The Relationship between Pandemic-Related Anxiety, Eating Behaviors, and Life Satisfaction

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Abstract

Aim: The objective of the study was to examine the correlation between coronavirus anxiety, healthy eating, eating attitudes, and life satisfaction among adults.

Method: The research was carried out using an online survey with 408 participants aged 18– 65 years (mean age: 34.43±9.92). It was utilized Coronavirus Anxiety Scale (CAS), Attitude Scale for Healthy Nutrition(ASHN), the Three-Factor Eating Questionnaire (TFEQ-R21), and Satisfaction with Life Scale in Adults (SWLS-A).

Results: The total scores of the CAS, ASHN, TFEQ-R21, and SWLS-A scales were found to be statistically significantly higher in women compared to men ($p<0.05$). When a cut off score of ≥9 was applied for the CAS, a statistically significant positive correlation was observed between the CAS and the total score of the TFEQ-R21, as well as its subscales Cognitive Restraint (CR) and Emotional Eating (EE) ($p<0.05$). In addition, weak positive correlations were detected between ASHN and SWLS-A and between CAS and TFEQ-R21 ($p<0.05$). A weak negative correlation was found between TFEQ-R21 and SWLS-A ($p<0.05$).

Conclusion: The results suggest that pandemic-related anxiety was higher particularly among women and that higher anxiety levels were linked to increased cognitive restraint and emotional eating behaviors. Moreover, healthy eating attitudes were positively related to life satisfaction, whereas problematic eating behaviors were negatively associated.

Keywords: Pandemic-related anxiety, healthy eating, eating attitudes, life satisfaction.

Pandemiye Bağlı Anksiyetenin Beslenme Davranışları ve Yaşam Memnuniyeti ile İlişkisi

Öz

Amaç: Bu çalışmada yetişkin bireylerde koronavirüs anksiyetesinin sağlıklı beslenme, yeme tutumu ve yaşam doyumu ile ilişkisinin araştırılması amaçlanmaktadır.

Yöntem: Bu çalışma 18-65 yaş arasında, yaş ortalaması 34,43±9,92 yıl olan 408 katılımcı ile çevrimiçi anket yöntemi kullanılarak gerçekleştirilmiştir. Çalışmada, Koronavirüs Anksiyete Ölçeği (CAS), Sağlıklı

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ETHICAL STATEMENT: This descriptive cross-sectional study was carried out from May to June 2021 with individuals aged 18 to 65 who voluntarily agreed to participate. Ethical approval for the research was granted by the Ethics Committee of Istanbul Okan University on April 14, 2021.

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Beslenmeye İlişkin Tutum Ölçeği (SBİTÖ), Üç Faktörlü Yeme Ölçeği (TFEQ-R21), Yetişkinlerde Yaşam Doyum Ölçeği (YYDÖ) kullanılmıştır.

Bulgular: CAS, SBİTÖ, TFEQ-R21, YYDÖ ölçeklerinin tamamının toplam puanları kadınlarda erkeklerden istatistiksel olarak daha yüksek bulunmuştur ($p<0,05$). CAS ≥ 9 kesim puan ile TFEQ-R21 puanı ve onun alt ölçekleri olan bilişsel kısıtlama (BK), duygusal yeme (DY) puanları arasındaki istatistiksel olarak pozitif yönlü anlamlı ilişki bulunmuştur ($p<0,05$). Ayrıca hem SBİTÖ ile YYDÖ arasında hem de CAS ile TFEQ-R21 arasında zayıf düzeyde pozitif korelasyon saptanmıştır ($p<0,05$). TFEQ-R21 ile YYDÖ arasında zayıf düzeyde negatif korelasyon tespit edilmiştir ($p<0,05$).

Sonuç: Bu çalışmanın sonuçları, pandemi dönemine bağlı anksiyetenin özellikle kadınlarda daha yüksek olduğunu ve yüksek anksiyete düzeyine sahip bireylerde bilişsel kısıtlama ile duygusal yeme davranışlarının arttığını göstermektedir. Ayrıca sağlıklı beslenme tutumlarının yaşam memnuniyetiyle pozitif, sorunlu yeme davranışlarının ise negatif yönde ilişkili olduğu saptanmıştır.

Anahtar Sözcükler: Pandemiyle ilgili anksiyete, sağlıklı yeme, yeme tutumu, yaşam doyumu.

Introduction

During the Covid-19 period, many countries took radical measures[1]. In such a situation, individuals are likely to experience fear of illness, death, helplessness, and lack of access to help[2]. While being reasonably cautious during a pandemic can help protect individuals' health, excessive negative thoughts related to the infection can have adverse effects on well-being[3].

Healthy nutrition is the intake of various nutrients required by individuals based on their age, gender, body weight, physical activity, and genetic factors. According to the Turkey Nutrition Guide (TÜBER), proper nutrition not only ensures the continuation of life but is also essential for growth, development, and productivity at all ages[4]. Healthy eating is a significant factor in preventing deaths and many chronic diseases[5].

Nutrition is indispensable for sustaining life, and various biological, psychological, and environmental factors influence individuals' eating attitudes. As a result of these influences, behaviors such as overeating, inadequate nutrition, or eating disorders may occasionally occur[6,7].

Emotional eating behavior is linked to factors such as elevated dietary restraint and reduced interoceptive awareness, emotional dysregulation, and stress[8]. Emotional eating is associated with symptoms of depression, and mindfulness-based approaches have been reported to be beneficial for weight management[8-12].

Emotional eating is characterized by the inclination to consume food in response to emotional states, independent of hunger or scheduled mealtimes[13].Cognitive restraint refers to restrictive behavior such as reducing food portions and maintaining weight control. Uncontrolled eating, on the other hand, is evaluated as excessive in reaction to negative emotions or the appeal of food[10,11].

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Life satisfaction is the level of contentment that emerges from comparing what individuals want with what they have[14,15]. There are many factors that affect life satisfaction. Some of these include physical well-being, social attributes to life, daily happiness, and harmony in achieving personal goals[16]. Although the psychological impact of the COVID-19 pandemic has been widely studied, limited research has examined its relationship with healthy eating attitudes, eating behaviors, and life satisfaction simultaneously. This study addresses this gap by exploring the associations between COVID-19–related anxiety and eating behaviors, as well as overall life satisfaction, in adults. The findings contribute to a more comprehensive understanding of the behavioral consequences of pandemic-related anxiety.

Material and Methods

Using a sampling method for an unknown population size, the minimum sample size was determined to be 377, based on a 95% confidence interval. Ultimately, 408 participants were included in the study.

The study was conducted using an online survey method administered via Google Forms, and participants were recruited using a convenience sampling method. The survey is composed of five sections. The first part of the questionnaire, which served as the instrument for data collection, consisted of questions associated with sociodemographic factors (age, educational attainment, employment status, chronic diseases, medication use, smoking, and alcohol consumption) and anthropometric measures [body mass index (BMI), height, body weight][17]. BMI was calculated by the researcher using the self-reported body weight and height values provided by the participants, based on the weight/height² formula. In this study, no specific cut-off values were established or applied for BMI. The remaining parts of the survey were composed of the Coronavirus Anxiety Scale (CAS), Attitude Scale for Healthy Nutrition (ASHN), Three-Factor Eating Questionnaire (TFEQ-R21), and Satisfaction with Life Scale in Adults (SWLS-A).

Coronavirus Anxiety Scale (CAS): The Coronavirus Anxiety Scale (CAS) is a 5-item Likert-type scale developed by Lee et al. (2020)[18] and adapted to Turkish by Evren et al. (2020)[1]. Each item is rated from 0 (never) to 4 (almost daily), yielding a total score ranging from 0 to 20, with higher scores indicating greater anxiety related to COVID-19[1,18].The Turkish adaptation was conducted with 1023 native Turkish-speaking participants recruited online and demonstrated satisfactory internal consistency (Cronbach's alpha = 0.80), supporting its reliability and validity[1]. In the original study, the CAS effectively differentiates individuals with dysfunctional anxiety from those without, using an optimized cutoff score of 9 (90% sensitivity and 85% specificity), and has been shown to be a valid and effective tool for both clinical research and practice[18]. Since no cutoff score has been established for the Turkish adaptation, the cutoff score of 9 from the original study was applied in the present research to evaluate participants' anxiety levels[1,18].

Attitude Scale for Healthy Nutrition (ASHN): Created by Tekkurşun Demir and Cicioğlu, (2019) the Attitude Scale for Healthy Nutrition (ASHN) is a 21-item, five-point

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Likert-type scale formulated to evaluate individuals' perspectives on healthy eating. The instrument assesses four dimensions: Nutritional Knowledge (NK), Emotions Toward Nutrition (ETN), Positive Nutrition (PN), and Poor Nutrition (PN). The authors performed psychometric analyses to establish the scale's validity and reliability. The score range spans from a minimum of 21 to a maximum of 105, with interpretations as follows: 21 indicates a very low level, 23–42 reflects a low level, 43–63 denotes a moderate level, 64–84 signifies a high level, and 85–105 represents an optimally high level of healthy nutrition attitudes[19].

Three-Factor Eating Questionnaire (TFEQ-R21): Created by Karakuş, Yıldırım, and Büyüköztürk (2016)[7]. This instrument evaluates eating behavior through three dimensions: Cognitive Restraint (CR), Uncontrolled Eating (UE), and Emotional Eating (EE). The Turkish version uses a four-option Likert-type scale format for all items. The subscale scores for the UE vary from 9 to 36, while the CR and EE subscales range from 6 to 24. After score transformation, TFEQ-R21 evaluates each eating behavior on a 0–100 scale. Elevated scores are associated with a greater tendency for that specific eating behavior[7].

Satisfaction with Life Scale in Adults (SWLS-A): Created by Kaba, Erol, and Güç (2018). Satisfaction with Life Scale in Adults (SWLS-A) has been validated for measuring life satisfaction in adults. The scale consists of 21 items, one of which is reverse-coded. The scale is based on a five-point Likert-type format, yielding total scores between 21 and 105, where higher scores reflect a more positive perception of life. The assessment tool comprises five factors: The first factor was defined as general life satisfaction, the second factor as relationship satisfaction, the third factor as self-satisfaction, the fourth factor as social environment satisfaction, and the fifth factor as job satisfaction[15].

Ethical Statement

This descriptive cross-sectional study was carried out from May to June 2021 with individuals aged 18 to 65 who voluntarily agreed to participate. Ethical approval for the research was granted by the Ethics Committee of Istanbul Okan University on April 14, 2021.

Statistical Analysis

The data collected in the study were analyzed using SPSS, version 25.0. Continuous variables derived from the questionnaires were presented as mean (M), standard deviation (SD), and minimum–maximum (min–max) values. Categorical variables were summarized using frequencies and percentages. The normality of continuous variables was assessed using the Kolmogorov–Smirnov test. Variables were analyzed using Independent Samples *t*-tests if normally distributed and Mann–Whitney U tests if not, as indicated in Tables 2 and 3. To investigate the associations between continuous variables, Spearman's rank-order correlation analysis was conducted. Results were considered statistically at $p<0.05$. Regarding the internal consistency of the scales, Cronbach's alpha coefficients were calculated as follows: 0.779 for the 21-item ASHN

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scale, 0.842 for the 5-item CAS scale, 0.898 for the 21-item TFEQ-R21, and 0.863 for the 21-item SWLS-A scale.

Results

Table 1. Anthropometric measurements and demographic data of the participants

		n	%	Mean ± SD	Min-Max
Gender	**Female**	267	65.44		
	Male	141	34.56		
Age (years)				34.43 ± 9.92	18 - 65
Weight (kg)				70.54 ± 15.10	45 - 130
Height (cm)				167.75 ± 8.52	150 - 197
BMI (kg/m²)				24.95 ± 4.34	16.98 - 47.75
	Primary school	17	4.17		
Educational	**High school**	48	11.76		
attainment	**University**	233	57.11		
	Master's/PhD	110	26.96		
Employment Status	**Yes**	307	75.25		
	No	101	24.75		
Diagnosed Disease	**Yes**	123	30.15		
	No	285	69.85		
Regular Medication	**Yes**	90	22.06		
Use	**No**	318	77.94		
Smoking	**Yes**	108	26.47		
	No	300	73.53		
Alcohol Use	**Yes**	93	22.79		
	No	315	77.21		

Data are presented as mean ± standard deviation (SD) and minimum–maximum (min–max). BMI: Body Mass Index S.D: Standard Deviation

The study comprised 408 participants, of whom 65.44% (n=267) were female and 34.56% (n=141) were male. The mean age was 34.43±9.92 years, mean body weight 70.54±15.10 kg, mean height 167.75 ± 8.52 cm, and mean Body Mass Index (BMI) 24.95±4.34. Regarding educational status, 4.17% (n=17) had completed primary school, 11.76% (n=48) high school, 57.11% (n=233) held a university degree, and 26.96% (n=110) held a graduate degree (master's or PhD). Participants were classified by employment status, with 75.25% (n=307) employed and 24.75% (n=101) not employed. Regarding health, 30.15% (n=123) reported having a diagnosed chronic illness, whereas 69.85% (n=285) reported no such condition. Additionally, 22.06% (n=90) reported regular use of medication, while 77.94% (n=318) did not. Lifestyle habits included 26.47% (n=108) smokers and 73.53% (n=300) non-smokers, while 22.79% (n=93) reported alcohol consumption and 77.21% (n = 315) reported none.

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Table 2. Relationship between participants' anthropometric measurements and demographic characteristics and ASHN, CAS, TFEQ-R21, and SWLS-A Scores

	ASHN		**CAS**		**TFEQ-R21**		**SWLS**	
	Mean ± SD	**Min-Max**	**Mean±SD**	**Min-Max**	**Mean±SD**	**Min-Max**	**Mean±SD**	**Min-Max**
Female	80.97 ± 9.05	41 - 99	2.17±3.13	0 - 17	44.74±18.94	4.76-96.83	80.22±9.20	50-103
Male	76.53 ± 9.68	51 - 98	1.39±2.70	0 - 16	38.89±16.79	4.76-98.41	77.91±9.15	51-104
p	**< 0.001[1]**		**< 0.001[1]**		**0.004[1]**		**0.016[2]**	
Employed	79.22 ± 9.55	41 - 99	1.96±3.10	0 - 17	42.86±17.94	4.76-98.41	79.30±9.21	50-104
Unemployed	80.09 ± 9.36	51 - 95	1.71±2.70	0 - 13	42.29±19.86	4.76-96.83	79.79±9.36	55-99
p	0.236[1]		0.949[1]		0.744[1]		0.643[2]	
Has a diagnosed illness	80.46 ± 9.43	51 - 99	2.20±3.32	0 - 16	45.55±17.49	4.76-85.71	79.11±8.99	50-104
Does not have a diagnosed illness	78.99 ± 9.51	41 - 98	1.77±2.86	0 - 17	41.49±18.70	4.76-98.41	79.55±9.35	51-103
p	0.227[1]		0.246[1]		**0.039[1]**		0.659[2]	
Takes medication regularly	81.17 ± 9.69	51-99	2.52±3.86	0 - 16	46.17±18.56	4.76-85.71	79.13±9.44	50-103
Does not take medication regularly	78.94 ± 9.40	41-99	1.72±2.70	0 - 17	41.74±18.29	4.76-98.41	79.50±9.19	51-104
p	0.093[1]		0.433[1]		**0.030[1]**		0.738[2]	
Smokes	76.18 ± 9.75	41-97	1.85±2.91	0 - 16	40.09±19.57	4.76-80.95	78.23±9.38	55-104
Does not smoke	80.61 ± 9.14	51-99	1.92±3.05	0 - 17	43.66±17.92	4.76-98.41	79.85±9.16	50-103
p	**< 0.001[1]**		0.963[1]		0.101[1]		0.119[2]	
Uses alcohol	77.05 ±10.23	41 - 97	2.16±3.50	0 - 16	41.95±20.56	4.76-98.41	77.59±9.61	50-98
Does not use alcohol	80.14 ± 9.17	51 - 99	1.82±2.85	0 - 17	42.94±17.76	4.76-96.83	79.96±9.07	55-104
p	**0.005[1]**		0.750[1]		0.869[1]		**0.029[2]**	
Age (years)	-0.083		-0.006		-0.213*		0.078	
Weight (kg)	-0.152*		-0.055		0.154*		-0.071	
Height (cm)	-0.143*		-0.061		-0.071		-0.059	
BMI (kg/m²)	-0.114*		-0.047		0.234*		-0.047	
Education Level	0.210*		0.015		0.083		-0.016	

Data are presented as mean ± standard deviation (SD) and minimum–maximum (Min–Max).
[1]Mann–Whitney U Test (non-parametric), [2]Independent Samples T-test (parametric)
BMI**:** Body Mass Index, CAS**:** Coronavirus Anxiety Scale, ASHN**:** Attitude Scale for Healthy Nutrition
TFEQ-R21: Three-Factor Eating Questionnaire–Revised 21, SWLS: Satisfaction with Life Scale (for Adults)

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Female participants had higher mean scores than male participants for ASHN, CAS, TFEQ-R21, and SWLS, with statistically significant differences ($p<0.05$). Participants with a diagnosed illness had higher mean TFEQ-R21 total scores than those without a diagnosed illness ($p<0.05$), while no significant differences were observed for ASHN, CAS, and SWLS scores ($p>0.05$). Participants reporting regular medication use had higher TFEQ-R21 scores than those not using medication regularly ($p<0.05$). Alcohol users had lower ASHN and SWLS scores compared to non-users ($p<0.05$), whereas no significant differences were found for CAS and TFEQ-R21 scores ($p>0.05$). Spearman correlation analysis indicated a weak negative correlation between Body Mass Index (BMI) and ASHN scores ($p<0.05$) and a weak positive correlation between BMI and TFEQ-R21 scores ($p<0.05$).

Table 3. Relationship between CAS cut-off score (≥9) and total scores and subscales of ASHN, TFEQ-R21, and SWLS

	CAS < 9		**CAS ≥ 9**		p[1]
	Mean ± SD	**Min-Max**	**Mean ± SD**	**Min-Max**	
Knowledge About Nutrition (KAN)	21.39 ± 3.54	5 - 25	22.11 ± 2.47	18 - 25	0.654
Attitude Toward Nutrition (ATN)	19.56 ± 2.52	14 - 28	19.67 ± 2.30	16 - 25	0.912
Positive Eating Habits (PEH)	18.78 ± 3.82	5 - 25	18.44 ± 4.22	13 - 25	0.465
Poor Eating Habits (PoEH)	19.73 ± 3.79	5 - 25	18.78 ± 4.91	8 - 25	0.589
ASHN	79.45 ± 9.52	41 -99	79 ± 9.34	66 - 94	0.737
Cognitive Restraint (CR)	41.18 ± 16.36	0 - 94.44	50.93 ± 20.72	11.11 - 100	**0.024**
Emotional Eating (EE)	46.47 ± 19.51	0 - 100	55.25 ± 16.33	22.22 - 94.44	**0.045**
Uncontrolled Eating (UE)	40.32 ± 21.32	0 - 96.3	48.77 ± 23.54	7.41 - 100	0.129
TFEQ-R21	42.32 ± 18.28	4.76 - 96.83	51.23 ± 19.76	12.7 - 98.41	**0.040**
General Life Satisfaction	20.41 ± 3.45	10 - 30	19.78 ± 4.41	10 - 30	0.298
Relationship Satisfaction	20.63 ± 3.10	8 - 25	20.67 ± 3.93	12 - 25	0.762
Self-Satisfaction	16.17 ± 2.40	9 - 20	16.22 ± 3.12	9 - 20	0.768
Social Environment Satisfaction	9.85 ± 2.70	3 - 15	10.83 ± 2.79	3 - 15	0.063
Job Satisfaction	12.36 ± 2.51	3 - 15	11.94 ± 3.04	6 - 15	0.721
SWLS	79.42 ± 9.14	51 - 104	79.44 ± 11.42	50 - 96	0.991[2]

[1]Mann–Whitney U Test (non-parametric), [2]Independent Samples T-test (parametric),

CAS:Coronavirus Anxiety Scale. ASHN**:** Attitude Scale for Healthy Nutrition

TFEQ-R21: Three-Factor Eating Questionnaire–Revised 21, SWLS: Satisfaction with Life Scale (for Adults)

Using a CAS score threshold of ≥9, no statistically significant differences were observed for ASHN subscales, including Knowledge About Nutrition (KAN), Attitude Toward Nutrition (ATN), Positive Eating Habits (PEH), Poor Eating Habits (PoEH), or the total ASHN score ($p>0.05$). Statistically significant differences were observed in Cognitive

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Restraint (CR) and Emotional Eating (EE) scores (p<0.05), with participants in higher CAS categories exhibiting higher mean CR and EE scores.

Table 4. Correlations among total scores of ASHN, CAS, TFEQ-R21, and SWLS

	ASHN	**CAS**	**TFEQ-R21**	**SWLS**
ASHN			1	
CAS	0.002	1		
TFEQ-R21	-0.012	0.185*	1	
SWLS	0.396*	-0.062	-0.154*	1

Spearman Correlation Test; p < 0.05 CAS: Coronavirus Anxiety Scale

CAS:Coronavirus Anxiety Scale. ASHN**:** Attitude Scale for Healthy Nutrition

TFEQ-R21:Three-Factor Eating Questionnaire–Revised 21, SWLS**:** Satisfaction with Life Scale (for Adults)

Spearman correlation analysis indicated a weak positive correlation between ASHN and SWLS scores (p<0.05), while no significant correlations were observed between ASHN and CAS or TFEQ-R21 scores (p >0.05). A weak positive correlation was found between CAS and TFEQ-R21 scores (p<0.05), whereas no significant correlation was identified between CAS and SWLS scores (p>0.05). Additionally, a weak negative correlation was observed between TFEQ-R21 and SWLS scores (p<0.05).

Discussion

This study investigated the relationship between pandemic-induced anxiety and healthy eating attitudes, eating behaviors, and life satisfaction. A total of 408 participants were included, comprising 65.44% females and 34.56% males, with a mean age of 34.43 years (SD=9.92) and a mean BMI of 24.95 (SD = 4.34), a value approaching the threshold for overweight[20]. The gender distribution, age profile, and BMI observed in the present study are consistent with findings from other cross-sectional studies conducted during the pandemic. For instance, a large-scale online study reported that 69.6% of participants were female, with a mean BMI of 24.4±4.7 (kg/m²)[21].Similarly, a web-based study conducted in Turkey indicated that 64.2% of participants were female, with a mean age of 33.05 years (SD=12.98) and a mean BMI of 24.18±3.97 (kg/m²)[22]. The predominance of women in the sample may reflect greater interest in health and nutrition topics, higher health awareness, and increased willingness to participate in online surveys compared to men. The similarity in BMI and age profiles provides an important context for assessing the impact of weight status and lifestyle changes in the adult population during the pandemic.

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In a pandemic-related study conducted in China, younger adults were reported to exhibit different levels of anxiety and depressive symptoms compared to older adults[23]. However, the findings of the present study suggest limited concordance with these results. This discrepancy may be explained by differences in sample characteristics, cultural context, measurement instruments, and variations in pandemic conditions at the time of data collection.

Several studies have reported statistically significant differences in CAS scores between genders, with female participants exhibiting higher anxiety levels than males[24,25]. Consistent with these findings, the present study found that females had significantly higher mean CAS scores compared to males. These results suggest that female gender may be associated with increased susceptibility to pandemic-related anxiety. This pattern could be influenced by a range of factors, including greater health-related concerns, increased caregiving responsibilities, and heightened emotional responsiveness. Such findings highlight the need to consider gender-specific differences when designing mental health interventions during public health crises.

The recurrence of fear, ambiguity, and stigma during biological crises can substantially hinder the effectiveness of public health responses, particularly in terms of providing adequate medical and mental health care[26]. Emotional reactions in such contexts are often initially expressed as heightened psychosocial distress and uncertainty, which may be accompanied by maladaptive behaviors such as increased tobacco or alcohol use and social withdrawal[27]. In the present study, no significant associations were observed between CAS scores and tobacco or alcohol use. In contrast, significant relationships were found between ASHN scores and both tobacco and alcohol consumption. While previous studies have reported a positive relationship between tobacco use and anxiety symptoms[28-29], our findings did not support this association, suggesting that the relationship between substance use and anxiety may vary depending on the type of anxiety measured, cultural factors, or the specific context of the pandemic.

Although there is limited research directly examining the relationship between ASHN and tobacco/alcohol use, some evidence suggests that smokers tend to have lower healthy nutrition attitudes compared to non-smokers. Additionally, studies considering dietary quality and substance use have reported that tobacco and alcohol users often exhibit less healthy dietary behaviors, which may indicate a link between nutrition attitudes and substance use behaviors[20].

Psychological problems associated with quarantine and restrictive measures may lead to changes in eating behaviors as stress and anxiety levels increase[30] .In the present study, eating disorder–related behaviors associated with anxiety during the pandemic were evaluated using the TFEQ. The assessment included the subdimensions of cognitive restraint, emotional eating, and uncontrolled eating, which capture different aspects of eating behavior influenced by psychological distress. Previous studies have reported an increased prevalence of eating disorder symptoms during the COVID-19 pandemic[31-34]. In the present study, statistically significant associations were observed between high levels of pandemic-related anxiety and both the total TFEQ-R21 score and the emotional

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eating subscale. Similarly, another study using the TFEQ reported a statistically significant increase in emotional eating in individuals with higher levels of pandemic-related anxiety[23].

A study conducted in the United Kingdom found that stress related to the COVID-19 pandemic increased the desire to lose weight among women and suggested that pandemic-related stress contributed to body dissatisfaction, leading to an increase in restrictive eating behaviors and unhealthy weight management practices[35]. In line with these findings, our study demonstrated a statistically significant association between pandemic-related anxiety and cognitive restraint. However, contrary to our results, another study reported no statistically significant difference between pandemic anxiety and cognitive restraint[22]. Individuals with limited cognitive control over eating, particularly those who engage in restrictive eating, are known to be more susceptible to eating in response to emotional states. In such circumstances, there is a greater tendency to prefer energy-dense foods high in sugar and fat content[36].

Uncontrolled eating behavior is characterized by the loss of self-regulation over eating, resulting in the consumption of excessive amounts of food despite the absence of physiological hunger. Individuals exhibiting this behavior tend to overconsume food and may develop addiction-like tendencies toward specific food groups. Both uncontrolled eating and excessive weight gain share common outcomes, such as energy intake exceeding physiological requirements[37]. While Elmacıoğlu et al. reported a significant association between pandemic-related anxiety and uncontrolled eating[22], no statistically significant relationship between CAS scores and uncontrolled eating was observed in the present study. These discrepancies may be attributed to differences in sample characteristics, assessment tools, or contextual factors related to the pandemic. Changes in eating behaviors during this period may also be associated with boredom, anxiety, reduced motivation for healthy eating, difficulties in food accessibility, and restrictions on store opening hours[34].

In the present study, a low positive correlation was observed between BMI and eating disorder–related behaviors, while a low negative correlation was identified between BMI and ASHN scores. These findings suggest that increases in unhealthy eating behaviors may contribute to weight gain and, consequently, higher BMI values. Conversely, individuals with higher ASHN scores appear to demonstrate better weight management and lower BMI levels. Supporting these results, previous studies have reported that higher levels of emotional eating are associated with increased BMI[32-33]. Additionally, it has been documented that the pandemic period was linked to an exacerbation of eating disorder symptoms and elevated BMI values [28]. Anxiety and depression are thought to trigger emotional eating by increasing energy intake, which may predispose individuals to various chronic diseases[34].

The high ASHN scores observed in this study may reflect the potential influence of increased health-related anxiety and concerns during the pandemic on individuals' eating behaviors. During this period, heightened perceptions of health-related risks have been reported, which may enhance individuals' awareness and control over their dietary

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practices[38]. In this context, elevated ASHN scores may indicate that pandemic-related anxiety serves as an important psychosocial factor shaping eating behaviors. However, these findings do not imply a causal relationship; rather, they highlight the associative patterns between psychological factors emerging during the pandemic and changes in dietary behaviors. To better understand the potential impact of these behavioral changes on life satisfaction, future studies employing longitudinal designs and a comprehensive approach to psychological variables are recommended.

Pandemic-related anxiety is thought to have the potential to negatively affect life satisfaction. One of the primary reasons underlying this relationship is the widespread fear experienced during the COVID-19 pandemic, including concerns about infection, death, and the loss of loved ones. An increase in such fears may lead to heightened distrust toward others, avoidance behaviors, and withdrawal from daily activities[39]. Additionally, the reduction in opportunities for interpersonal contact during the pandemic and the consequent weakening of social support networks particularly at times when individuals need them most, have been identified as important factors contributing to decreased life satisfaction[40].

A substantial body of literature supports these findings. A study conducted in Poland reported a negative association between coronavirus-related anxiety and life satisfaction[41]. Similarly, several studies carried out in Turkey have demonstrated that as health-related stress levels increase, life satisfaction decreases, revealing a significant negative correlation between these variables[42]. Another study conducted in Turkey found that individuals experiencing COVID-19-related anxiety reported lower levels of meaning in life, higher levels of loneliness, and consequently lower life satisfaction.

In contrast, the findings of the present study did not reveal a statistically significant relationship between pandemic anxiety and life satisfaction. This result may be explained by the relatively high levels of psychological resilience within the sample, the preservation of social support mechanisms despite the pandemic, or individuals' gradual adaptation to pandemic-related conditions over time. Moreover, it is possible that anxiety alone may not be sufficient to determine life satisfaction; rather, variables such as depression, psychological well-being, and meaning in life may play a more decisive role in this relationship.

Indeed, a study conducted in Peru reported a negative association between depression and life satisfaction, while a positive association was observed between anxiety and life satisfaction. In the same study, psychological well-being was found to play a significant mediating role in the relationship between depression and life satisfaction[43]. These findings suggest that life satisfaction is closely related to mental health symptoms and that psychological well-being may serve as a protective factor within this relationship.

Accordingly, the early identification of risks threatening mental health and the strengthening of individuals' psychological resilience are considered effective intervention targets for maintaining and enhancing life satisfaction[44].

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A negative relationship was identified between life satisfaction and TFEQ-R21 scores. Although several statistically significant correlations were identified in the present study, the strength of these associations was generally weak. From a practical perspective, these findings suggest that pandemic-related anxiety and eating behaviors may influence life satisfaction and nutrition attitudes only to a limited extent. In other words, while these variables are related, they likely represent only a small part of a broader set of psychological and behavioral determinants affecting well-being during the pandemic. Factors such as psychological resilience, social support, coping strategies, and overall mental health may play a more substantial role in shaping life satisfaction and eating behaviors. Therefore, the weak correlations observed in this study should be interpreted cautiously, emphasizing that pandemic anxiety alone may not be a strong predictor of changes in eating patterns or life satisfaction.

A study with dietetic students during the pandemic found no relationship between life satisfaction and orthorexia nervosa tendencies[45]. A study examining university student populations reported decreases in life satisfaction and emotional appetite-driven eating urges[46].

The findings of the present study demonstrate that women reported higher levels of both anxiety and life satisfaction compared to men. Supporting this result, prior research has shown that although women tend to report higher levels of anxiety and stress than men, their life satisfaction scores are similar to or even higher than those of men[47].

Although this pattern may appear paradoxical, it can be explained by women's greater tendency to experience negative emotions more intensely while simultaneously placing greater emphasis on evaluating the positive aspects of life, as well as on social relationships and family bonds. Overall, these findings suggest that anxiety does not automatically lead to reduced life satisfaction and that gender-specific psychological differences may play a significant role in shaping this relationship[48].

Several limitations of the present study should be acknowledged. First, the cross-sectional design prevents any conclusions about causality. Second, data were collected online, which may introduce selection bias, and anthropometric measurements were self-reported, potentially affecting accuracy. Third, the sample included a relatively high proportion of female participants, which may limit the generalizability of the findings. Despite these limitations, our results provide valuable insights into pandemic-related anxiety and its associations with CR and EE scores. In addition, the study addresses an important gap by examining the relationships between COVID-19–related anxiety, eating behaviors, and overall life satisfaction in adults. Future research with larger, more balanced samples and face-to-face data collection could provide more robust and generalizable results. It is believed that conducting the study with a larger sample and through face-to-face interviews may yield more meaningful and generalizable results.

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REFERENCES

1. Evren C, Evren B, Dalbudak E, Topcu M, Kutlu N. Measuring anxiety related to COVID-19: A Turkish validation study of the Coronavirus Anxiety Scale. *Death Studies*. 2020;0(0):1–7.

2. Salari N, Hosseinian-Far A, Jalali R,et al. Prevalence of stress, anxiety,depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Globalization and Health*. 2020;16(1):1–11.

3. Lee SA. How much "Thinking" about COVID-19 is clinically dysfunctional? *Brain Behav Immun*. 2020;87:97-98.

4. Türkiye Beslenme Rehberi TÜBER. *T.C. Sağlık Bakanlığı*.2015; Yayın No: 1031, Ankara

5. Locke A, Schneiderhan J, Zick SM. Diets for health: Goals and guidelines. *American Family Physician*. 2018;97(11):721-728.

6. Nalçacı İA. TFEQ-R21 ile üniversite öğrencilerinin yeme davranışlarının incelenmesi. *Journal of Tourism and Gastronomy Studies*. 2019;7(2):968–979.

7. Karakuş SŞ, Yıldırım H, Büyüköztürk Ş. Üç faktörlü yeme ölçeğinin türk kültürüne uyarlanması: Geçerlik ve güvenirlik çalışması. *TAF Preventive Medicine Bulletin*. 2016;15(3):229–237.

8. Van Strien T. Causes of emotional eating and matched treatment of obesity. *Current Diabetes Reports*. 2018;18(6):1-8.

9. Braden A, Flatt SW, Boutelle KN, Strong D, Sherwood NE, Rock CL. Emotional eating is associated with weight loss success among adults enrolled in a weight loss program. *Journal of Behavioral Medicine*. 2016;39(4):727-732.

10. Bryant EJ, Rehman J, Pepper LB, Walters ER. Obesity and eating disturbance: The role of TFEQ restraint and disinhibition. *Current Obesity Reports*. 2019;8(4):363–372.

11. Konttinen H, Männistö S, Sarlio-Lähteenkorva S, Silventoinen K, Haukkala A. Emotional eating, depressive symptoms and self-reported food consumption. A population-based study. *Appetite*. 2010;54(3):473-479.

12. Warren JM, Smith N, Ashwell M. A structured literature review on the role of mindfulness, mindful eating and intuitive eating in changing eating behaviours: effectiveness and associated potential mechanisms. *Nutrition Research Reviews*. 2017;30(2):272-283.

13. Serin Y, Şanlıer N. Duygusal yeme, besin alımını etkileyen faktörler ve temel

hemşirelik yaklaşımları. *Psikiyatri Hemşireliği Dergisi*. 2018;9(2):135-146.

14. Özer M, Karabulut Ö. Yaşlılarda yaşam doyumu. *Geriatri*.2003;6(2):72-74.

15. Kaba İ, Erol M, Güç K. Yetişkin yaşam doyumu ölçeğinin geliştirilmesi. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*. 2018;18(1):1-14.

16. Yılmaz E, Arslan H. Examination of relationship between teachers' loneliness at work place and their life satisfaction. *Pegem Eğitim ve Öğretim Dergisi*. 2013;3(3):59–69.

17. Pekcan G. Beslenme durumunun saptanmasi. *Diyet El Kitabı*. 2008;726:67-141.

18. Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death Studies. 2020;44(7):393–401.

19. TekkurşunDemir G, Cicioğlu Hİ. Sağlıklı Beslenmeye İlişkin Tutum Ölçeği (SBİTÖ): geçerlik ve güvenirlik çalışması. *Gaziantep Üniversitesi Spor Bilimleri Dergisi*. 2019;4(2):256–274.

20. Canbolat E, Asil E. Investigation of The effect of smoking on eating behaviors and Body Mass Index in adults: a cross-sectional study. *Turkish Journal of Diabetes and Obesity*. 2024;8(2):118-126

21. Madalı B, Alkan ŞB, Örs ED, Ayrancı, M, Taşkın H, Kara HH. Emotional eating behaviors during the COVID-19 pandemic: A cross-sectional study. *Clinical Nutrition ESPEN*. 2021;46:264–270.

22. Elmacıoğlu F, Emiroğlu E, Ülker MT, Özyılmaz Kırcali B, Oruç S. Evaluation of nutritional behaviour related to COVID-19. *Public Health Nutrition*. 2021;24(3):512-518.

23. Huang Y, Zhao N. Corrigendum to Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey *Psychiatry Res*. 2021;299:113803.

24. Güngör AE, Dağ B, Süzen B, Dağ A. COVID-19 döneminde diyetisyenlerdeki sağlık anksiyetesi, koronavirüs anksiyetesi ve sağlıklı beslenme kaygısı arasındaki ilişkilerin değerlendirilmesi. *Beslenme ve Diyet Dergisi*. 2022;50(1):53-62

25. Hoşgör H, Dörttepe ZÜ, Sağcan H. Acil sağlık hizmetleri çalışanlarında Covid-19 anksiyetesi ve mesleki performans ilişkisinin tanımlayici değişkenler açısından incelenmesi. *Mehmet Akif Ersoy Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*. 2020;7(3):865-886.

26. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*.

2020: In press

27. Shigemura J, Ursano RJ, Morganstein JC, Kurosawa M, Benedek DM. Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. *Psychiatry and Clinical Neurosciences*. 2020;74(4):281.

28. Cena H, Porri D, De Giuseppe R, et al. How healthy are health-related behaviors in university students: The HOLISTic study. *Nutrients*. 2021;13(2):675.

29. Taylor GM, Lindson N, Farley A, et al. Smoking cessation for improving mental health. *Cochrane Database Syst Rev*. 2021;3(3):CD013522

30. Haddad C, Zakhour M, BouKheir M, et al. Association between eating behavior and quarantine/confinement stressors during the coronavirus disease 2019 outbreak. *Journal of Eating Disorders*. 2020;8(1):40.

31. Devoe DJ, Han A, Anderson A, et al. The impact of the COVID-19 pandemic on eating disorders: A systematic review. *Int J Eat Disord*. 2023;56(1):5-25.

32. Cecchetto C, Aiello M, Gentili C, Ionta S, Osimo SA. Increased emotional eating during COVID-19 associated with lockdown, psychological and social distress. *Appetite*. 2021;160:105122

33. Yilmaz HO, Köse G. How does emotional appetite and depression affect BMI and food consumption. *Progr. Nutr*. 2020;22:e2020088.

34. Bennett G, Young E, Butler I, Coe S. The impact of lockdown during the COVID-19 outbreak on dietary habits in various population groups: a scoping review. *Front Nutr*. 2021;4(8):626432.

35. Swami V, Horne G, Furnham A. COVID-19-related stress and anxiety are associated with negative body image in adults from the United Kingdom. *Personality and Individual Differences*. 2021;170:110426.

36. Coulthard H, Sharps M, Cunliffe L, van den Tol A. Eating in the lockdown during the Covid 19 pandemic; self-reported changes in eating behaviour, and associations with BMI, eating style, coping and health anxiety. *Appetite*. 2021;161:105082.

37. Verzijl CL, Ahlich E, Schlauch RC, RancourtD. The role of craving in emotional and uncontrolled eating. *Appetite*. 2018;123:146-151.

38. Özenoğlu A, Gün B, Karadeniz B, et al. Yetişkinlerde beslenme okuryazarlığın sağlıklı beslenmeye ilişkin tutumlar ve beden kütle indeksi ile ilişkisi. *Life Sciences*. 2021;16(1):118.

39. Krok D, Zarzycka B, Telka E. Risk of Contracting COVID-19, personal resources and subjective well-being among healthcare workers: the mediating role of stress and meaning-making. *Journal of Clinical Medicine*. 2021;10(1):132.

40. Brooks SK, Webster, RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*. 2020;395(10227):912-920.

41. Dymecka J, Gerymski R, Machnik-Czerwik A, Derbis R, Bidzan M. Fear of COVID-19 and life satisfaction: the role of the health-related hardiness and sense of coherence. *Frontiers in Psychiatry*. 2021;12:712103.

42. Avçin E, Erkoç B. Covid-19 pandemi sürecinde sağlik anksiyetesi, yaşam doyumu ve ilişkili değişkenler. *Tıbbi Sosyal Hizmet Dergisi*. 2021;17:1-13.

43. Mamani-Benito O, Esteban RFC, Castillo-Blanco R, Caycho-Rodriguez T, Tito-Betancur M, Farfán-Solís R. Anxiety and depression as predictors of life satisfaction during pre-professional health internships in COVID-19 times: the mediating role of psychological well-being. *Heliyon*. 2022;8(10).

44. Ran L, Wang W, Ai M, Kong Y, Chen J, Kuang L. Psychological resilience, depression, anxiety, and somatization symptoms in response to COVID-19: A study of the general population in China at the peak of its epidemic. *Social Science & Medicine*. 2020;262:113261.

45. Gündüz BE, Topçu B, Doğuer Ç. Covid-19 Pandemisi döneminde beslenme ve diyetetik bölümü öğrencilerinin yaşam doyumu düzeyi ve ortoreksiya nervosa eğilimi arasındaki ilişkinin belirlenmesi ve besin seçimi ve tüketim sıklığı açısından farklılıkların değerlendirilmesi: kesitsel çalışma. *Türkiye Klinikleri Journal of Health Sciences/Türkiye Klinikleri Sağlık Bilimleri Dergisi*. 2022;7(4).

46. Hamurcu P, Arslan M. Duygu durum, yaşam doyumu ve duygusal iştah ilişkisi: üniversite öğrencileri üzerine bir çalışma. *Gevher Nesibe Journal of Medıcal and Health Sciences*. 2022;7(17):119-130.

47. Becchetti L, Conzo G. The gender life satisfaction/depression paradox. *Social Indicators Research*. 2022;160(1):35-113.

48. Joshanloo M, Jovanović V. The relationship between gender and life satisfaction: analysis across demographic groups and global regions. *Archives of Women's Mental Health*. 2020;23(3):331–338.

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