MEDICAL RECORDS-International Medical Journal

Research Article

COVID-19 Anxiety and Eating Behaviors Among Patients Attending the Emergency Department: A Cross-Sectional Study

Aytug Turk[1], Hatice Sahan[2], Seyda Dulgerler[3]

[1]Muğla Sıtkı Koçman University, Faculty of Health Sciences, Department of Mental Health Nursing, Muğla, Türkiye
[2]Ege University, Institute of Health Sciences, Department of Psychiatric Nursing, İzmir, Türkiye
[3]Ege University, Faculty of Nursing, Department of Mental Health and Disease Nursing, İzmir, Türkiye

Abstract

Aim: This study aimed to examine the relationship between COVID-19 anxiety and food cravings among adults and to identify the factors influencing this relationship.

Material and Method: This descriptive and cross-sectional study collected data from 265 individuals who agreed to participate between November 2021 and February 2022. Data collection tools included the Sociodemographic Data Form, the COVID-19 Anxiety Scale (CAS), and the Food Craving Questionnaire (FCQT-R). Analyses included means, standard deviations, percentages, independent t-tests for comparisons between groups, one-way ANOVA for comparisons among more than two groups, Pearson correlation analysis to determine relationships among scales, and linear regression analysis.

Results: The mean COVID-19 Anxiety Scale score was 3.63±3.06, while the mean Food Craving Questionnaire score was 37.64±10.62. A positive, moderate, and significant correlation was found between COVID-19 anxiety and food craving levels (r=.368, p<.001). Additionally, COVID-19 anxiety accounted for 12.8% of the variance in food craving levels (R^2=0.128, F=38.43, p<.001).

Conclusion: The study revealed that certain sociodemographic characteristics, including age, marital status, and education level, significantly influenced COVID-19 anxiety and food cravings, and an increase in COVID-19 anxiety was associated with an increase in food cravings.

Keywords: COVID-19 anxiety, food cravings, emergency department

INTRODUCTION

The COVID-19 pandemic has had significant and enduring effects on health, economy, and social life globally since 2020. This process has substantially impacted individuals' mental health, leading to notable increases in anxiety and stress levels (1). Studies have shown that anxiety and depression rates worldwide have increased by more than 25% since the onset of the pandemic, highlighting the significant psychological burden imposed on individuals during this challenging period (2). This increase highlights the psychological burden imposed on individuals during this challenging period.

Anxiety is a complex condition that profoundly affects individuals' daily lives, thoughts, and behaviors (3). It is particularly detrimental to mental health in environments dominated by uncertainty and fear, such as during a pandemic (4). Research indicates that the causes of anxiety experienced by individuals post-COVID-19 include fear of contracting the virus, concerns about losing loved ones, difficulties accessing healthcare services, financial struggles, and job losses, all of which have negatively impacted individuals' mental health. Quarantine measures and the loneliness caused by social isolation have also been identified as major contributors to heightened anxiety levels (5). The effects of the COVID-19 pandemic have been experienced differently across all age groups. Social determinants such as quarantine, social isolation, and income loss have significantly increased anxiety levels in every age group (6). Studies have found that adolescents

faced heightened anxiety due to uncertainty about their future during the pandemic (7). A global study revealed that the prevalence of depression and anxiety symptoms during COVID-19 doubled among children and adolescents compared to pre-pandemic estimates (8). Meanwhile, in older age groups, factors such as the increased risk of illness and the presence of chronic health conditions were identified as significant contributors to COVID-19-related anxiety (9). It has been reported that approximately 65% of older adults experienced an increase in anxiety levels during the pandemic (10).

During the pandemic, individuals sought various coping mechanisms to manage increased stress and uncertainty. Among these, eating behaviors have often become a tool for stress management, with unhealthy coping strategies such as emotional eating emerging prominently. The literature suggests that during periods of anxiety, the body requires more calories to meet its energy needs, which is considered a factor that triggers food cravings (10-13). Stress- and anxiety-induced eating behaviors may provide temporary relief but can have long-term adverse effects on physical and psychological health. While anxiety triggers overeating or unhealthy eating habits in some individuals, it can lead to loss of appetite and reluctance to eat in others (14). Factors such as personality traits, emotional states, anxiety levels, general health status, stress-coping skills, and psychological resilience play a determining role in this variability (15-17). In this context, examining the psychological and physiological effects of COVID-19 anxiety on food cravings is an important subject.

The uncertainty created by the pandemic, prolonged quarantine periods, social isolation, and changes in social determinants of health, such as income and job losses, have also led to significant alterations in eating attitudes (18-20). Understanding the relationship between anxiety and eating behaviors is essential for protecting mental health and maintaining healthy eating habits, especially during crisis periods like pandemics. Studies in the literature generally evaluate pandemic-related anxiety using tools such as the Beck Anxiety Inventory, which measure general anxiety. However, studies specific to COVID-19 anxiety have primarily focused on concepts like hopelessness, sleep problems, and psychological resilience (21-26). Furthermore, existing literature has identified that COVID-19 anxiety triggers emotional eating (27,28). However, studies specifically examining its effects on food cravings remain scarce. Therefore, this study aims to investigate the relationship between COVID-19 anxiety and food cravings in adults, as well as the factors influencing this relationship.

Research Questions

- What are the levels of COVID-19 anxiety and food cravings among individuals?
- How do individuals' sociodemographic characteristics affect COVID-19 anxiety levels and food cravings?
- Is COVID-19 anxiety a predictor of food cravings?

MATERIAL AND METHOD

Study Type

This study was designed as a descriptive, cross-sectional research project.

Study Setting

The research was conducted between November 2021 and February 2022 in the emergency department of a district state hospital. Data were collected from individuals attending the outpatient clinic.

Population and Sample

The study sample was determined based on a previous study by Dalmaz and Şahin, using the G-Power 3.1.9.2 software. With a confidence interval of 80%, a sampling error of ±5%, and an effect size of 0.35, the required sample size was calculated as 208 participants. However, the study was completed with 265 patients. The sample consisted of patients directed to the "green zone" by the admissions unit and those who remained in this zone after examination. Relevant scales and forms were administered in an unused clinic room after the completion of discharge procedures.

Data Collection Tool

The Sociodemographic Data Form, consisting of 9 questions, was used to collect demographic information about individuals, the COVID-19 Anxiety Scale (CAS) was applied to assess COVID-19-related anxiety, and the Food Craving Questionnaire (FCQT-R) was used to determine food cravings.

Sociodemographic Data Form: Created by the researchers, this form collected information on participants' age, gender, education level, marital status, parental status, employment status, and history of COVID-19 infection.

COVID-19 Anxiety Scale (CAS): Developed by Lee to measure anxiety levels related to COVID-19 during the pandemic, the scale's Turkish validity and reliability were established by Biçer et al. (29). The scale consists of 5 items scored on a scale from 0 ("never") to 4 ("almost every day"), with total scores ranging from 0 to 20. Higher scores indicate greater levels of COVID-19-related anxiety. The scale does not include any subscales. The Cronbach's alpha reliability coefficient was reported as 0.83 in the Turkish adaptation and calculated as 0.79 in this study.

Food Craving Questionnaire (FCQT-R): Originally developed by Cepeda-Benito et al. (2000) and revised into a short form (15 items) by Meule et al. (2014), the Turkish validity and reliability study was conducted by Traş and Gökçen (2021) (30). The 6-point Likert scale ranges from 15 to 90, with higher scores indicating higher food cravings. The scale consists of two subscales; preoccupation with eating thoughts and loss of control over eating. The Cronbach's alpha reliability coefficient was reported as 0.94 in the Turkish version and calculated as 0.87 in this study.

Data Collection

During data collection, pandemic-related guidelines were strictly followed, and factors that could compromise the reliability of the study were identified. Exclusion criteria (e.g., patients admitted with a COVID-19 pre-diagnosis, those with mental retardation or acute psychosis) were determined in collaboration with the unit's chief physician. After providing verbal information about the study, verbal consent was obtained from participants, and the scales were administered sequentially by the researcher. Due to restrictions on research permissions during the pandemic and to minimize risks to patients' health, the study was conducted only in the institution where one of the researchers was employed.

Data Analysis

The dependent variables of the study were COVID-19 anxiety and food craving levels, while independent variables included sociodemographic data (age, gender, education level, marital status, parental status, employment status, and history of COVID-19 infection). Data was processed and analyzed using IBM SPSS Statistics 23. Descriptive statistics included frequency (n) and percentage (%) for categorical variables and mean±standard deviation for continuous variables. Normality of continuous data was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. For group comparisons, independent samples t-tests and one-way ANOVA were used for normally distributed data. Pearson correlation analysis evaluated relationships between scales, and multiple linear regression was used to assess predictors. Results were interpreted at a 95% confidence level with a significance threshold of $p<0.05$.

Ethical Considerations

Prior to the study, ethical approval was obtained from the Ege University Medical Research Ethics Committee (dated 29.07.2021, Decision No: 21-7.1T/13), the Scientific Research Platform of the Ministry of Health (dated 15.01.2021, Decision No: T02-26-58), and the institution where the research was conducted. The study was carried out in accordance with ethical principles for research and publication.

RESULTS

It was determined that 25.7% of the individuals participating in the study were aged 55 and above, 50.9% were female, 71.7% were married, 43% had primary school education, 61.1% lived with their families, 61.9% were employed, 53.6% had children and 60% had previously contracted COVID-19 (Table 1).

The mean scores for participants' CAS and FCQT-R are presented in Table 2. Accordingly, the mean score for CAS is 3.63±3.06, the mean score for FCQT-R is 37.64±10.62, the mean score for the "Preoccupation with Thoughts of Eating" subscale is 23.18±7.89, and the mean score for another "Preoccupation with Thoughts of Eating" subscale is 19.12±7.12 (Table 2).

Table 1. Socio-demographic characteristics of the participants (n=265)		
Socio-demographic characteristics	n	%
Age		
24≥	31	11.7
25-34	53	20.0
35-44	57	21.5
45-54	56	21.1
55≤	68	25.7
Gender		
Male	130	49.1
Female	135	50.9
Marital status		
Married	190	71.7
Single	65	28.3
Education status		
Literate	47	17.8
Primary education	114	43.0
High school	71	26.8
University	33	12.5
With whom they live		
Single	72	27.2
Family	162	61.1
Roommate	31	11.7
Employment status		
Working	164	61.9
Not working	101	38.1
Parental status		
Yes	142	53.6
No	123	46.4
History of COVID-19		
Yes	105	40.0
No	159	60.0
Presence of chronic disease		
Yes	86	32.5
No	179	67.5
TOTAL	265	100

Table 2. Participants' mean scores for the "COVID-19 Anxiety Scale" and "Food Craving Scale" (n=265)			
Scales	Points available	Score received	$\overline{X}$±SD
COVID-19 Anxiety Scale (CAS)	0-20	1-14	3.63±3.06
Food Craving Questionnaire (FCQT-R)	0-90	6-69	37.64 ±10.62
Preoccupation with eating thoughts	0-54	2-39	23.18 ±7.89
Loss of control over eating	0-36	1-31	19.12 ±7.12

$\overline{X}$=mean, SD=standart deviation

The variations in the mean scores of CAS and FCQT-R based on socio-demographic variables are presented in Table 3. Accordingly, it was determined that the variables of age, education, and the presence of chronic diseases created a significant difference among groups for CAS. Post-hoc multiple comparisons conducted to identify the source of this difference revealed that CAS scores increased across all groups as age increased, whereas CAS scores statistically decreased across all groups as education level increased (p<.05).

When examining participants' FCQT-R scores, it was found that age and marital status significantly differed among groups. Post-hoc multiple comparisons conducted to determine the source of this difference for the age variable showed that participants aged 24 and below had statistically higher FCQT-R scores compared to participants in other age groups. Regarding marital status, single participants were observed to have higher FCQT-R scores compared to married participants (p<.05) (Table 3).

Table 3. Mean Scores of the "COVID-19 Anxiety Scale" and "Food Craving Scale" according to participants' socio-demographic characteristics (n=185)				
Socio-demographic characteristics	COVID-19 Anxiety Scale	Test/p	Food Craving Questionnaire	Test/p
Age				
24≥[a]	1.51±3.25		47.23±16.52a	
25-34[b]	1.69±3.17		38.3±11.58b	
35-44[c]	3.32±2.63	F=15.53 p=.001*	36.75±7.81b	F=2.52 p=.042*
45-54[d]	3.51±2.02		37.37±10.03b	
55≤[e]	3.83±2.79		37.48±12.03b	
Gender				
Male	3.32±3.13	t=-.76 p=.442	37.21±10.24	t=-1.58 p=.114
Woman	3.58±2.97		39.34±11.63	
Marital status				
Married	3.47±2.84	t=1.94 p= .53	37.45±10.1	t=-2.34 p=.02*
Single	2.54±3.64		41.47±13.28	
Education status				
Literate	4.19±2.78		40.14±11.78	
Primary education	4.03±2.77	F=7.07 p=.001*	38.71±11.05	F=1.02 p=.382
High school	2.74±3.04		37.26±11.09	
University	1.84±3.51		36.42±9.33	
Employment status				
Working	3.43±3.19	t=-.105 p=.916	38.78±11.41	t=1.03 p=.318
Not working	3.47±2.77		37.36±10.18	
Parental status				
Yes	3.57±3.14	t=.729 p=.466	38.28±10.61	t=-.006 p=.876
No	3.29±2.95		37.75±11.42	
History of COVID-19				
Yes	3.53±3.02	t=.404 p=.685	38.18±11.52	t=-.358 p=.721
No	3.37±3.05		39.24±10.4	
Presence of chronic disease				
Yes	3.22±3.13	t=2.45 p=.032	38.18±11.52	t=-.358 p=.721
No	2.25±3.63		39.24±10.4	
With whom they live				
Single	3.79±3.14		38.33±11.1	
Family	3.45±3.01	F=1.72 p=.181	37.93±10.83	F=.499 p=.608
Roommate	3.58±2.93		40.1±11.85	
F: One-Way Analysis of Variance (ANOVA), t: T-Test, *For data sets with n<30, normality was tested using the Shapiro-Wilk test, a<b<c<d ; according to the Bonferroni test, there is a statistically significant difference for CAS, a>b according to the Bonferroni test, there is a statistically significant difference for FCQT-R *p<.05				

"The results of the Pearson correlation analysis between the COVID-19 Anxiety Scale and the Food Craving Scale are presented in Table 4. Accordingly, a positive, significant, and moderate-level correlation was found between the level of COVID-19 anxiety and food craving (r=.368, p<.001). Additionally, significant positive correlations were identified with the subscales: preoccupation with food (r=.315, p<.01), loss of control (r=.342, p<.01), and emotional craving (r=.389, p<.001) (Table 4).

Table 4. The relationship between COVID-19 anxiety and food craving (Pearson correlation analysis) (n=185)

Variable		CAS
FCQT-R 1		
Preoccupation with	r	.368
Eating thoughts	p	.000*
FCQT-R 2		
Loss of control	r	.292
Over eating	p	.000*
FCQT-R total	r	.357
	p	.000*
CAS total	r	1
	p	.000*

*CAS: COVID-19 Anxiety Scale, FCQT-R: Food Craving Questionnaire** The correlation is significant at the .001 level

COVID-19 anxiety significantly predicts food craving at an advanced level (β=.357, t=6.2, p<.001). Additionally, COVID-19 anxiety explains a significant portion of the variance in food craving levels (12.8%) (R²=.128, F=38.43, p<.001) (Table 5).

Table 5. Predictive effect of COVID-19 anxiety on food craving (Results of simple linear regression analysis) (n=185)

Variable	N	B	SS	ß	t	F	p
CAS*	2655	1.25	.203	.357	6.2	38.43	.000**
R²=0.128							

*CAS: COVID-19 Anxiety Scale, **p<.001, dependent variable: Eating Desire Scale

DISCUSSION

The pandemic has caused significant health, economic, and social uncertainties globally, resulting in notable changes in individuals' mental health. During this period, marked by heightened concerns about health, social isolation, and uncertainty, eating behavior has been framed as an emotional response directly associated with anxiety and uncertainty. In this context, the present study primarily examined the variability of COVID-19 anxiety and food cravings based on socio-demographic characteristics and subsequently investigated the relationship between COVID-19 anxiety and eating behaviors.

Among socio-demographic factors, variables such as age, education level, and the presence of chronic diseases were found to create significant differences in COVID-19 anxiety levels across groups. Older individuals, those

with lower education levels, and those with chronic illnesses were found to have higher levels of COVID-19 anxiety. Notably, age significantly influenced participants' COVID-19 anxiety levels (p<.001). As age increased, anxiety levels also rose, indicating that older individuals experienced greater anxiety concerning the pandemic. Considering that advanced age and chronic illnesses are established risk factors for COVID-19, these findings align with existing literature (2). Additionally, education level significantly affected participants' anxiety levels. Individuals with lower education levels reported higher anxiety. It can be suggested that educated individuals, with greater access to information and awareness about health precautions during the pandemic, are better equipped to manage anxiety. This finding aligns with previous studies emphasizing the critical role of education in managing stress, fear, and anxiety (31-33).

When examining the variability of food cravings based on socio-demographic factors, it was found that individuals under the age of 24 and single participants had higher food cravings. This finding corresponds with existing literature, which suggests that loneliness and emotional stress can trigger eating behaviors. Single individuals may lack family-based social support, making it more challenging to cope with stress and potentially leading to behaviors such as emotional eating (34,35). Young individuals, particularly during the pandemic, may be more inclined toward emotional eating as a means of coping with uncertainty and anxiety. Factors such as being more influenced by social media and peer pressure could exacerbate stress, contributing to emotional eating behaviors (36,37).

Regarding the relationship between COVID-19 anxiety and food cravings, which was one of the primary aims of this study, a moderate positive correlation was identified between the two variables. Specifically, as COVID-19 anxiety increased, food cravings also increased. Furthermore, COVID-19 anxiety was found to have a significant predictive effect on food cravings, explaining 12.8% of the variance (R²=.128, F=38.43, p<.001). This relationship highlights that food cravings, often considered an ineffective coping strategy, became more prominent during the pandemic as individuals struggled to manage stress and anxiety. Individuals who faced difficulties coping with the uncertainty and fear associated with the pandemic may have turned to overeating or emotional eating as a coping mechanism. Existing literature supports the notion that COVID-19 anxiety influences food cravings. Factors such as increased time spent at home, decreased physical activity levels, and limited social support during the pandemic may have led individuals to turn to eating behaviors as a way to suppress or cope with negative emotions (18). A meta-analysis conducted by Chang et al. revealed significant changes in body weight and body mass index (BMI) among school-aged children and adolescents during quarantine periods (38). Similarly, another meta-analysis by Anderson et al. identified significant increases in weight gain and obesity prevalence among both children and adults during the COVID-19 pandemic (39). Therefore, it can be argued that the findings of this study are consistent with those of

related meta-analyses. Importantly, it should be noted that while eating behaviors or thoughts may provide temporary relief in the short term, they could further harm individuals' emotional well-being in the long term. The findings of this study highlight the necessity of guiding individuals toward more functional coping strategies during stressful processes like the pandemic.

Limitations and Strengths

This study has some limitations that should be considered. The cross-sectional design prevents establishing causal relationships between COVID-19 anxiety and food cravings. Self-reported data may also introduce biases, such as overreporting or underreporting behaviors. Additionally, the sample may not fully represent all demographics, limiting the generalizability of findings. Cultural and regional differences in pandemic experiences, which could influence anxiety and eating behaviors, were not specifically addressed. Future studies should aim to overcome these limitations for a more comprehensive understanding.

CONCLUSION

The findings of the study indicate that COVID-19 anxiety increases individuals' food cravings, which emerged as an ineffective method of coping with stress and uncertainty. Additionally, socio-demographic factors were found to significantly affect both COVID-19 anxiety and food cravings. Specifically, age, education level, and the presence of chronic diseases significantly influenced anxiety levels, while younger individuals and single participants were found to have higher food cravings. These findings contribute to our understanding of the relationship between emotional and psychological well-being and eating behaviors during societal crises like the pandemic. Based on the study findings, healthcare providers are encouraged to implement strategies that address the mental health challenges heightened by the pandemic. Programs focusing on mindfulness-based stress management and emotion regulation can help individuals develop healthier coping mechanisms. Additionally, psychosocial support services should be tailored to high-risk groups, including older adults, individuals with chronic illnesses, and those with lower education levels, to mitigate anxiety and promote resilience. Training healthcare providers in managing pandemic-related mental health issues and promoting community-based interventions, such as awareness campaigns and nutritional counseling, can further support mental well-being. Strengthening health policies to improve access to mental health services and adopting a multidisciplinary approach are critical steps to addressing the psychological and behavioral impacts of the pandemic effectively.

Conflict of interest: The authors have no conflicts of interest to declare.

Ethical approval: Ege University Medical Research Ethics Committee (29.07.2021- 21-7.1T/13).

REFERENCES

1. Manchia M, Gathier AW, Yapici-Eser H, et al. The impact of the prolonged COVID-19 pandemic on stress resilience and mental health: a critical review across waves. Eur Neuropsychopharmacol. 2022;55:22-83.

2. Jordan RE, Adab P, Cheng KK. COVID-19: risk factors for severe disease and death. BMJ. 2020;368:m1198.

3. Craske MG, Rauch SL, Ursano R, et al. What is an anxiety disorder? Focus (Am Psychiatr Publ). 2011;9:369-88.

4. Pfefferbaum B, North CS. Mental Health and the COVID-19 Pandemic. N Engl J Med. 2020;383:510-2.

5. Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. Lancet. 2020;395:912-20.

6. Koçak O, Koçak ÖE, Younis MZ. The psychological consequences of COVID-19 fear and the moderator effects of individuals' underlying illness and witnessing infected friends and family. Int J Environ Res Public Health. 2021;18:1836.

7. Kaplan V, Kürümlüoğlugil R, Bütün B. The effect of the quarantine process due to the COVID-19 pandemic on adolescents' future expectations and anxiety levels. Journal of Child and Development. 2021;4:12-23.

8. Racine N, McArthur BA, Cooke JE, et al. Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: a meta-analysis. JAMA Pediatr. 2021;175:1142-50.

9. Qiu J, Shen B, Zhao M, et al. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. Gen Psychiatr. 2020;33:e100213. Erratum in: Gen Psychiatr. 2020;33:e100213corr1.

10. Gosselin P, Castonguay C, Goyette M, et al. Anxiety among older adults during the COVID-19 pandemic. J Anxiety Disord. 2022;92:102633.

11. Nutley SK, Falise AM, Henderson R, et al. Impact of the COVID-19 pandemic on disordered eating behavior: qualitative analysis of social media posts. JMIR Ment Health. 2021;8:e26011.

12. van der Kooij MA. The impact of chronic stress on energy metabolism. Mol Cell Neurosci. 2020;107:103525.

13. Block JP, He Y, Zaslavsky AM, et al. Psychosocial stress and change in weight among US adults. Am J Epidemiol. 2009;170:181-92.

14. Chankasingh K, Booth A, Albert A, et al. Coping during the COVID-19 pandemic: a mixed methods approach to understand how social factors influence coping ability. Heliyon. 2022;8:e10904.

15. Tınmazoğlu E, Doksat NG. Relationship between emotional eating and big five personality characteristics and mood disorder symptoms. Manas Journal of Social Studies. 2020;9:34-46.

16. Robert M, Shankland R, Bellicha A, et al. Associations between resilience and food intake are mediated by emotional eating in the NutriNet-Santé Study. J Nutr. 2022;152:1907-15.

17. Reents J, Seidel AK, Wiesner CD, Pedersen A. The effect of hunger and satiety on mood-related food craving. Front Psychol. 2020;11:568908.

18. Garipoğlu G, Bozar N. Changes in dietary habits of individuals in social isolation during the COVID-19 pandemic. Pearson Journal. 2020;6:100-13.

19. Cipolla C, Curatola A, Ferretti S, et al. Eating habits and lifestyle in children with obesity during the COVID-19 lockdown: a survey in an Italian center. Acta Biomed. 2021;92:e2021196.

20. O'Connor S, Bélanger-Gravel A,; iCARE study team. Social determinants of long-term reported changes in physical activity and healthy eating during the COVID-19 pandemic in Canada: Multiple cross-sectional surveys analysis from the iCARE study. Appl Physiol Nutr Metab. 2023;49:179-89.

21. Özmen S, Ocakdan UB. Examination of the effect of death anxiety level of nurses on psychological resilience during the COVID-19 pandemic. Süleyman Demirel University Visionary Journal. 2022;13:1224-36.

22. İri NİÖ, Korkmaz F. The Effect of individuals' coronavirus anxiety levels on their psychological resilience. GUJHS. 2021;10:769-71.

23. Yeşilyaprak T, Özsoy H, Korkmaz FD. Determining the relationship between anxiety, psychological resilience and perceived social support levels of surgical nurses in the COVID-19 period. Hemşirelik Bilimi Dergisi. 2023;6:18-25.

24. Yılmaz Z, İstemihan F, Arayıcı S, et al. The investigation of anxiety and hopelessness among individuals throughout COVID-19 outbreak. Kriz Dergisi. 2020;28:135-50.

25. Şahin B, Önal BS, Hoşoğlu E. Anxiety levels and sleep disturbance in children of healthcare workers with COVID-19. Turk J Child Adolesc Ment Health. 2021;28:41-8.

26. Erdoğdu Y, Koçoğlu F, Sevim C. An investigation of the psychosocial and demographic determinants of anxiety and hopelessness during COVID-19 pandemic. Turkish J Clin Psy. 2020;23:24-37.

27. Bemanian M, Mæland S, Blomhoff R, et al. Emotional eating in relation to worries and psychological distress amid the COVID-19 pandemic: A population-based survey on adults in Norway. Int J Environ Res Public Health. 2021;18:130.

28. Güner Ö, Aydın A. Determining the relationship between anxiety levels, stress coping styles, and emotional eating of women in the COVID-19 pandemic. Arch Psychiatr Nurs. 2022;41:241-7.

29. Biçer İ, Çakmak C, Demir H, Kurt ME. Coronavirus Anxiety Scale: Turkish validity and reliability study. Anatol Clin. 2020;25:216-25.

30. Traş Z, Gökçen G. Adaptation of the short version of the Food Cravings Questionnaire—trait to Turkish culture: a study of validity and reliability. Ahmet Keleşoğlu Faculty of Education Journal. 2021;3:200-15.

31. Türk A, Şahan H, Engin E. The relationship between fear of COVID-19 and satisfaction with life in patients admitted to the emergency department. EHD. 2023;16:447-59.

32. Joannès C, Redmond NM, Kelly-Irving M, et al. The level of education is associated with an anxiety-depressive state among men and women—findings from France during the first quarter of the COVID-19 pandemic. BMC Public Health. 2023;23:1405.

33. Ostberg V, Åhlén J, Brolin Låftman S. Educational attainment and symptoms of anxiety and depression in young adulthood. Eur J Public Health. 2023;33:ckad160-1578.

34. Huang Y, Su X, Si M, et al. The impacts of coping style and perceived social support on the mental health of undergraduate students during the early phases of the COVID-19 pandemic in China: A multicenter survey. BMC Psychiatry. 2021;21:530.

35. Yıldız K, Dirik D. The role of perceived self-efficacy in the relationship between perceived social support and ways of coping. SPORMETRE. 2019;17:132-44.

36. Suhag K, Rauniyar S. Social media effects regarding eating disorders and body image in young adolescents. Cureus. 2024;16:e58674.

37. Filippone L, Shankland R, Hallez Q. The relationships between social media exposure, food craving, cognitive impulsivity, and cognitive restraint. J Eat Disord. 2022;10:184.

38. Chang TH, Chen YC, Chen WY, et al. Weight gain associated with COVID-19 lockdown in children and adolescents: a systematic review and meta-analysis. Nutrients. 2021;13:3668.

39. Anderson LN, Yoshida-Montezuma Y, Dewart N, et al. Obesity and weight change during the COVID-19 pandemic in children and adults: A systematic review and meta-analysis. Obes Rev. 2023;24:e13550.