*Arch Health Sci Res*. 2023;10(1):44-49
DOI: 10.5152/ArcHealthSciRes.2022.22096

**Original Article**

# Mediator Role of Social Media Use on the Effect of Negative Emotional State of Young Adults on Hopelessness During COVID-19 Outbreak

**Meral ÖZTÜRK, Ahmet TÜRK, Burak M. GÖNÜLTAŞ, İshak AYDEMİR**
Department of Social Work, Sivas Cumhuriyet University, Faculty of Letters, Sivas, Turkey

**Cite this article as:** Öztürk M, Türk A, Gönültaş BM, Aydemir I. Mediator role of social media use on the effect of negative emotional state of young adults on hopelessness during COVID-19 outbreak. *Arch Health Sci Res.* 2023;10(1):44-49.



## ABSTRACT

**Objective:** The aim of this study was to examine the mediating effect of social media use on the relationship between negative emotional state and hopelessness levels of young adults during COVID-19 outbreak.

**Methods:** As a quantitative research method, a relational survey model was used for the research. The participants consisted of 586 young adults aged between 18 and 40 years, of which 250 (42.7%) were male and 336 (57.3%) were female. The mean age of the participants was 28.40 ± 5.73 years. The data were collected via personal information form, Depression-Anxiety-Stress Scale, and Beck Hopelessness Scale (BHS). PROCESS Macro regression analyses were used in the data analysis process.

**Results:** According to the findings, the levels of negative emotional state of the participants were high and their hopelessness levels were moderate. The average daily use of social media is approximately 4 hours. The duration of social media use has a low level of positive correlation with negative mood and hopelessness. The duration of social media use has a partial mediating effect on the relationship between negative mood disorder and hopelessness.

**Conclusion:** Findings show that negative emotional state increases the duration of social media use. The increase in the duration of social media use increases hopelessness levels. Negative emotional state and social media use have been found to be risk factors for hopelessness. The results of the research were discussed within the scope of the literature, and various suggestions were presented.

**Keywords:** COVID-19, negative emotional state, hopelessness, social media, young adult

## Introduction

In the COVİD-19 pandemic, negative emotional states such as depression, anxiety, stress, and hopelessness increased among people.[1,2] These psychological problems affected all age groups, but the greatest impact is on the young adults aged between 18 and 40 years.[3,4] This may be related to decrease in social activities and relations causing a loss of meaning and value in symbolic objects people give importance. The loss of meaning and value attributed to symbolic objects (e.g., freedom, right to travel, right to have education, and participating in social life) and threat and uncertainty about the future may have an impact on beliefs and thoughts. People may reevaluate their purposes, what life means to them, daily routines, and priorities and redo their cognitive evaluations. Exposure to stressful experiences and accompanying false cognitive evaluations may exacerbate mental disorders.[5] Negative emotional states are closely connected to hopelessness.[1,2] When people are exposed to stressful experiences often and have difficulties in dealing with these issues, they may have hopelessness and despair for future especially if they adopt negative cognitive evaluation style.[6]

Social media platforms such as Instagram and Twitter became even more popular during COVID-19.[7,8] Users come together and share media and information in accordance with their interests and try to keep abreast of world news in these platforms.[9] Especially young people frequently used social media in the pandemic process to satisfy their communication needs and to learn about COVID-19.[7-9] The issue of whether psychological disorders increase social media use (SMU) or SMU increases psychological problems are controversial topic among researchers. Self-medication

**Corresponding author:** Ahmet TÜRK, e-mail: shu.ahmetturk@gmail.com
Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Received: July 30, 2022
Accepted: September 12, 2022
Publication Date: November 7, 2022

hypothesis states that depressive and socially anxious individuals try to remedy their negative emotional state via use of the internet.[10] Thus, the negative emotional state of young adults during this period may be linked to the amount of SMU.[11] Some research findings support this argument.[12-14] On the other hand, some underline the dark side of SMU and claims that intensive SMU may increase many mental health issues such as depression, anxiety, stress, suicidality, low-self-esteem,[12,14] social isolation, existential dissatisfaction, and hopelessness.[15,16] It may stem from the spread of both accurate and inaccurate information during chaotic times.[17] Some studies have revealed findings that confirm this idea.[18,19]

The present study aims to investigate the potential mediator role of SMU on the relationship between negative emotional state and hopelessness level of young adults during the COVID-19 period. Even though there are no studies which cover the use of these 3 variables in the national and international literature, some available research supports a mediating role of the relationship among depression, social anxiety, and supportive welfare.[10] Both studies were carried out prior to the COVID-19 pandemic, and the subjects of the studies were adolescents. A specific study, which utilizes social media usage as the mediator variable for the relationship between negative emotional state and hopelessness of young adults (aged 18-40 years) defined as the vulnerable age group of pandemic periods,[20] could not be found in the literature. In this sense, analyzing the psychological problems which stem from the COVID-19 outbreak and evolved into another serious issue especially for young adults, who are expected to build the future, is of high significance.

## Methods

### Participants

The population of the study consists of young adults aged between 18 and 40 years. Five hundred eight-six people volunteered to fill the online survey form. It is estimated that approximately 30 million people are in this age group (18-40 years) in Turkey according to Turkish Statistical Institute data.[21] According to Sekaran and Bougie,[22] when the population is 10 million and over, a sample of at least 384 people would be enough for 95% reliability. In this case, it is estimated that the sample represents the population. Two hundred fifty male (42.7%) and 336 female (57.3%) individuals participated in the study. The mean age of the participants was 28.40 ± 5.73 and the age of the participants varied between 18 and 40 years. Two hundred forty-seven (42.2%) of the participants were married, while 339 (57.8%) of them were single. While only 36 (6.1%) of the participants had high school or lower education, 550 (93.9%) of them had 2-year or higher degree education. While 268 (46%) of the participants were government employees, 239 (41%) of them were unemployed (unemployed or students) and 79 (13%) were self-employed.

### Data Collection Tools

**Personal Information Form:** A personal information form was utilized to gather the sociodemographic information (gender, age, marital status, and income). An open-ended question (How many hours do you spend on social media in a regular day?) that measures the SMU of the participants was asked.

**Depression-Anxiety-Stress Scale (DASS-21):** This scale was developed by Lovibond and Lovibond[23] and adapted into Turkish by Sarıçam.[24] The scale consists of depression, anxiety, and stress sub-factors, each of which contains 7 items. Items of the scale are graded in 4-point Likert scale in which 0 stands for "never," 1 stands for "sometimes," 2 stands for "often," and 3 stands for "always." While total scores of the sub-factors can be taken, the total score of the whole scale can also be calculated. The total score of the sub-factors varies between 0 and 21, and the scoring is done as follows: normal, mild, medium, advanced, and extreme. A depression score of 11 and over, an anxiety score of 8 and over, and a stress score of 13 and over mean advanced and extreme levels of depression, anxiety, and stress, respectively.[23] Besides, the total score of the whole scale can be calculated. The lowest score is 0 and the highest score is 63 for the scale. A score of 30 and over is graded as having advanced level of negative emotional state.[25]

The Cronbach's alpha coefficients were $\alpha = 0.87$ for depression, $\alpha = 0.85$ for anxiety, and $\alpha = 0.81$ for stress calculated by Sarıçam.[24] In the present study, according to reliability analysis results, which was calculated for the total score of the whole scale, the Cronbach's alpha coefficient is $\alpha = 0.93$.

**Beck Hopelessness Scale (BHS):** The scale developed by Beck et al consists of 20 items and is of one factor and is graded between 0 and 1. Eleven of the items receive 1 point for response "yes" and 9 of the items receive 1 point for "no."[26] The arithmetical total score stands for hopelessness score. The lowest score is 0 and the highest score is 20. Scores between 0 and 3 are graded normal, 4 and 8 are graded mild, 9 and 14 are graded medium, and 14 and 20 are graded severe hopelessness.[27,28] With the original form of the scale, Cronbach's alpha reliability coefficient was $\alpha = 0.93$. With Seber et al.'s adaptation, the Cronbach's alpha reliability coefficient was $\alpha = 0.86$.[28] In the present study, the reliability coefficient is $\alpha = 0.93$.



### Ethical Considerations

All procedures performed in studies involving human participants were in accordance with the Helsinki Declaration of 1975, revised in 2000. Before the study was conducted, ethical committee approval was obtained from Sivas Cumhuriyet University Ethical Committee of Social and Humanities (Date: January 31, 2022/E-60263016-050.06. 04-125704). With online survey form which was constituted utilizing "Google Forms," measuring tools of the study were delivered to the participants via social media platforms between February 2, 2022, and February 15, 2022. Online informed consent was obtained from all participants included in the study.

### Statistical Analysis

With the normality tests that were carried out prior to the analysis of hypotheses, it was determined that the scales have a homogeneous distribution. Upon understanding that it was possible to use the parametric tests, PROCESS Macro regression analysis was utilized with the purpose of revealing the mediator effect of SMU on the relation between the independent variable (negative emotional state) and the dependent variable (hopelessness). PROCESS Macro is of the capacity to test a variety of mediator effect patterns with path analyses which are based on linear regression in accordance with the variables, thanks to mediation and regulatory effect analysis.[29] PROCESS Macro analysis was carried out with 95% reliability. The conceptual pattern in Figure 1 was developed in order to analyze the impact of negative emotional state on hopelessness and the mediator effect of SMU on this impact.

Based on the model in Figure 1, the following hypotheses were developed:

**$H_1$:** There is a meaningful relationship among negative emotional state, SMU, and hopelessness.

**$H_2$:** Negative emotional state predicts hopelessness at a meaningful level.

**$H_3$:** Negative emotional state predicts SMU.

**$H_4$:** SMU predicts hopelessness.

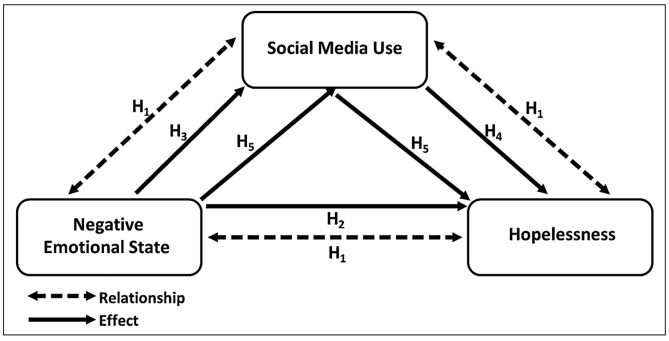


**Figure 1.** Conceptual pattern of the study.

**$H_5$:** SMU has a mediating role on the impact of negative emotional state on hopelessness.

## Results

In this study, for all participants, the depression level average score is ($\bar{x}$=11.40 ± 5.57), the anxiety level average score is ($\bar{x}$=9.21 ± 4.91), and the stress level average score is ($\bar{x}$=11.59 ± 4.61). The average score of the participants on DASS-21 is $\bar{x}$=32.21 ± 13.76, and this score stands for 32.21 × 2=64.42 on DASS-42. From these values, it can be deduced that the participants have severe level of negative emotional state. By the hopelessness level score average ($\bar{x}$=10.00 ± 6.48), it was determined that the participants have medium level of hopelessness (Table 1). It can also be seen that the participants spend almost 4 hours ($\bar{x}$=3.69 ± 1.93) on social media every single day. Taking the frequency distribution into account, it can be understood that the SMU is around 1 to 5 hours for 88.4% of the participants.

With the correlation analysis for variables, the intermediate level positive relation between negative emotional state and hopelessness was determined ($r$=0.650, $P$ < .01). There is positive but low-level relationship between SMU and negative emotional state ($r$=0.233, $P$ < .01) and between SMU and hopelessness ($r$=0.232, $P$ < .01). In accordance with the findings, hypothesis $H_1$ (*There is a meaningful relationship among negative emotional state, SMU, and hopelessness*) is accepted (Table 1).

With the SPSS PROCESS analysis, 3 different regression analysis models were tested together with the purpose of determining the effect of negative emotional state on hopelessness and the mediator role of SMU on this effect. The results of the analysis are presented in Table 2.

With the first model, the effect of negative emotional state on SMU was analyzed. According to the results, the model is meaningful ($F$=33.660; $P$=.000 < .001). Furthermore, negative emotional state has a meaningful effect over SMU ($t$=5.801; $P$=.000 < .001), and this effect has positive direction ($\beta$=0.032). $R^2$ value shows that the predictive effect of negative emotional state in explaining hopelessness is 5%.

With the second model, it was analyzed whether negative emotional state and SMU have any effect on hopelessness. According to the analysis, the model is meaningful ($F$=218.847; $P$=.000 < .001). In the model, negative emotional state and SMU have a statistically meaningful effect on hopelessness. Both negative emotional state ($\beta$=0.29) and SMU ($\beta$=0.28) have an impact on hopelessness. Adjusted $R^2$ value for negative emotional state and SMU is 0.43, and this value shows that the predictive effect of these 2 variables in explaining hopelessness is 43%. This means that negative emotional state and SMU have a positive predictive effect on hopelessness individually and together.

With the third model, the effect of independent variable on dependent variable was analyzed. According to the results of the analysis, the model is meaningful ($F$=426.399; $P$=.000 < .001). In the model, negative emotional state has a statistically meaningful effect over hopelessness ($t$=20.65; $P$=.000 < .001). The effect of negative emotional state over hopelessness level is positive ($\beta$=0.306); and $R^2$ value shows that the predictive effect of negative emotional state in explaining hopelessness level is 42%. Based on the findings, $H_2$ (*Negative emotional state predicts hopelessness at a meaningful level*), $H_3$ (*Negative*



**Table 1.** Descriptive Statistical Values About Variables and Inter-variable Relations

| Variables | n | $\bar{x}$ | SD | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Depression | 586 | 11.40 | 5.57 | 1 | | | | | |
| 2. Anxiety | 586 | 9.21 | 4.91 | 0.708** | 1 | | | | |
| 3. Stress | 586 | 11.59 | 4.61 | 0.758** | 0.773** | 1 | | | |
| 4. NES | 586 | 32.21 | 13.76 | 0.912** | 0.903** | 0.918** | 1 | | |
| 5. SMU | 586 | 10.00 | 6.48 | 0.268** | 0.155** | 0.207** | 0.233** | 1 | |
| 6. BHS | 586 | 3.69 | 1.93 | 0.707** | 0.468** | 0.584** | 0.650** | 0.232** | 1 |

**$P$ < .01.
NES, negative emotional state; SMU, social media use; BHS, Beck Hopelessness Scale; SD, standard deviation.

**Table 2.** Findings About the Effect of NES On Hopelessness and Mediator Role of Social Media Use

| Variables | | Regression | | | | | | Model Summary | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Dependent variable | SMU | $\beta$ | SE | $t$ | $P$ | LLCI | ULCI | $P$ | $R^2$ | $F$ |
| Independent variable | Stabilized | 2.633 | 0.197 | 13.306 | .00 | 2.244 | 3.022 | .000** | 0.05 | 33.660 |
| | NES | 0.032 | 0.005 | 5.801 | .00 | 0.065 | 0.131 | | | |
| Dependent variable | BHS | $\beta$ | SE | $t$ | $P$ | LLCI | ULCI | $P$ | $R^2$ | $F$ |
| Independent variable | Stabilized | –0.613 | 0.590 | –1.040 | .298 | –1.772 | 0.545 | .000** | 0.43 | 218.847 |
| | NES | 0.297 | 0.015 | 19.565 | .00 | 0.267 | 0.326 | | | |
| | SMU | 0.285 | 0.108 | 2.636 | .00 | 0.072 | 0.497 | | | |
| Dependent variable | BHS | $\beta$ | SE | $t$ | $P$ | LLCI | ULCI | $P$ | $R^2$ | $F$ |
| Independent variable | Stabilized | 0.136 | 0.519 | 0.263 | .792 | –0.883 | 1.157 | .000** | 0.42 | 426.399 |
| | NES | 0,.307 | 0.044 | 20.65 | .00 | 0.277 | 0.335 | | | |

**$P$ < .001.
NES, negative emotional state; SMU, social media use; BHS, Beck Hopelessness Scale; SE, standard error.

**Table 3.** Findings About Direct and Indirect Effects of Social Media Use in Effect of Negative Emotional State on Hopelessness

| Effect (without mediator) | *β* | SE | LLCI | ULCI | *t* | *P* | Result |
|---|---|---|---|---|---|---|---|
| NES → BHS | 0.307 | 0.014 | 0.277 | 0.335 | 20.649 | .000** | Accepted |
| Direct effect (mediator) | *β* | SE | LLCI | ULCI | *t* | *P* | Result |
| NES → SMU→ BHS | 0.297 | 0.015 | 0.267 | 0.326 | 19.565 | .000** | Accepted |
| Indirect effect (mediator) | *β* | | | Reliability gap | | | Result |
| NES → SMU→ BHS | 0.010 | | | (0.002-0.017) | | | Meaningful (mediator) |

**$P < .001$; NES, negative emotional state; SMU, social media use; BHS, Beck Hopelessness Scale; SE, standard error; → = effect.

*emotional state predicts SMU*), and $H_4$ (*SMU predicts hopelessness*) hypotheses are accepted.

In the study, the mediator role of SMU over the relation between negative emotional state and hopelessness was also analyzed (Table 3). The statistical meaningfulness of SPSS Process bootstrap analysis can be understood from BootLLCI and BootULCI effects. For the mediator variable to be meaningful, these 2 values must be in the same direction. In other words, in order to determine the mediator effect, the value 0 must not exist between low (BootLLCI) and high (BootULCI) reliability gaps.[29] The related findings can be seen in Table 3. In accordance with the analysis, it was determined that the direct effect of negative emotional state on hopelessness ($\beta = 0.306$) and the indirect effect of the mediator role of SMU ($\beta = 0.010$) have positive directions. The model is statistically meaningful ($P < .001$). It was determined that the total effect (direct effect + indirect effect) of negative emotional state on hopelessness has a positive direction and is statistically meaningful ($P = .000 < .001$). Findings show that the SMU has a mediator role over the relation between independent and dependent variables, but this effect is partial. According to this information, it can be said that SMU partly affects this relation as the mediator variable. In order to test whether the independent variable has any meaningful indirect effect over the dependent variable the Sobel test was utilized. The Sobel test result came out to be $Z = 2.837$ and $P = .004$. As $2.837 > 1.96$, it is accepted that the mediator effect is meaningful, and there is a mediator role.[30] Thus, hypothesis $H_5$ (*SMU has a mediator effect on the impact of negative emotional state on hopelessness*) is accepted.

## Discussion

In this study, the negative emotional state and hopelessness level of young adults during COVID-19 period are analyzed, and it was tried to find out whether SMU has a mediator role over the relation between variables.

The first finding of the study is that the participants have a severe level of negative emotional state and intermediate level of hopelessness. This finding supports the findings of other studies which claim that COVID-19 period has an impact over young adults.[3,4] As mentioned previously, the uncertainty and lack of social interactions that stem from COVID-19 outbreak resulted in fear and anxiety. This condition supports the idea that individuals may experience emotional disorder upon the loss of symbolic objects. Strict rules limited social life/interactions and uncertainty about when these restrictions will end during the critical young-adulthood period, which is full of education, career, and future and marriage plans and of high significance in terms of life and development, which may cause stress.[5] During the outbreak process, emergence of new waves and peaks of number of cases, emergence of related precautions, widespread information pollution by social media and getting exposed to these experiences again and again may have made people focus on false patterns and lead to repeated false evaluations.[31] During the COVID-19 period, the wrong cognitive evaluations for risks and conditions are suspected to have impacts on emotional state.

The second finding of the study shows that there is a positive relationship between negative emotional state and hopelessness, and negative emotional state increases the hopelessness level. The findings support the findings in the literature.[32] With the study that was carried out by Padmanabhanunni and Pretorius[4] on young adults in South Africa, it was found out that there is a positive relationship between the hopelessness level of young adults, who are isolated from social life, and depression. As stated previously, this positive relationship may be thought to stem from stressful/traumatic experiences. The mental structure of individuals is formed by the interaction of social environment, biological structure, emotional and cognitive structure, and behaviours.[31] Because of the social, economic, and physiological problems, it creates the COVID-19 outbreak, which functions as a significant stressor affecting human life directly, is a global traumatic experience for the young adults who had never experienced such a thing previously, and can be regarded as a significant factor in developing mood disorders.

A positive relationship was discovered between negative emotional state and SMU, and with the regression analysis it was determined that negative emotional state increases the SMU. Findings of the study have similarities with the outcomes of previous studies.[12-14] This result confirms the assumptions of the self-medication hypothesis. The young adults may regard the internet as a medium to avoid negative mental states like loneliness and anxiety and to initiate new social support webs.[10] Besides, the young adults may be using the social media so often with the purposes of learning about the disease and decreasing their anxiety, learning how to protect themselves from the disease, finding pass time activities, sharing experiences, and relaxing.

The fourth finding of the study shows that even when the intermediary variable is absent, there is a positive relationship between SMU and hopelessness, and when the SMU increases so does the hopelessness. The finding of the study has similarities with the outcomes of previous studies.[18,34] This situation may stem from the internet use's evolving into addiction and its potential to harm psychological welfare of individuals.[10] During the COVID-19 period, as well as the correct information, misinformation became widespread and amplified the negative effects of the pandemic.[17] The study carried out in USA showed that the individuals who are about to share posts about COVID-19 do not think enough about the truthfulness and accuracy of the context of their posts. To be able to realize the truthfulness of the posts, social media users must have a high level of medical information.[33] Those who have medical education can understand this kind of information in the most accurate way. People without any medical information may spread false information about disease through social media. Excessive misinformation about Covid-19 on social media platforms may have increased the fear, anxiety, and hopelessness level of the young adults.[34]

The fifth and the most significant finding of the study shows that the SMU have an intermediary variable role over the relationship between negative emotional state and hopelessness. Social media use has a partial intermediary effect on these 2 variables. Thus, it can be concluded

that the negative emotional state increases the SMU, and higher the SMU so is the hopelessness. In the literature, there are no studies which analyze the variables of this study together. However, in the studies which analyze similar variables, the intermediary role of the internet addiction and SMU was put forth.[10] Baron and Kenny claims that when there is partial intermediary effect, in addition to the intermediary variable which is utilized for the relationship between independent and dependent variables, the effect of other variables should be taken into consideration.[35] From this point of view, it is possible to suspect that for the relationship between negative emotional state and hopelessness, as well as SMU, variables such as isolation, fear of death, and social support may have an intermediary role. Analysis of the intermediary role of other possible variables is of significance for future studies.

It was found out that the negative emotional state and hopelessness level of the young adults is significantly high. In this context, it is important to develop a system integrating mental health services and first-level healthcare services in order to fight the Covid-19 pandemic. Thanks to the initial level of mental care services, which have become widespread globally, mental health checks are applied to populations, and the problems are intervened even before they become more serious. Within the collective perspective, mental health service groups, which consist of family practitioners, psychologists, and social service specialists, should be constituted at family practice centers which make the initial-level healthcare facilities. Physiologic, psychologic, and social dimensions of healthcare services, which are defined as bio-psycho-social welfare, should be able to be delivered at facilities that are easy to reach.

The research has some limitations. The first is the collection of research data via internet due to some restrictions under COVID-19 precautions. It is difficult to control the low response rate and non-response bias in the internet-based survey process. Second, in this study, SMU was examined in the relationship between negative emotional state and hopelessness. Since there are only a few studies on the subject, researchers have a difficulty in comparing the findings of the present study with the findings of the other researchers.



**Ethics Committee Approval:** Ethical committee approval was received from the Ethics Committee of Sivas Cumhuriyet University (Date: January 31, 2022, No: E-60263016-050.06.04-125704).

**Informed Consent:** Written informed consent was obtained from all participants who participated in this study.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept – M.Ö., A.T., B.M.G., İ.A.; Design – M.Ö., A.T., B.M.G.; Supervision – M.Ö., A.T., B.M.G., İ.A.; Funding – M.Ö., A.T.; Materials – M.Ö., A.T.; Data Collection and/or Processing – M.Ö., A.T.; Analysis and/or Interpretation – M.Ö., A.T.; Literature Review – M.Ö., A.T., B.M.G., İ.A.; Writing – M.Ö., A.T., B.M.G., İ.A.; Critical Review – M.Ö., A.T., B.M.G., İ.A.

**Declaration of Interests:** The authors declare that they have no competing interest.

**Funding:** The authors declared that this study has received no financial support.

## References

1. Czeisler MÉ, Lane RI, Petrosky E, et al. Mental health, substance use, and suicidal ideation during the COVİD-19 pandemic-united states, June 24-30, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(32):1049-1057. [CrossRef]
2. Newby JM, O'Moore K, Tang S, Christensen H, Faasse K. Acute mental health responses during the COVİD-19 pandemic in Australia. *PLOS ONE*. 2020;15(7):e0236562. [CrossRef]
3. Ozamiz-Etxebarria N, Dosil-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Stress, anxiety, and depression levels in the initial stage of the COVİD-19 outbreak in a population sample in the northern Spain. *Cad Saude Publica*. 2020;36(4):e00054020. [CrossRef]
4. Padmanabhanunni A, Pretorius T. The loneliness–life satisfaction relationship: the parallel and serial mediating role of hopelessness, depression and ego-resilience among young adults in South Africa during Covid-19. *Int J Environ Res Public Health*. 2021;18(7):1-10. [CrossRef]
5. Freud S. In: Strachey J, ed. *The Standard Edition of the Complete Psychological Works of Sigmund Freud. Mourning and Melancholia*. London: The Hogarth Press and the Institute of Psycho-Analysis; 1917:243-258.
6. Alloy LB, Abramson LY, Hogan ME, et al. The Temple-Wisconsin cognitive vulnerability to depression project: lifetime history of axis I psychopathology in individuals at high and low cognitive risk for depression. *J Abnorm Psychol*. 2000;109(3):403-418. [CrossRef]
7. Brailovskaia J, Truskauskaite-Kuneviciene I, Margraf J, Kazlauskas E. Coronavirus (COVID-19) outbreak: addictive social media use, depression, anxiety and stress in quarantine – an exploratory study in Germany and Lithuania. *J Affect Disord Rep*. 2021;5:100182. [CrossRef]
8. Johnson J. Coronavirus: impact on online usage in the U.S. - Statistics & Facts; 2021. https://www.statista.com/topics/6241/coronavirus-impact-on-online-usage-in-the-us/, Accessed February 12, 2022.
9. Yıldırım O, İpek İ. Internet and social media use in the period of social isolation and voluntary quarantine which comes to the agenda due to the new coronavirus outbreak. *J Com Theor Res* 2020;52:69-94. [CrossRef]
10. Lai CM, Mak KK, Watanabe H, et al. The mediating role of Internet addiction in depression, social anxiety, and psychosocial well-being among adolescents in six Asian countries: a structural equation modelling approach. *Public Health*. 2015;129(9):1224-1236. [CrossRef]
11. Ohannessian CM, Fagle T, Salafia C. Social media use and internalizing symptoms during early adolescence: the role of co-rumination. *J Affect Disord*. 2021;280(A):85-88. [CrossRef]
12. Lin LY, Sidani JE, Shensa A, et al. Association between social media use and depression among US young adults. *Depress Anxiety*. 2016;33(4):323-331. [CrossRef]
13. Odacı H, Çıkrıkcı Ö. Differences in problematic internet use based on depression, anxiety, and stress levels. *Addicta*. 2017;4(1):41-61. [CrossRef]
14. Pantic I, Damjanovic A, Todorovic J, et al. Association between online social networking and depression in high school students: behavioral physiology viewpoint. *Psychiatr Danub*. 2012;24(1):90-93.
15. Duradoni M, Innocenti F, Guazzini A. Well-being and social media: a systematic review of Bergen addiction scales. *Future Internet*. 2020;12(2):1-13. [CrossRef]
16. Marttila E, Koivula A, Räsänen P. Does excessive social media use decrease subjective well-being? A longitudinal analysis of the relationship between problematic use, loneliness and life satisfaction. *Telemat Inform*. 2021;59:1-11. [CrossRef]
17. World Health Organization. *Coronavirus Disease 2019 (COVİD-19) Situation Report – 86*; 2020. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200415-sitrep-86-Covid-19.pdf?sfvrsn=c615ea20_6, Accessed February 15, 2022.
18. Aalbers G, McNally RJ, Heeren A, de Wit S, Fried EI. Social media and depression symptoms: a network perspective. *J Exp Psychol Gen*. 2019;148(8):1454-1462. [CrossRef]
19. Kırcaburun K, Kokkinos CM, Demetrovics Z, Király O, Griffiths MD, Çolak TS. Problematic online behaviors among adolescents and emerging adults: associations between Cyberbullying perpetration, problematic social media use, and psychosocial factors. *Int J Ment Health Addiction*. 2019;17(4):891-908. [CrossRef]
20. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psyc Res*. 2020;288:1-6. [CrossRef]
21. Türkiye Istatistik Kurumu. Address based population registration system results, 2021; 2022. https://data.tuik.gov.tr/Bulten/Index?p=Adrese-Dayali-Nufus-Kayit-Sistemi-Sonuclari-2021-45500, Accessed February 7, 2022.
22. Sekaran U, Bougie R. *Business Research Methods: A Skill-Building Approach*. 7th ed. UK: John Wiley&Sons; 2016.
23. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav Res Ther*. 1995;33(3):335-343. [CrossRef]
24. Sarıçam H. The psychometric properties of Turkish version of Depression Anxiety Stress Scale-21 (DASS-21) in health control and clinical samples. *J Cogn Behav Psychother Res*. 2018;7(1):19-30. [CrossRef]

25. Beaufort IN, De Weert-Van Oene GH, Buwalda VAJ, de Leeuw JRJ, Goudriaan AE. The depression, anxiety and stress scale (DASS-21) as a screener for depression in substance use disorder inpatients: A pilot study. *Eur Addict Res*. 2017;23(5):260-268. [CrossRef]
26. Beck AT, Weissman A, Lester D, Trexler L. The measurement of pessimism: the hopelessness scale. *J Consult Clin Psychol*. 1974;42(6):861-865. [CrossRef]
27. Beck AT, Steer RA. *Beck Hopelessness Scale* [manual]. USA: The Psychological Corporation. Harcourt Brace Jovanovich; 1993.
28. Seber G, Dilbaz N, Kaptanoğlu C, Tekin D. Hopelessnes Scale: validity and reliability. *J Crisis*. 1993;1(3):139-142.
29. Hayes AF. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: The Guilford Press; 2013.
30. Sobel ME. Asymptotic confidence intervals for indirect effects in structural equation models. *Sociol Methodol*. 1982;13:290-312. [CrossRef]
31. Türkçapar MH. *Cognitive Behavioral Therapy: Basic Principles and Application*. 16th ed. İstanbul: Epsilon Press; 2018.
32. Demir Y, Kumcağız H. The effect of eating attitude disorder in adolescents on subjective wellbeing, depression, anxiety and stress. *Int J Field Educ*. 2020;6(1):24-36. [CrossRef]
33. Pennycook G, McPhetres J, Zhang Y, Lu JG, Rand DG. Fighting COVID-19 misinformation on social media: experimental evidence for a scalable accuracy-nudge intervention. *Psychol Sci*. 2020;31(7):770-780. [CrossRef]
34. Garfin DR, Silver RC, Holman EA. The novel coronavirus (COVID-2019) outbreak: amplification of public health consequences by media exposure. *Health Psychol*. 2020;39(5):355-357. [CrossRef]
35. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J Pers Soc Psychol*. 1986;51(6):1173-1182. [CrossRef]