

Students' increased time spent on social media, and their level of coronavirus anxiety during the pandemic, predict increased social media addiction

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Abstract

Background: During the COVID-19 pandemic period, the level of anxiety and the duration of social media use increased in university students.

Objectives: This study aimed to examine the relationship between coronavirus anxiety and social media addiction in university students.

Methods: The sample consisted of 346 university students in Turkey. The data were collected online using the Sociodemographic Data Form, the Coronavirus Anxiety Scale Short Form and the Social Network Addiction Scale. The data were analysed using one-way analysis of variance, Mann–Whitney *U* test, Pearson correlation analysis, chi-square analysis and multiple linear regression analysis.

Results: The results showed that the mean coronavirus anxiety score was higher in men than in women. Social media addiction increased as the daily time spent by the students on social media increased. A positive correlation was found between the daily time spent on social media before the pandemic and social media usage during the pandemic. It was concluded that students use social media more during the pandemic than before it and that social media addiction increases as the students' coronavirus anxiety increases.

Conclusion: It is important to plan initiatives to reduce coronavirus anxiety to prevent social media addiction in young people.

Study Location and Sample: The research population consisted of 1st and 2nd year students who are studying in the Medical Services and Techniques Department of Vocational School of Health Services at a university located in the west of Turkey, during the Fall Term of academic year 2020–2021. Students in this department are studying in anaesthesia, dialysis, first and emergency aid, medical laboratory techniques, medical imaging technique, and medical documentation and secretarial programmes.

KEYWORDS

mental health; questionnaires; social media; statistical methods; students, health; surveys

INTRODUCTION

On 7th July 2020, during the opening speech of the media conference on COVID-19, Tedros Adhanom Ghebreyesus (the Director-General of the World Health Organization) stated that there were 11.4 million cases of COVID-19 in the world and more than 535,000 people died and added that the pandemic continued to accelerate globally and that we have not yet reached its peak. The importance of national unity and global solidarity in defeating the virus, a common enemy holding the world hostage, was emphasized (WHO, 2020). In Turkey, the Minister of Health, Dr. Fahrettin Koca, frequently highlighted the importance of quarantines, mask use and social distancing for national unity at press conferences held after coronavirus science board meetings (Turkish Ministry of Health, 2020a).

During pandemics, factors such as being quarantined at home for a long time and being removed from social life increase internet use among young people (Franchina & Lo Coco, 2018). This increase in internet use creates the ground for internet addiction.

BACKGROUND

In the data published in the 'COVID-19 Daily Status Report 23/11/2020' in Turkey, the number of patients aged 15–24 was 492 girls and 432 boys. The number of new COVID-19 patients per 1,000,000 people was 78% higher in girls than in boys (Turkish Ministry of Health, 2020b).

During the COVID-19 pandemic, one-third of the world's population lived under quarantine. Quarantine periods applied during pandemics create a loss of control in people's lives. This loss of control in turn results in various psychological reactions such as stigma, fear, insomnia, stress, anger, irritability, emotional exhaustion, depression, helplessness and anxiety. The observed anxiety and depression are highly likely to pave the way for mental health problems in the long run (Fofana et al., 2020; Hoof, 2020).

Coronavirus anxiety is also very common in Turkey. Anxiety symptoms are seen in one out of every four people. It has been determined that coronavirus anxiety is higher in women in the 15–20 age group and in single individuals (Erdogdu et al., 2020; Gencer, 2020).

Curfews and quarantines for young people have been applied in Turkey at certain periods during the pandemic. Young people have been isolated from social life during quarantine periods, and internet usage has increased during this period. Turkish Statistical Institute (TUIK) data shows that the number of households with individual

Key Messages

- Changes in students' use of social media during the pandemic may indicate patterns of mental health difficulties.
- Greater use of social media by students during the pandemic was associated with greater levels of social media addiction.
- Students' coronavirus anxiety together with time spent on social media during the pandemic partly predict the level of social media addiction.

internet use and internet access has increased steadily since 2009. Young people who are at home during the quarantine period spend a considerable amount of time on the internet by connecting to various social media platforms. These social media sites include Facebook, Snapchat and Instagram in which users create public or private profiles and form a network of 'friends' or 'followers'. Facebook was ranked as the most popular social media site in 2017, with more than two billion monthly users worldwide. In 2016, it was reported that 98% of college/university students in the Western world had a Facebook account. Instagram (a social media service for photo and video sharing only) is the second most widely used social media platform in Western countries. Its popularity continues to increase (Franchina & Lo Coco, 2018; TUIK, 2020).

Social media addiction is recognized as a new type of addiction that affects the general population and is more intense among young people (Gómez-Galán et al., 2020). Internet use among adolescents is becoming a growing addiction problem in Turkey and around the world. In a study conducted on a total of 1078 adolescents comprising 534 boys and 525 girls aged 11–18 in Croatia, Finland and Poland, it was determined that internet addiction level was the highest in the age group of 15–16 years (Karacic & Oreskovic, 2017). According to the 'Household Information Technologies (IT) Usage Research' published in August 2021 by the Turkish Statistical Institution, internet usage rate increased from 75.3% to 79.0% in the last 2 years and from 79.0% to 82.6% in 2021. According to the report, internet usage increased from 84.7% to 87.7% in men and from 73.3% to 77.5% in women, and the rate of households with home internet access was 88.3% in 2019, 90.7% in 2020 and 92% in 2021 (TUIK, 2019, 2020, 2021).

The sense of loss of control during quarantine periods has also increased internet use among young people. The

excessive use of social media has exacerbated the negative effects on young people (King et al., 2020; Király et al., 2020). The negative effects of internet addiction, especially social media, on university students lead to depression, decrease in social support from friends, sleep quality, psychological well-being, self-esteem, life satisfaction and shouldering responsibility and increase in attention deficit, hyperactivity and neuroticism. (Baş et al., 2016; Çınar & Mutlu, 2019; Garrett et al., 2018). Problematic internet use decreases the level of adaptation to the university environment as well as personal and social adaptation levels of the university students (İkiz et al., 2015).

Studies have shown that as depression, anxiety and stress level and time spent on social media increase, problematic internet use and technology addiction increase (Andreassen et al., 2016; Bayar, 2019; Demirci, 2019; Odacı & Çikrikci, 2017). However, to the best of our knowledge there is little studies examining the relationship between coronavirus anxiety, which is one of the current issues, and social media addiction. Hence, this study aimed to explore the effect of coronavirus anxiety on the level of social media addiction in university students who spend a considerable amount of time at home because of reasons such as curfews and online education during the pandemic period.

METHODS

Type of research

This is a descriptive cross-sectional study.

Study location and sample

The research population consisted of 1st and 2nd year students who are studying in the Medical Services and Techniques Department of Vocational School of Health Services at a university located in the west of Turkey, during the Fall Term of academic year 2020–2021. Students in this department are studying in anaesthesia, dialysis, first and emergency aid, medical laboratory techniques, medical imaging technique, and medical documentation and secretarial programmes. The data were collected by purposive sampling method. The sample size was calculated based on the known population ($t:1$; $p:0.5$; $q:0.5$; $d:0.05$), and the minimum sample size was found to be 310 students. Within the scope of the research, 581 students were invited to the study. The study sample consisted of 346 students who accepted to participate in the study and filled out the online questionnaires.

Data collection tools

The data were collected online using the Sociodemographic Data Form, the Coronavirus Anxiety Scale Short Form (COAS) and the Social Network Addiction Scale (SNAS).

Sociodemographic data form

This form was prepared by the researchers in line with the relevant literature to obtain information on the socioeconomic and educational characteristics of the individuals participating in the research. There are 11 questions in the form that evaluate age, gender, class, marital status, status of being diagnosed with COVID-19, graduation status, university programme, economic status, residence, time spent on social media and change in social media usage. Analysis of 11 questions with sociodemographic characteristics was shown in Table 1.

Coronavirus anxiety scale short form (CAS)

The CAS was developed by Lee in 2020 to identify possible cases of dysfunctional anxiety associated with the COVID-19 crisis. The Turkish validity and reliability study of the scale was performed by Biçer et al. (2020). The form is one-dimensional and consists of five items that are answered based on the question 'How often have you experienced the following situations in the last 2 weeks?'

The CAS is a five-point Likert-type scale, and the answers are 'never', 'rarely', 'less than 1 or 2 days', 'a few days', 'more than 7 days' and 'almost every day in the last 2 weeks'. The highest score that can be obtained from the scale is 20. A score of ≥ 9 indicates a high level of anxiety. The Cronbach's Alpha reliability coefficient of the scale was calculated to be 0.832 (Biçer et al., 2020). In the present study, the Chronbach's alpha value was found to be 0.83. Necessary permissions to use the scale were obtained via e-mail.

Social Network Addiction Scale

This scale was developed by Karaca et al. (2019) to reveal the problematic use of social media and to raise awareness on social media addiction in individuals. Based on literature review, attention, mood changes, tolerance, withdrawal symptoms, conflict and relapse, which are also involved in other addiction types, were accepted as the main components of social media addiction. SNAS

TABLE 1 Coronavirus anxiety scores and social media addiction scores according to the sociodemographic characteristics of the participants

	<i>N</i> (%)	Coronavirus anxiety Mean (SD)	Social media addiction Mean (SD)
Gender			
Male	75 (21.7)	1.78 (2.71)	55.21 (21.84)
Female	271 (78.3)	0.82 (1.61)	59.92 (23.97)
		<i>U</i> = 7906	<i>U</i> = 9086.000
		<i>Z</i> = -3.192	<i>Z</i> = -1.404
		<i>p</i> = 0.001	<i>p</i> = 0.160
Class			
1st year	59 (17.1)	1.31 (2.00)	58.75 (27.36)
2nd year	287 (82.9)	1.63 (2.63)	58.93 (22.77)
		<i>U</i> = 8224	<i>U</i> = 7885.500
		<i>Z</i> = -0.376	<i>Z</i> = -0.830
		<i>p</i> = 0.707	<i>p</i> = 0.406
Marital status			
Married	4 (1.2)	1.59 (2.54)	69.50 (35.33)
Single	342 (98.8)	0.25 (0.50)	58.77 (23.45)
		<i>U</i> = 475.50	<i>U</i> = 562.500
		<i>Z</i> = -1.137	<i>Z</i> = -0.611
		<i>p</i> = 0.256	<i>p</i> = 0.541
Status of being diagnosed with COVID-19			
Yes	7 (2.0)	1.43 (2.99)	57.00 (30.43)
No	339 (98.0)	1.58 (2.53)	58.93 (23.47)
		<i>U</i> = 1015.5	<i>U</i> = 1053.500
		<i>Z</i> = -0.708	<i>Z</i> = -0.508
		<i>p</i> = 0.479	<i>p</i> = 0.612
High school graduation			
Health vocational high school	197 (56.9)	1.50 (2.40)	59.01 (23.86)
Anatolian high school	118 (34.1)	1.70 (2.70)	60.70 (23.56)
Imam Hatip high school	13 (3.8)	2.15 (3.76)	56.76 (23.78)
State high school	3 (0.9)	1.67 (2.08)	38.33 (7.76)
Other	15 (4.3)	1.07 (1.75)	49.06 (19.18)
		<i>F</i> = 0.433	<i>F</i> = 1.430
		<i>p</i> = 0.785	<i>p</i> = 0.224
University programme			
Anaesthesia	114 (32.9)	1.50 (2.50)	55.47 (23.46)
First and emergency aid	66 (19.1)	1.24 (2.79)	59.33 (23.69)
Medical laboratory techniques	56 (16.2)	2.42 (3.14)	59.82 (21.03)
Dialysis	43 (12.4)	1.77 (2.84)	64.97 (26.58)
Medical documentation and secretarial	36 (10.4)	1.58 (2.55)	60.05 (24.03)
Medical imaging techniques	31 (9.0)	1.56 (2.44)	59.09 (22.96)
		<i>F</i> = 0.984	<i>F</i> = 1.093
		<i>p</i> = 0.427	<i>p</i> = 0.364

(Continues)

TABLE 1 (Continued)

	N (%)	Coronavirus anxiety Mean (SD)	Social media addiction Mean (SD)
Economic status			
Income less than expenditure	113 (32.7)	1.98 (2.80)	57.74 (25.05)
Income equal to expenditure	204 (59.0)	1.39 (2.46)	58.96 (22.90)
Income more than expenditure	29 (8.4)	1.34 (1.76)	62.93 (22.66)
		$F = 2.144$	$F = 0.559$
		$p = 0.119$	$p = 0.572$
Residence			
Province	182 (52.6)	1.39 (2.19)	59.89 (24.03)
District	89 (25.7)	1.71 (2.73)	60.97 (24.71)
Village/Town	75 (21.7)	1.88 (3.04)	54.00 (20.52)
		$F = 1.146$	$F = 2.141$
		$p = 0.319$	$p = 0.119$
Time spent on social media			
None or <1 h	26 (7.5)	1.69 (2.63)	34.30 (7.64)
1–3 h	157 (45.4)	1.31 (2.33)	52.48 (19.64)
3–5 h	111 (32.1)	1.76 (2.75)	63.94 (21.94)
>5 h	52 (15.0)	1.94 (2.61)	79.76 (24.09)
		$F = 1.133$	$F = 37.694$
		$p = 0.336$	$p = 0.000$
Change in social media usage			
No change	77 (22.3)	0.61 (1.63)	48.29 (19.64)
Increase	245 (70.8)	1.83 (2.63)	63.80 (23.69)
Decrease	24 (6.9)	2.08 (3.19)	42.79 (14.37)
		$F = 7.576$	$F = 20.831$
		$p = 0.001$	$p = 0.000$

Note: Bold indicates $p < 0.05$.

Abbreviations: F , one-way analysis of variance; SD, standard deviation; U , Mann–Whitney U .

was designed as a five-point Likert-type scale. Each item is scored between 1 and 5, with ‘completely disagree’ corresponding to 1 and ‘completely agree’ corresponding to 5. SNAS has a total of 26 items, and the scores obtained from all the items are added together to calculate the ‘total social media addiction score’. As the total score obtained from the scale increases, addiction increases (Karaca et al., 2019). In the present study, the Chronbach’s alpha value was found to be 0.95. Necessary permissions to use the scale were obtained via e-mail.

Data analysis

The data were analysed with the Statistical Package for Social Science (SPSS), version 23.0. Numbers and

percentages were used to present the sociodemographic data. Significance level was taken as $p < 0.05$. Continuous variables were presented as mean \pm standard deviation, and categorical variables as numbers and percentages.

The conformity of the data to normal distribution was evaluated using Shapiro–Wilk normality analysis. One-way analysis of variance was used to compare the independent groups when the parametric test assumptions were met, and Mann–Whitney U test was used otherwise. In further analyses, Tukey HSD adjustments were used. In addition, the relationships between the continuous variables were examined with Pearson correlation analysis, and the differences between the categorical variables were examined with Chi-square analysis.

TABLE 2 The time spent by the participants on social media during the pandemic and the change in social media use.

Time spent on social media	Change in social media use							
	No change		Increase		Decrease		Total	
	Number	%	Number	%	Number	%	Number	%
None/<1 h	10	38.5	6	23.1	10	38.5	26	100.0
1–3 h	45	28.7	102	65	10	6.4	157	100.0
3–5 h	14	12.6	93	83.8	4	3.6	111	100.0
>5 h	8	12.6	44	83.8	0	3.6	52	100.0
Total	77	22.3	245	70.8	24	6.9	346	100.0

Note: χ^2 : 67.576; p : 0.000.

TABLE 3 The relationship between coronavirus anxiety and social media addiction scores

		Coronavirus anxiety	Social media addiction
Coronavirus anxiety	Pearson correlation	1	0.183**
	Sig. (two-tailed)		0.001
	<i>N</i>	346	346
Social media addiction	Pearson correlation	0.183**	1
	Sig. (two-tailed)	0.001	
	<i>N</i>	346	346

Note: **Correlation is significant at the 0.01 level (two-tailed).

TABLE 4 Multiple linear regression analysis results for the prediction of social media addiction

Variable	<i>B</i>	Standard error	β	<i>t</i>	<i>p</i>
Constant	-	3.518		6.264	0.000
Daily time spent on social media	13.634	1.306	0.484	10.437	0.000
Coronavirus anxiety	1.360	0.431	0.146	3.157	0.002

The effect of daily time spent on social media and coronavirus anxiety on social media addiction was evaluated with multiple linear regression analysis.

RESULTS

The mean age of the students (n : 346) participating in the research was 20.25 ± 1.78 years. Furthermore, 78.3% of the participants were women, and 98.8% were single. Moreover, 32.9% of the participants were studying in the anaesthesia programme, and 82.9% were second-year students. It was noted that 56.9% were graduates of health vocational high schools, 59% had income equal to their expenditure and 52.6% were living in the province. At the time of the research, 98% of the students had not been diagnosed with COVID-19. Whilst 45.4% of the students participating in the study stated that they spent 1–3 h per day on social media (Facebook, Instagram, Twitter, etc.), 32% spent 3–

5 h and 15% spent >5 h. Additionally, 70.8% of the students stated that the time they spent on social media increased during the COVID-19 pandemic (Table 1).

The cut-off point of the COAS was calculated to be 9 (Biçer et al., 2020). In the present study, the mean score of the students on the Coronavirus Anxiety Scale was 1.57 ± 2.53 . The results showed that the majority of the students participating in our study had low coronavirus anxiety.

A statistically significant difference was found between the male and female students in the COAS total score ($p < 0.05$). It was determined that the mean COAS score of men was higher than that of women. No significant difference was found in the COAS scores with respect to the students' class (p : 0.707), marital status (p : 0.256), COVID-19 diagnosis status (p : 0.479), high school they graduated from (p : 0.785), programme they attended (p : 0.427), economic status (p : 0.119), place of residence (p : 0.319) and daily time spent on social

media (p : 0.336). Hence, factors such as students' class, marital status and economic income do not affect the coronavirus anxiety. The one-way ANOVA revealed a significant relationship between change in the use of social media during the pandemic and coronavirus anxiety ($F = 7.576$, p : 0.001). To understand which change was responsible for the differences, Tukey HSD adjustments were used. A significant difference was between those who stated that there was no change in social media use during the pandemic and those who stated that their social media use either increased or decreased. Accordingly, those with a decrease in social media use had the highest coronavirus anxiety scores (Table 1). The mean SNAS score of the students was 58.89 ± 23.57 . No significant difference was found in the SNAS scores with respect to the student's gender (p : 0.160), class (p : 0.406), marital status (p : 0.541), COVID-19 diagnosis status (p : 0.612), the high school they graduated from (p : 0.224), the programme they attended (p : 0.364), economic status (p : 0.572) and place of residence (p : 0.119). Factors such as students' class, marital status and economic status did not affect the social media addiction scores (Table 1).

A statistically significant difference was found between the daily time spent on daily social media and the mean SNAS score ($F = 37.694$, $p = 0.000$). The results of the post-hoc analysis showed that those who spent more than 5 h a day had the highest SNAS score. The increase in the time spent on social media augmented the social media addiction in the students (Table 1).

A statistically significant difference was found between the time spent on social media during the pandemic and the social media addiction scores ($F = 20.831$, p : 0.000). Students who stated that their use of social media increased during the pandemic had the highest SNAS scores (Table 1).

There was a significant difference between the time spent on social media and the change in social media usage during the pandemic (χ^2 : 67.576, p : 0.000). It was found that as the daily time spent on social media by participants increased, use of social media also increased during the pandemic period. Participants who spent 3–5 h or >5 h daily on social media before the pandemic stated that their social media use increased during the pandemic. Accordingly, the increase in social media usage during the pandemic was higher in students who spent more time on social media before the pandemic. A total of 70.8% of the participants stated that their use of social media increased during the pandemic period. (Table 2).

A positive, weak, significant correlation was found between the SNAS score and the coronavirus anxiety score (r : 0.183, $p < 0.01$). As the students' anxiety about

coronavirus increased, their social media addiction also increased (Table 3).

Multiple linear regression analysis revealed that there was a moderate and significant positive correlation between coronavirus anxiety and daily time spent on social media and social media addiction (R : 0.51, R^2 : 0.26, $p < 0.01$). Accordingly, coronavirus anxiety and daily time spent on social media explained 26% of the total variance (F : 62.257, $p < 0.01$). When the standardized (β) coefficient and t values were examined, the time spent on social media and coronavirus anxiety were found to be the significant predictors of social media addiction (Table 4).

DISCUSSION

This study was conducted to examine the effect of coronavirus anxiety on the level of social media addiction in university students. The mean coronavirus anxiety score of the students was found to be 1.57 ± 2.53 . The results show that the students participating in the study had low coronavirus anxiety. The first case in Turkey was detected in 11 March 2020. In Turkey, education and training in universities was suspended within the scope of the measures taken, and the Higher Education Institution (YÖK) envisaged the transition to distance education in March (Council of Higher Education, 2020) and distance education continued in the fall semester of 2020. From the beginning of June, the daily number of cases decreased to 1000–1500 and remained stable until October 2020 (Ministry of Health of the Republic of Turkey Covid 19 Information Platform, 2022). With the start of the second wave of COVID-19 in Turkey, in September, curfews started to be applied again in December (Ministry of Interior of the Republic of Turkey, 2020). The low COVID-19 anxiety scores of the students in our study can be attributed to the fact that the number of cases was at an all-time low, the second wave had not yet started, and only 2% of the students had been diagnosed with COVID-19 at the time of the study. As a result, they may not have been anxious since they believed the risk of covid transmission was low or that the pandemic had passed them by.

Our analyses revealed that coronavirus anxiety scores were higher in men than in women. However, studies in the literature have documented that women have higher levels of coronavirus anxiety and fear than men (Atay et al., 2020). Conversely, there are also studies reporting the lack of difference between men and women (Sağlam et al., 2020). In the present study, it was determined that factors such as class, marital status and economic status did not affect coronavirus anxiety. Although only a limited number of studies are available on this subject,

Sağlam et al. (2020) showed that there was no significant relationship between socioeconomic status and anxiety. Although life in Turkey has dramatically changed at many different levels and fields, living together with the family members is still important. Culturally, children remain dependent financially on their families until marriage, university graduation or completion of military service (Özbay & Özcan, 2006). Living with family has long been recognized as a powerful source of reassurance for individuals, which helps to minimize depression and anxiety. Healthy family environments often improve the mental health of vulnerable youth suffering from depression or anxiety (Van Harmelen et al., 2016). General populations outside of academia who may have jobs, income and responsibilities could have been affected differently, as well as the additional pressure of rent and family support. Due to this positive environment and the financial and moral support of the family, there may not be a significant relationship between socioeconomic status (especially marital and economic) and anxiety in the students who participated in the study.

Coronavirus anxiety can exert many negative effects on people. Studies conducted in various countries have shown that fear of coronavirus causes various psychological problems such as internet addiction, depression, anxiety, sleep disorder and post-traumatic stress disorder (Garcia-Priego et al., 2020; Liu et al., 2020; Servidio et al., 2021). Furthermore, it has also been established that the risk of developing mental disorders increases as a result of excessive exposure to misinformation with the overuse of the internet (Eidi & Delam, 2020; Garcia-Priego et al., 2020). Coronavirus anxiety appears to have negative effects not only on young people but also on older individuals. Studies conducted on adults have reported that as coronavirus anxiety increases, the level of hopelessness increases (Yılmaz et al., 2020) whilst occupational performance levels (Hoşgör et al., 2020) and productivity at work (İri & Korkmaz, 2020) decrease. However, it has also been shown that the intensity of coronavirus anxiety symptoms is also important. As the anxiety symptoms worsen, general anxiety symptoms, depressive symptoms, problematic internet use and addiction to smartphones increase, which results in social media addiction (Elhai et al., 2020; Zhan et al., 2021).

In our study, although some participants with high coronavirus anxiety decreased their use of social media during the pandemic compared to the pre-pandemic period, others increased their use during the pandemic. Studies found that problematic social media usage during the COVID-19 pandemic was significantly associated with anxiety among university students (Arslan et al., 2022; Brailovskaia & Margraf, 2021; Jiang, 2021).

This is a novel finding that has never been reported before, to our knowledge. This variation may be due to the notion that the Turkish university students may be aware of the negative impact of social media on their coronavirus anxiety. Also, adolescents might react differently on a health crisis than the general public (Cauberghe et al., 2021). Social media can be used as a tool to actively cope with the situation in order to alleviate anxiety and feel better (Cauberghe et al., 2021). Infectious disease reports, on the other hand, frequently include risk-raising signals, which might increase public stress, anxiety, and depression (Holmes et al., 2020; Sell et al., 2017). Liu and Liu (2020) found there was an indirect effect of social media exposure on anxiety. Individuals with greater problematic social media use more likely to have greater misunderstanding and misconception about COVID-19 information (Lin et al., 2020).

Bendau et al. (2021) discovered that the frequency and duration of COVID-19-associated media exposure were positively connected to the subjective demand for it to be reduced due to a significant amount of Covid-induced stress. The authors stated that this finding indicates that a significant number of people are aware of 'information overconsumption' as a risk factor for mental health. A recent study found that users utilize social media as the primary source for information retrieval, and they have awareness related to fake news (Kaya, 2020). Along with the results of this study, our findings can be considered culturally. As a result, our findings could indicate that Turkish youth are aware of fake news and that limiting their usage of social media is a coping mechanism with anxiety. Our result may be a recommendation for cross-cultural comparative studies. Also, it was reported that addictive social media usage was significant only for individuals with a medium or high level of anxiety (Brailovskaia & Margraf, 2021). The majority of the students participating in our study have low coronavirus anxiety. Although no consensus on criteria for addictive behaviour or overuse has been reached (Montag et al., 2020), the distinction between actual and virtual life is blurred for a social media addiction, and he/she is on the verge of breaking it (Kırık et al., 2015). Therefore, it is critical to investigate mechanisms, risk factors, differences between low-risk and at-risk users, and the detrimental effects of social media addiction on psyches and well-being (Montag et al., 2020; Turel & Cavagnaro, 2019).

The mean SNAS score of the students participating in the study was 58.89 ± 23.57 . Although there was no statistically significant difference in the social media addiction scores with respect to gender, the scores of women were found to be higher than those of men. In addition, it was observed that factors such as the type of programme

attended, socioeconomic status, type of high school graduated from, and place of residence did not affect the social media addiction scores. The results obtained from other studies conducted in Turkey are consistent with those of the present study. Although some studies have reported that women use social media more (Çömlekçi & Başol, 2019), no significant difference was found in other studies in the social media addiction scores of students with respect to variables such as gender, age, programme of the study, faculty and monthly expenditure (Aktan, 2018; Baz, 2018; Yilmazsoy & Kahraman, 2017).

With the COVID-19 pandemic, the number of internet users has increased globally and has reached 60% of the global population (Kayıkcioglu & Teker, 2020). The time spent by young people on the internet has increased during the pandemic due to various factors such as staying away from friends and social activities and the fact that the majority of the young people have smart phones and the internet is easily accessible. These factors have enhanced the social media usage. In the present study, it was observed that as the daily time spent by the students on social media increased, the social media addiction score also increased. It was found that 45.4% of the students participating in the study spent 1–3 h a day and 32% spent 3–5 h a day on social media (Facebook, Instagram, Twitter, etc.). Furthermore, 70.8% of the students stated that the time they spent on social media increased during the COVID-19 pandemic. Gao et al. (2020) stated that >80% of young people used social media very frequently during the COVID-19 pandemic. According to the literature, as daily social media use increases, the level of social media addiction also increases (Aktan, 2018; Balcı & Gölcü, 2013; Bilgili, 2018). At the time of the present study, students had to switch to online education and were isolated from social life due to the COVID-19 curfews. Social isolation negatively affects people's emotional and physical well-being (Al-Kandari & Al-Kandari & Al-Sejari, 2020). It has also been reported that addictive behaviour increases during periods of social isolation and that young people exhibit more addictive behaviours than adults (Ho et al., 2017).

A positive, weak and significant correlation was found between the addiction scores and coronavirus anxiety scores of the participants. As the students' anxiety about coronavirus increased, their social media addiction also increased. The increased frequency of social media use during the pandemic can also cause mental health problems in young people (Gao et al., 2020). As social media addiction increases, life satisfaction decreases (Longstreet & Brooks, 2017) and loneliness and depression levels increase in young people (Balcı & Baloğlu, 2018; Balcı & Gölcü, 2013). However, it has also been argued that the pandemic may have positive effects on young people who follow social media for fun and do

not have anxiety (Cauberghe et al., 2021). It has been shown that young people who feel lonely and have high levels of anxiety are more inclined to use social media. However, overuse of social media can make young people feel less happy rather than good or relaxed. It has been opined that this effect is likely due to young people using social media as a replacement for social relationships (Boursier et al., 2020; Calancie et al., 2017; Cauberghe et al., 2021). Hence, it is very important to identify the factors that lead to social media addiction.

The regression model used in the present study showed that students who had high coronavirus anxiety and spent more daily time on social media had higher social media addiction levels. Social media addiction levels of the participants with high coronavirus anxiety were 1.36 times higher than those of participants with low anxiety. Similarly, the social media addiction levels of students who spent more daily time on social media were 13.63 times higher than those of students who spent less time. The social media addiction levels were most affected by the daily time spent on social media (0.48%) and coronavirus anxiety (0.15%). In the present study, these two variables together were the significant factors affecting social media addiction (26%). As the daily time spent by the students on social media increases, the risk of social media addiction also increases.

One of the limitations of the present study is that the sample included students studying in a single vocational school only. The second limitation of the study is the lack of comparison with other variables such as depression and coping.

CONCLUSION

In the present study, it was determined that the time spent by the students on social media increased during the COVID-19 pandemic. Coronavirus anxiety scores of the male students were higher than those of the female students. Social media addiction scores of the students increased as the daily time spent on social media increased, and the students who spent ≥ 3 h a day on social media used social media more during the pandemic period. According to these results, a positive correlation was established between coronavirus anxiety and social media addiction. Young people with an increased level of anxiety enter a vicious circle where they use social media more, which in turn results in an increased risk of social media addiction.

Preventative precautions need to be taken to increase university students' media literacy, assist them in properly using social media, and avoid the risks associated with excessive social media use and addiction during

pandemics. Moreover, regulating the use of social media will also prevent many psychological disorders seen in young people. In this context, interventions on how to cope with coronavirus anxiety and how to use social media responsibly in young people should be planned. Further studies with larger samples comparing different education programmes and age groups can be planned. The current findings could be used to develop interventions to prevent social media addiction of university students during the COVID-19 pandemic.

AUTHOR CONTRIBUTIONS

Study Design: Hatice Başkale, Hilal Parlak Sert. Data Collection: Hatice Başkale, Hilal Parlak Sert. Data Analysis: Hatice Başkale, Hilal Parlak Sert. Manuscript Writing: Hatice Başkale, Hilal Parlak Sert.

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All the procedures performed in this study were done in accordance with the Medical Ethics Committee of the Pamukkale University Faculty of Medicine (28.07.2020/14) and were executed in accordance with the ethical standards laid down in an appropriate version of the Declaration of Helsinki (as revised in Brazil 2013). Approvals were obtained from the Denizli Healthcare Vocational School of Pamukkale University. Before data collection, informed consent was obtained from all individual participants involved in the study.

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CONFLICT OF INTEREST

There is no conflict of interest in this article.

ETHICS STATEMENT

All procedures in this study were carried out in accordance with the Ethics Committee. Ethics committee of the university has been applied and ethical permission was granted for this study (28.07.2020/14) and were executed in accordance with the ethical standards laid down in an appropriate version of the Declaration of Helsinki (as revised in Brazil 2013). Institutional permission was obtained from the university where the study will be conducted. Before data collection, informed consent was obtained from all individual participants involved in the study.

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REFERENCES

- Aktan, E. (2018). Examining the social media addiction levels of university students according to various variables. *Erciyes İletişim Dergisi*, 5(4), 405–421. https://doi.org/10.17680/erciye_siletisim.379886
- Al-Kandari, Y. Y., & Al-Sejari, M. M. (2020). Social isolation, social support and their relationship with smartphone addiction. *Information, Communication & Society*, 1(19), 1925–1943. <https://doi.org/10.1080/1369118X.2020.1749698>
- Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. *Psychology of Addictive Behaviors*, 30, 252–262. <https://doi.org/10.1037/adb0000160>
- Arslan, G., Yıldırım, M., & Zangeneh, M. (2022). Coronavirus anxiety and psychological adjustment in college students: Exploring the role of college belongingness and social media addiction. *International Journal of Mental Health and Addiction*, 20, 1546–1559. <https://doi.org/10.1007/s11469-020-00460-4>
- Atay, Ü. T., Dinçer, N. N., Yarkac, F. U., & Öncü, E. (2020). Evaluation of fear and anxiety levels of dentistry specialist students during the COVID-19 pandemic. *Necmettin Erbakan Üniversitesi Diş Hekimliği Dergisi*, 2(3), 86–93. <https://doi.org/10.51122/neudentj.2020.1>
- Balci, Ş., & Baloğlu, E. (2018). The relationship between social media addiction and depression: “A field study on university youth”. *Galatasaray University of Journal Communication*, 34, 209–234.
- Balci, Ş., & Gölcü, A. (2013). Facebook addiction among university students in Turkey: “Selcuk university example”. *Türkiyat Araştırmaları Dergisi*, 34, 255–278.
- Baş, A. U., Soysal, F., & Aysan, F. (2016). The relationship of problematic internet use with psychological well-being and social support in university students. *Itobiad: Journal of the Human & Social Science Researches*, 5(4), 1035–1046.
- Bayar, B. (2019). The relationship between technology addiction and social anxiety in adolescent girls. Department of Nursing. Nursing Master's Program. İnönü Üniversitesi Sağlık Bilimleri Enstitüsü. Malatya. <http://hdl.handle.net/11616/15073>
- Baz, F. Ç. (2018). Social media addiction: Study on university students. *OPUS International Journal of Society Studies*, 9(16), 276–295. <https://doi.org/10.26466/opus.470118>
- Bendau, A., Petzold, M. B., Pyrkosch, L., Maricic, L. M., Betzler, F., Rogoll, J., Große, J., Ströhle, A., & Plag, J. (2021). Associations between COVID 19 related media consumption and symptoms of anxiety, depression and COVID 19 related fear in the general population in Germany. *European Archives of Psychiatry and Clinical Neuroscience*, 271, 283–291. <https://doi.org/10.1007/s00406-020-01171-6>
- Biçer, İ., Çakmak, C., Demir, H., & Kurt, M. E. (2020). Short form of coronavirus anxiety scale: Turkish validity and reliability study. *Anadolu Clinic Journal of Medical Sciences*, 25, 216–225. <https://doi.org/10.21673/anadoluklin.731092>
- Bilgili, H. (2018). A research on the determination of social media use and social media addiction levels: Aegean university example. *Erciyes İletişim Dergisi*, 5(4), 351–369. <https://doi.org/10.17680/erciyesiletisim.420632>
- Boursier, V., Gioia, F., Musetti, A., & Schimmenti, A. (2020). Facing loneliness and anxiety during the COVID-19 isolation: The role

- of excessive social media use in a sample of Italian adults. *Frontiers in Psychiatry*, 11, 586222. <https://doi.org/10.3389/fpsy.2020.586222>
- Brailovskaia, J., & Margraf, J. (2021). The relationship between burden caused by coronavirus (COVID-19), addictive social media use, sense of control and anxiety. *Computers in Human Behavior*, 119, 106720. <https://doi.org/10.1016/j.chb.2021.106720>
- Calancie, O., Ewing, L., Narducci, L. D., Horgan, S., & Khalid-Khan, S. (2017). Exploring how social mediaing sites impact youth with anxiety: A qualitative study of Facebook stressors among adolescents with an anxiety disorder diagnosis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(4), article 2. <https://doi.org/10.5817/CP2017-4-2>
- Cauberghe, V., Van Wesenbeeck, I., De Jans, S., Hudders, L., & Ponnet, K. (2021). How adolescents use social media to cope with feelings of loneliness and anxiety during COVID-19 lockdown. *Cyberpsychology, Behavior, and social mediaing*, 24(4), 250–257. <https://doi.org/10.1089/cyber.2020.0478>
- Çınar, Ç. Y., & Mutlu, E. (2019). The relationship of internet addiction with self-esteem, attention, fear of missing out, life satisfaction and personality traits. *Bağımlılık Dergisi*, 20(3), 133–142.
- Çömlekçi, M. F., & Başol, O. (2019). Investigation of the relationship between social media usage purposes and social media addiction in young people. *Manisa Celal Bayar Üniversitesi Sosyal Bilimler Dergisi*, 17(4), 173–188. <https://doi.org/10.18026/cbayarsos.525652>
- Council of Higher Education. (2020). President of the Council of Higher Education prof. M. A. Yekta Saraç- Press Release. YÖK - English Process of Distance Education and The New Exam Date for YKS (yok.gov.tr).
- Demirci, I. (2019). The adaptation of the Bergen social media addiction scale to Turkish and its evaluation of relationship with depression and anxiety symptoms. *Anadolu Psikiyatri Dergisi*, 21, 15–22. <https://doi.org/10.5455/apd.41585>
- Eidi, A., & Delam, H. (2020). Internet addiction is likely to increase in home quarantine caused by coronavirus disease 2019 (COVID 19). *Journal of Health Sciences & Surveillance System*, 8(3), 136–137. <https://doi.org/10.30476/JHSS.2020.87015.1104>
- Elhai, J. D., Yang, H., McKay, D., & Asmundson, G. J. (2020). COVID-19 anxiety symptoms associated with problematic smartphone use severity in Chinese adults. *Journal of Affective Disorders*, 2(74), 576–582. <https://doi.org/10.1016/j.jad.2020.05.080>
- Erdoğan, Y., Koçoğlu, F., & Sevim, C. (2020). Investigation of anxiety and hopelessness levels according to psychosocial and demographic variables during the COVID-19 pandemic. *Journal of Clinical Psychiatry*, 23, 24–37. <https://doi.org/10.5505/kpd.2020.35403>
- Fofana, N. K., Latif, F., Sarfraz, S., Bilal, Bashir, M. F., & Komal, B. (2020). Fear and agony of the pandemic leading to stress and mental illness: An emerging crisis in the novel coronavirus (COVID-19) outbreak. *Psychiatry Research*, 291, 113230. <https://doi.org/10.1016/j.psychres.2020.113230>
- Franchina, V., & Lo Coco, G. (2018). The influence of social media use on body image concerns. *International Journal of Psychoanalysis and Education*, 10(1), 5–14.
- Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., & Dai, J. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS One*, 15(4), e0231924. <https://doi.org/10.1371/journal.pone.0231924>
- Garcia-Priego, B. A., Triana-Romero, A., Pinto-Galvez, S. M., Duran-Ramos, C., Salas-Nolasco, O., Reyes, M. M., & Troche, J. M. R. (2020). Anxiety, depression, attitudes, and internet addiction during the initial phase of the 2019 coronavirus disease (COVID-19) epidemic: A cross-sectional study in Mexico. *MedRxiv*, 1–14. <https://doi.org/10.1101/2020.05.10.20095844>
- Garett, R., Liu, S., & Young, S. D. (2018). The relationship between social media use and sleep quality among undergraduate students. *Information, Communication & Society*, 21, 163–173. <https://doi.org/10.1080/1369118X.2016.1266374>
- Gencer, N. (2020). Fear of coronavirus (COVID-19) in individuals during the pandemic: Çorum example. *Uluslararası Sosyal Bilimler Akademi Dergisi*, 4, 1153–1173. <https://doi.org/10.47994/usbad.791577>
- Gómez-Galán, J., Martínez-López, J. Á., Lázaro-Pérez, C., & Sarasola Sánchez-Serrano, J. L. (2020). Social media consumption and addiction in college students during the COVID-19 pandemic: Educational approach to responsible use. *Sustainability*, 12(18), 7737. <https://doi.org/10.3390/su12187737>
- Ho, S. S., Lwin, M., & Lee, E. (2017). Till logout do us part? Comparison of factors predicting excessive social media sites use and addiction between Singaporean adolescents and adults. *Computers in Human Behavior*, 75, 632–642. <https://doi.org/10.1016/j.chb.2017.06.002>
- Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., Ballard, C., Christensen, H., Silver, R. C., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I., Michie, S., Przybylski, A. K., Shafran, R., Sweeney, A., ... Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. *The Lancet Psychiatry*, 7(6), 547–560. [https://doi.org/10.1016/S2215-0366\(20\)30168-1](https://doi.org/10.1016/S2215-0366(20)30168-1)
- Hoof, E. (2020). Lockdown is the world's biggest psychological experiment - and we will pay the price. *World Economic Forum*, 9. <https://www.weforum.org/agenda/2020/04/this-is-the-psychological-side-of-the-covid-19-pandemic-that-were-ignoring/>
- Hoşgör, H., Dörttepe, Z. Ü., & Sağcan, H. (2020). Investigation of the relationship between COVID-19 anxiety and occupational performance in emergency health services employees in terms of descriptive variables. *Mehmet Akif Ersoy Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 7(3), 865–886. <https://doi.org/10.30798/makuiibf.793641>
- İkiz, E., İkiz, F., Asıcı, A. G. E., & Savcı, A. G. M. (2015). The relationship between problematic internet use and adaptation to university life. *Bartın Üniversitesi Eğitim Fakültesi Dergisi*, 4(1), 34–50. <https://doi.org/10.14686/BUEFAD.2015111013>
- İri, N. I. O., & Korkmaz, F. (2020). Bireylerin koronavirüs anksiyete düzeylerinin psikolojik sağlamlılıklarına etkisi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*, 10(4), 769–771.
- Jiang, Y. (2021). Problematic social media usage and anxiety among university students during the COVID-19 pandemic: The mediating role of psychological capital and the moderating role of academic burnout. *Frontiers in Psychology*, 12, 612007. <https://doi.org/10.3389/fpsyg.2021.612007>
- Karaca, F., Yıldırım, O. G., & Kulaksız, T. (2019). Social Network Addiction Scale development: Validity and reliability study. *Addicta: The Turkish Journal On Addictions*, 6(2), 337–360. <https://doi.org/10.15805/addicta.2019.6.2.0049>

- Karacic, S., & Oreskovic, S. (2017). Internet addiction through the phase of adolescence: A questionnaire study. *JMIR Mental Health*, 4, e11. <https://doi.org/10.2196/mental.5537>
- Kaya, T. (2020). The changes in the effects of social media use of Cypriots due to COVID-19 pandemic. *Technology in Society*, 63, 101380. <https://doi.org/10.1016/j.techsoc.2020.101380>
- Kayikcioglu, S., & Teker, D. (2020). Economic effects of the pandemic on consumer behavior and the courier industry. *PressAcademia Procedia*, 12(1), 114–115. <https://doi.org/10.17261/Pressacademia.2019.1045>
- King, D. L., Delfabbro, P. H., Billieux, J., & Potenza, M. N. (2020). Problematic online gaming and the COVID-19 pandemic. *Journal of Behavioral Addictions*, 9, 184–186. <https://doi.org/10.1556/2006.2020.00016>
- Király, O., Potenza, M. N., Stein, D. J., King, D. L., Hodgins, D. C., Saunders, J. B., Griffiths, M. D., Gijoneska, B., Billieux, J., & Brand, M. (2020). Preventing problematic internet use during the COVID-19 pandemic: Consensus guidance. *Comprehensive Psychiatry*, 100, 152180. <https://doi.org/10.1016/j.comppsy.2020.152180>
- Kırık, M., Arslan, A., Çetinkaya, A., & Gül, M. (2015). A quantitative research on the level of social media addiction among young people in Turkey. *International Journal of Science Culture and Sport (IntJSCS)*, 3(3), 108–122. <https://doi.org/10.14486/IntJSCS444>
- Lin, C. Y., Broström, A., Griffiths, M. D., & Pakpour, A. H. (2020). Investigating mediated effects of fear of COVID-19 and COVID-19 misunderstanding in the association between problematic social media use, psychological distress, and insomnia. *Internet Interventions*, 21, 100345. <https://doi.org/10.1016/j.invent.2020.100345>
- Liu, C., & Liu, Y. (2020). Media exposure and anxiety during COVID-19: The mediation effect of media vicarious traumatization. *International Journal of Environmental Research and Public Health*, 17(13), 4720. <https://doi.org/10.3390/ijerph17134720>
- Liu, C. H., Zhang, E., Wong, G. T. F., & Hyun, S. (2020). Factors associated with depression, anxiety, and PTSD symptomatology during the COVID-19 pandemic: Clinical implications for US young adult mental health. *Psychiatry Research*, 290, 113172. <https://doi.org/10.1016/j.psychres.2020.113172>
- Longstreet, P., & Brooks, S. (2017). Life satisfaction: A key to managing internet & social media addiction. *Technology in Society*, 50, 73–77. <https://doi.org/10.1016/j.techsoc.2017.05.003>
- Ministry of Health of the Republic of Turkey Covid 19 Information Platform. (2022). Genel Koronavirüs Tablosu. <https://covid19.saglik.gov.tr/TR-66935/genel-koronavirus-tablosu.html>
- Ministry of Interior of the Republic of Turkey. (2020). Koronavirüs ile Mücadele Kapsamında - Yeni Kısıtlama ve Tedbirler Genelgesi. <https://www.icisleri.gov.tr/koronavirus-ilemucadele-kapsaminda-sokaga-cikma-kisitlamalari---yeni-kisitlama-ve-tedbirler-genelgesi>
- Montag, C., Wegmann, E., Sariyska, R., Demetrovics, Z., & Brand, M. (2020). How to overcome taxonomical problems in the study of internet use disorders and what to do with “smartphone addiction”? *Journal of Behavioral Addictions*, 9(4), 908–914. <https://doi.org/10.1556/2006.8.2019.59>
- Odacı, H., & Çikrikci, Ö. (2017). Differences in problematic internet use based on depression, anxiety and stress levels. *Addicta: The Turkish Journal on Addictions*, 4(1), 41–61. <https://doi.org/10.15805/addicta.2017.4.1.0020>
- Özbay, Ö., & Özcan, Y. Z. (2006). A test of Hirschi's social bonding theory: Juvenile delinquency in the high schools of Ankara, Turkey. *International Journal of Offender Therapy and Comparative Criminology*, 50(6), 711–726. <https://doi.org/10.1177/030624X05283525>
- Sağlam, Ö., Salman, Ö., & Kök, B. E. (2020). Measurement of insomnia, anxiety and depression levels of suspected and definitive COVID-19 cases among individuals who applied to Istanbul training and research hospital and were quarantined in Cevizlibağ Atatürk Girls' dormitory. *Türkiye Sosyal Hizmet Araştırmaları Dergisi*, 4(3), 73–81.
- Sell, T. K., Boddie, C., McGinty, E. E., Pollack, K., Smith, K. C., Burke, T. A., & Rutkow, L. (2017). Media messages and perception of risk for Ebola virus infection, United States. *Emerging Infectious Diseases*, 23(1), 108–111. <https://doi.org/10.3201/eid2301.160589>
- Servidio, R., Bartolo, M. G., Palermi, A. L., & Costabile, A. (2021). Fear of COVID-19, depression, anxiety, and their association with internet addiction disorder in a sample of Italian students. *Journal of Affective Disorders Reports*, 4, 100097. <https://doi.org/10.1016/j.jadr.2021.100097>
- TÜİK. (2019). Household Information Technologies (IT) Usage Survey. Retrieved August 27, 2019, from [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Kullanim-Arastirmasi-2019-30574](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2019-30574)
- TÜİK. (2020). Household Information Technologies (IT) Usage Survey. [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Usim-Arastirmasi-2020-33679](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Usim-Arastirmasi-2020-33679)
- TÜİK (2021). Household Information Technologies (IT) Usage Survey. [https://data.tuik.gov.tr/Bulten/Index?p=Survey-on-Information-and-Communication-Technology-\(ICT\)-Usage-in-Households-and-by-Individuals-2021-37437](https://data.tuik.gov.tr/Bulten/Index?p=Survey-on-Information-and-Communication-Technology-(ICT)-Usage-in-Households-and-by-Individuals-2021-37437)
- Turel, O., & Cavagnaro, D. R. (2019). Effect of abstinence from social media on time perception: Differences between low- and at-risk for social media “addiction” groups. *Psychiatric Quarterly*, 90, 217–227. <https://doi.org/10.1007/s11126-018-9614-3>
- Turkish Ministry of Health. (2020a). *Salgına Karşı 83 Milyon Bir Olalım*. <https://www.saglik.gov.tr/TR,66635/salgina-karsi-83-milyon-bir-olalim.html>
- Turkish Ministry of Health. (2020b). *COVID-19 Günlük Durum Raporu, Türkiye*. https://covid19.saglik.gov.tr/Eklenti/39507/0/covid-19-gunluk-durum-raporu-23112020pdf.pdf?_tag1=1929C811C96B680413572285F0DA62A740B77695
- Van Harmelen, A. L., Gibson, J. L., St Clair, M. C., Owens, M., Brodbeck, J., Dunn, V., Lewis, G., Croudace, T., Jones, P. B., Kievit, R. A., & Goodyer, I. M. (2016). Friendships and family support reduce subsequent depressive symptoms in at-risk adolescents. *PLoS One*, 11(5), e0153715. <https://doi.org/10.1371/journal.pone.0153715>
- WHO. (2020). *WHO Director-General's opening remarks at the media briefing on COVID-19-7 July 2020*. World Health Organization. <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---7-july-2020>

- Yılmaz, Z., İstemihan, F. Y., Arayıcı, S. N., Yılmaz, S., & Güloğlu, B. (2020). Investigation of anxiety and hopelessness levels in individuals during the COVID-19 pandemic. *Kriz Dergisi*, 28(3), 135–150. <https://dergipark.org.tr/en/pub/kriz/issue/59100/766713>
- Yılmazsoy, B., & Kahraman, M. (2017). Examining the relationship between social media addiction and educational use of social media in university students: Facebook example. *Journal of Instructional Technologies & Teacher Education*, 6(1), 9–20.
- Zhan, Z., Wei, Q., & Hong, J. C. (2021). Cellphone addiction during the Covid-19 outbreak: How online social anxiety and cyber danger belief mediate the influence of personality. *Computers*

in Human Behavior, 121, 106790. <https://doi.org/10.1016/j.chb.2021.106790>

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