	.1123	8.1767	.000
Fear of COVID (W)	b_2	.6212	.1378	4.5071	.000
Internet addiction × Fear of COVID (XW)	b_3	-.0162	.0055	-2.9489	.033
Model 1: R^2 = 38.49, MSE = 36.43, F(115, 96), p < .000					
Constant	i_Y	25.4252	3.4899	7.2854	.000
Internet addiction (X)	b_1	.5355	.1769	3.0266	.026

		Coeff.	*SE*	*t*	*p*
Boredom proneness (M)	c_1	-.3427	.1788	-1.9169	.050
Fear of COVID (W)	b_2	-.7192	.1904	-3.7768	.001
Boredom proneness × Fear of COVID (MW)	b_3	.0617	.0095	6.5108	.030
Model 2: R^2 = 77.67, MSE = 51.97, F(168, 44), p < .000					

Table 4 shows the regression analysis results regarding the moderator effect of Fear of COVID-19. According to these results, it can be said that Fear of COVID-19 significantly increases the relationship between Internet addiction and Boredom proneness, and between Boredom proneness and DASS-21. However, it is understood that Fear of COVID-19 does not significantly affect the relationship between Internet addiction and DASS-21. This result shows that Fear of COVID-19 increases Internet use and DASS-21 through Boredom proneness.

4. DISCUSSION

The COVID-19 pandemic has affected much of daily life on a global scale, resulting in significant consequences on both individual and community life. It is therefore considered important to determine the levels of these effects in terms of producing viable solutions. The current research was aimed at determining the effects of the COVID-19 pandemic process on the lives of a certain group of individuals (i.e., university students) and to provide indications regarding potential solutions. Throughout the pandemic, a significant amount of research has been published on COVID-19 and its effects. In these studies, an increase has generally been observed with regards to various psychological problems evidenced throughout the general population. Another important point is that, within the pandemic process, individuals have come to extensively use the Internet on a daily basis. Whether or not this has led to an increase in the levels of Internet addiction is an important area of research.

As seen in the literature, Internet addiction can be the cause of various psychological problems (Demir & Kutlu, 2016; Pontes et al., 2015; Smahel et al., 2012; Valkenburg & Peter, 2007, 2011; Widyanto et al., 2007). In the current study, a positive and significant relationship was found to exist between Internet addiction and depression, anxiety, and stress. The first assumption of the current research was that, in examining the mediator effect of boredom proneness in the relationship between Internet addiction and depression, anxiety, and stress, it would be seen that boredom has a partial mediator effect. Looking at the studies published in the literature, it is understood that boredom is directly related to both Internet addiction and psychological problems (Biolcati et al., 2018; Martin et al., 2012; Mikulas & Vodanovich, 1993; Perkins & Hill, 1985). Although the partial mediating role study of boredom in this relationship has not been previously examined, this result actually supports the partial mediating role effect of boredom. Although the first hypothesis of the current research makes an important contribution to the literature, it is seen that the results obtained from the second hypothesis, which is the main purpose of the current study, addresses an important gap in the current literature.

In the second assumption, which constitutes the main purpose of the study, the moderator effect on the first model, which examines the partial mediator role effect of COVID-19 fear, was tested. In terms of the fear of COVID-19, the relationship between Internet addiction and depression, anxiety, and stress was examined. Additionally, the relationship between Internet addiction and boredom proneness and the moderator effect

on the relationship between boredom and depression, anxiety and stress were examined. In looking at the results, it was seen that fear of COVID-19 increased the relationship between Internet addiction and boredom. This result supports similar previous studies such as Li et al. (2015), Nichols and Nicki (2004), and Rotunda et al. (2003). Likewise, it was seen that fear of COVID-19 increased the relationship between boredom and depression, anxiety, and stress. Again, the data showed similar results to previous similar studies (Martin et al., 2012; Vodanovich, 2003). It seems, therefore, that fear of COVID-19 does not significantly increase the relationship between Internet addiction, another relationship, and depression, anxiety, and stress. Although fear of COVID-19 has been shown to have a positive and significant relationship with each of these variables, alone it cannot significantly change the direction of the relationship between them. All of these results reflect the conclusion that fear of COVID-19 can have a significant effect on the lives of individuals.

5. CONCLUSION

This research consists of a two-dimensional process in which a preliminary model is also used to reveal the main purpose. The study's findings have shown that Internet addiction increases depression, anxiety, as well as stress-related issues, and that boredom proneness has a partial mediating effect on this relationship. At the same time, the relationship between Internet addiction and boredom increased when the fear of COVID-19 was taken into consideration; It was concluded, therefore, that the relationship between boredom and depression, anxiety, and stress also increased, and as such, the negative effects of COVID-19 fear on individuals and society as a whole should be addressed in order that it may be reduced.

PRACTICAL IMPLICATIONS

Although the current study was conducted with a sample of university students, it has several implications for both university students and other societal sectors. In a period when COVID-19 is still constantly increasing its global impact, it is inevitable that individuals and societies will experience problems in many areas of life. In the current study, the COVID-19 pandemic was said to have increased Internet usage, and as a result, instances of depression, anxiety, stress, and boredom. As revealed by the study's findings, the fear of COVID-19 alone can have a significant negative psychological and physiological effect. This result is seen as a warning to find ways to reduce such effects.

As such, university managers as well as other public and private sector leaders need to be actively involved in various activities aimed at reducing the effects of COVID-19 fear. Especially for students who for a long time now have been required to follow their lectures remotely via the Internet, and who may have experienced various psychological issues as a result, it would be of significant benefit to conduct various forms of psychological training in order to reduce their fear of COVID-19. Undoubtedly, along with psychological training aimed at addressing fear of COVID-19, it would be pertinent to conduct studies in the area of boredom, Internet addiction, stress, anxiety, and depression. Responsibility should be taken to protect the younger generation as much as possible from the destructive effects of COVID-19; after all, they are the guarantors of all our futures. The current study has shown that there may be increased levels of various psychological problems connected to the fear of COVID-19. Therefore, it is clear that attempts should be made in order to reduce this impact. In such difficult times, individuals want to feel that they are both valued and important. Therefore, psychological training that helps to make individuals feel more valued will likely produce significantly beneficial results.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Although the current study was conducted with a large sample of university students, it has several implications for both university students and other segments of society. In a period in which COVID-19 has been constantly increasing its impact, it is perhaps inevitable for individuals and societies to experience problems in many areas. In the current study, it has been seen that the COVID-19 process has increased Internet usage, as well as instances of depression, anxiety, stress, and boredom. As seen, fear of COVID-19 alone can have a significant negative psychological and physiological effect. This result is seen as a warning to take the necessary action to reduce these effects. Therefore, university and other public and private sector leaders should become involved in various activities aimed at reducing the effects of COVID-19 fear. Especially for students who have for a long time now been required to follow their lessons remotely via the Internet, and who have experienced various psychological problems as a result, it would be of significant benefit to conduct various psychological training exercise aimed at reducing the fears surrounding the COVID-19 virus. Undoubtedly, along with psychological training to address COVID-19 fear, it would also be appropriate to conduct academic studies on boredom, Internet addiction, stress, anxiety, and depression.

Responsibility should be taken and action taken to protect today's young people, who are the guarantors of all our future, from the destructive effects of COVID-19. The current study has shown that there has been an increase in various psychological problems connected with and as a result of COVID-19 fear. Therefore, it is considered inevitable that there should be various attempts made to reduce this increase. In such difficult times, individuals need to feel that they are both valued and important. Therefore, providing them with psychological training aimed at making them feel valued will likely produce significantly beneficial results.

DECLARATIONS

Author Contributions The article was written by a single author, who read and approved the final published version of the article.

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Ethical Approval No ethical approval was sought as the article does not present any study of human or animal subjects.

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

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ABOUT THE CONTRIBUTOR

Halim Guner, PhD, is Assistant Professor of Educational Administration in the Mus Alparslan University (Turkey). His main research interests include educational leadership, higher education policy, school management and school administration. He has published extensively in the some international journals and also authored books and chapters on education.

E-mail: h.guner@alparslan.edu.tr

ORCID ID: https://orcid.org/0000-0003-1537-7655