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RESEARCH / ARAŞTIRMA

Investigation of the Effect of Social Media Addiction on Social Appearance Anxiety and Orthorexia Nervosa in College Students

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ABSTRACT

Objective: This study investigated the relationship between social media addiction, social appearance anxiety, and orthorexia nervosa among university students.
Material and Methods: This cross-sectional and descriptive study was conducted with 1000 students (429 male, 571 female) enrolled at Cappadocia University during the spring semester of the 2020-2021 academic year. Social media addiction was assessed with the "Social Media Addiction Scale (SMAS) (Adult Form); social appearance anxiety was assessed with the "Social Appearance Anxiety Scale (SAAS)"; and orthorexia nervosa was assessed with the "ORTO-11" question scale. Additionally, the participants' anthropometric measurements were assessed.
Results: It was found that social appearance anxiety was higher, and orthorexic symptoms were more common in males compared to females ($p<0.001$ and $p<0.05$, respectively). A positive, weak correlation was found between the scores obtained from SMAS and SAAS in both sexes ($r=0.269$, $p<0.001$; $r=0.238$, $p<0.001$, respectively). Only in males was a positive, very weak correlation found between the score obtained from the SMAS and the ORTO-11 ($r=0.093$, $p<0.001$).
Conclusion: Social appearance anxiety and orthorexia nervosa symptoms were found to be higher in males than in females. A weak positive correlation was found between social media addiction and social appearance anxiety in both genders, while only a very weak positive correlation was found between social media addiction and orthorexic tendencies in males. The findings suggest that social media addiction may have negative effects on young people's body image and healthy eating behaviours. Educational and awareness-raising initiatives targeting young people should be implemented to reduce this addiction, which negatively impacts the health of the younger generation and lays the groundwork for eating disorders.
Keywords: Addiction, anxiety, college students, eating behavior disorders, orthorexia nervosa.

Üniversite Öğrencilerinde Sosyal Medya Bağımlılığının Sosyal Görünüş Kaygısı ve Ortoreksiya Nervoza Üzerine Etkisinin İncelenmesi

ÖZET

Amaç: Bu çalışmada, üniversite öğrencileri arasında sosyal medya bağımlılığı ile sosyal görünüş kaygısı ve ortoreksiya nervoza arasındaki ilişki incelenmiştir.
Gereç ve Yöntem: Bu kesitsel ve tanımlayıcı çalışma, 2020-2021 eğitim-öğretim yılı bahar döneminde Kapadokya üniversitesinde öğrenim gören 1000 öğrenci (429 erkek, 571 kadın) ile yürütülmüştür. Sosyal medya bağımlılığı "Sosyal Medya Bağımlılığı Ölçeği (SMAS) (Yetişkin Formu)"; sosyal görünüş kaygısı "Sosyal Görünüş Kaygısı Ölçeği (SAAS)"; ortoreksiya nervoza ise "ORTO-11" soru ölçeği aracılığıyla saptanmıştır. Ayrıca katılımcıların antropometrik ölçümleri de değerlendirilmiştir.
Bulgular: Sosyal görünüş kaygısı ve ortorektik semptomların erkeklerde kadınlara kıyasla daha yüksek ve yaygın olduğu bulunmuştur (sırasıyla $p<0,001$ ve $p<0,05$). Her iki cinsiyette de SMAS ve SAAS'den elde edilen puanlar arasında pozitif, zayıf korelasyon saptanmıştır (sırasıyla $r=0,269$, $p<0,001$; $r=0,238$, $p<0,001$). Sadece erkeklerde SMAS ve ORTO-11'den elde edilen puanlar arasında pozitif, çok zayıf korelasyon bulunmuştur ($r=0,093$, $p<0,001$).
Sonuç: Erkek öğrencilerde sosyal görünüş kaygısı ve ortoreksiya nervoza semptomları kadınlara kıyasla daha yüksek bulunmuştur. Sosyal medya bağımlılığı ile sosyal görünüş kaygısı arasında her iki cinsiyette zayıf pozitif korelasyon, yalnızca erkeklerde sosyal medya bağımlılığı ile ortorektik eğilim arasında çok zayıf pozitif korelasyon saptanmıştır. Bulgular, sosyal medya bağımlılığının gençlerin beden algısı ve sağlıklı yeme davranışları üzerinde olumsuz etkiler yaratabileceğini göstermektedir. Genç neslin sağlığını olumsuz etkileyen ve yeme davranışı bozukluklarına zemin hazırlayan bu bağımlılığın azaltılması için gençlere yönelik eğitim ve bilinçlendirme çalışmaları yürütülmelidir.
Anahtar Kelimeler: Bağımlılık, anksiyete, üniversite öğrencileri, yeme davranışı bozuklukları, ortoreksiya nervosa.

1. Introduction

In recent years, social media use has increased in many countries worldwide to evaluate leisure time (1). Individuals frequently visit social media platforms to engage in entertainment, gaming, leisure, and photo sharing (1). While social media use has become a widespread phenomenon, it has also raised significant concerns about "social media addiction"

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(2). Excessive and compulsive social media use is often described through general addiction models, characterized by anxiety during periods of offline and neglect of essential life domains due to overuse (2). Studies in the literature find that social media addiction is higher in young people than in adults (3,4). This underscores online platforms' significant role in shaping young people's entertainment and social interactions (1). Research indicates that young individuals with extensive social media networks tend to exhibit greater extroversion and higher self-esteem (5,6). According to the social balance theory, these individuals use social media frequently to balance their introversion and low self-esteem (5-7).

Appearance and body perception are important factors affecting an individual's extroversion and self-esteem (8). Body perception refers to the individual's physical characteristics and his/her perception of these characteristics compared to those around him/her (8). Body perception is a multiple-dimensional structure influenced by biological, psychological, and social factors (9).

Social media is peer-to-peer media that causes people to compare themselves with their peers. At the same time, unlike traditional media, it also makes an environment full of celebrities and celebrity photos accessible. In this easy-to-access and time-consuming virtual environment, individuals can constantly be exposed to images associated with the perception of beauty imposed by social media. Because realistic and unrealistic images are fully accessible, users may become concerned about their appearance, with the desire to obtain unreal beauty images after a certain period. The internalization of unrealistic ideals prompts individuals to harshly judge their appearance, heighten appearance-related anxiety, develop body dissatisfaction, and increase their vulnerability to eating behavior disorders (EBD) (10).

Individuals with high appearance anxiety are at higher risk for EBD (10). Because these people tend to bring their bodies closer to perfection by taking extreme measures such as reducing their calorie intake, vomiting after eating, and obsessing about choosing healthy foods (10,11). Orthorexia nervosa is an EBD that involves obsessive concerns about choosing healthy foods and associating healthy food choices/healthy eating with appearance (12). Healthy eating obsession and the desire to achieve perfection in appearance negatively affect body perception over time and lead to health problems such as malnutrition and energy and nutrient deficiencies (12,13). Research has shown that body-related behavioral changes adversely impact individuals' eating attitudes (12,13).

The impact of social media on body image has been linked to eating disorders; however, specific mechanisms, such as social appearance anxiety, have not been sufficiently investigated among university students. Furthermore, studies examining the three-way relationship between social media addiction, social appearance anxiety, and orthorexia nervosa are limited. Additionally, many studies in this field are limited to female participants, and the effects on males are not sufficiently addressed in the literature. This study aims to contribute to the field by evaluating the interaction of these three variables within a gender context.

In this context, the study aimed to answer the following research questions:

1. Is there a significant relationship between social media addiction and social appearance anxiety among university students?
2. Is there a significant relationship between social media addiction and orthorexia nervosa tendencies?
3. Do these relationships differ according to gender?
4. Is there a relationship between social media use, social appearance anxiety, orthorexia tendencies, and anthropometric measurements?

The study examined social media addiction and gender as independent variables, social appearance anxiety, orthorexia nervosa tendencies, and anthropometric measurements as dependent variables.

2. Material and Method

This cross-sectional and descriptive study was conducted with 1000 (429 males, 571 females) students at Cappadocia University in the spring semester of 2020–2021. Inclusion criteria were being healthy, volunteering, and being a college student between 18 and 25. Students who were on a diet, were using regular medication or nutritional support, and were pregnant or breastfeeding were excluded from study.

The universe of the study consisted of 2510 students (all the Cappadocia University students). In this study, convenience sampling, a non-probability sampling method, was employed. All students in the faculty (N = 2510) were invited to participate, and those who volunteered and met the inclusion criteria were included in the study. The aims and design of the study were announced to the students via social media channels, and researchers visited students in their classrooms. As a result, 1500 volunteer students agreed to participate in the study. The data of some students were not evaluated because 225 students refused to join in anthropometric measurements, and 275 students did not fill out the data collection tools appropriately, so the study was completed with 1000 students. The Power & Sample Size (PASS 11, NCSS Statistical Software) package programs were used to calculate the power of the study. When the type I error was taken as 0.05 and the type II error as 0.002, the power of the study was found to be 99.8%.

2.1. Data Collection Tools

The data were collected using a socio-demographic questionnaire form, the "Social Media Addiction Scale (SMAS)" (Adult Form), the "Social Appearance Anxiety Scale (SAAS)," and the "ORTO-11" question scale. The socio-demographic questionnaire forms and scales were obtained through face-to-face interviews.

The socio-demographic questionnaire consisted of 25 questions concerning the demographic characteristics of participants (age, sex, smoking, alcohol use, social media platform used, time spent on social media, etc.).

SMAS, developed by Şahin and Yağcı (14) in 2017 to determine the level of social media addiction in adults, consists of 20 items and is evaluated on a five-point Likert scale. The highest score that can be obtained from the scale is 100, and the lowest score is 20. A high score indicates that the individual perceives themselves as a "social media addict." The Cronbach alpha internal consistency coefficient for the overall scale is .94. Analyses revealed that the scale is valid and reliable for determining adult social media addiction. In this study, the Cronbach alpha value for SMAS was found to be 0.82.

SAAS is a self-report scale developed by Hart et al. (15) to measure an individual's emotional, cognitive, and behavioral concerns about appearance. Its Turkish validity and reliability were assessed by Doğan (16) in 2010. SAAS is a five-point Likert-type scale consisting of 16 items. High scores obtained from the scale that measures unidimensional social appearance anxiety indicate high appearance anxiety. The scale's Cronbach alpha internal consistency coefficient is 0.93. The analysis showed that the scale had sufficient validity and reliability for Turkish

university students. In this study, the Cronbach alpha value for SAAS was calculated as 0.79.

ORTO-11, which consists of 11 questions, calculates the risk of orthorexia nervosa (17). The scale was developed by Donini et al. (17) in 2005. Arusoğlu et al. (18) performed its Turkish validity and reliability in 2006. The items on the scale are answered with four grades. Individuals are asked to tick one of the "always," "often," sometimes," and "never" options. The items investigate the obsessive behaviors of individuals in choosing, purchasing, preparing, and consuming foods they consider healthy (18). The scale's total score is obtained by adding all the items, and low scores indicate an orthorexic tendency (18). The scale's Cronbach's alpha internal consistency coefficient is 0.62 (18). In this study, the Cronbach alpha value for ORTO-11 was calculated as 0.60.

2.2. Anthropometric Measurements

Body weight, height, neck, waist, and hip circumferences were measured. All anthropometric measurements were taken in the mornings when the students were relaxed and hungry. Weight was measured with a digital scale (Grundig PS 4110 Koç Holding, Istanbul, Turkey). Height, neck, waist, and hip circumference were measured using a non-stretching tape measure using the technique (19). Body mass index (BMI) (weight (kg)/height (m^2)) was calculated from the obtained weight and height measurement values; the waist-to-hip ratio (WHR) and the waist-to-height ratio (WHtR) were calculated (19).

2.3. Ethical Approval

This study was conducted according to the guidelines in the Declaration of Helsinki. Approval from the Cappadocia University Scientific Research and Publication Ethics Committee on 18.05.2019 (number/date ETK.FR. Decision Number: 2019.04) was obtained for the study. An informed consent form was obtained from the participants.

2.4. Statistical Analysis

The students' data were analyzed using the IBM SPSS Statistics 22.0 statistical package program (Statistical Package for the Social Sciences, SPSS Inc., Chicago, USA). The normality of the continuous variables was assessed using the Kolmogorov-Smirnov test, given the large sample size (n=1000). Additionally, skewness and kurtosis values, as well as visual inspections using boxplots and histograms, were considered to evaluate the distribution patterns. Despite a few deviations from normality, non-parametric tests (Mann–Whitney U) were preferred for group comparisons, considering the ordinal nature and non-normal distribution of some scale scores. Chi-square analysis was used to compare categorical variables (20). Frequency and percentage values were used for categorical variables; median, minimum, maximum, arithmetic mean, and standard deviation values were used for continuous variables. Parametric variables are expressed as mean and standard deviation, while non-parametric variables are expressed as median (with minimum and maximum values) (21). The relationship between scale scores, total time spent on social media, and anthropometric measurements was evaluated by Spearman correlation analysis. Values were considered significant at $p<0.05$ at a 95% confidence interval (22).

3. Results

This study was conducted with 1000 students (429 males and 571 girls). The mean age of the students was 20.67±1.85 years.

3.1. Sociodemographic Characteristics of the Students

The study was conducted with 1.000 university students, consisting of 429 male and 571 female participants. The majority of the students (97.5%) were single, while only a small percentage (2.5%) were married.

Regarding living arrangements, 38.6% of the students resided in dormitories, while 44% lived with friends, and 17.4% stayed with their families. A significant gender difference was observed, with 66.9% of male students preferring to live with friends, whereas 45.5% of female students lived in dormitories ($p<0.001$).

In terms of employment status, only 5% of students reported having a job, with a significantly higher proportion of male students (12.9%) working compared to female students (2.4%) ($p<0.001$).

The average monthly household income of the students was 6.115.17±4.913.65 TL, with no statistically significant difference between male and female students ($p=0.165$) (Data not shown).

3.2. Students' Smoking and Alcohol Consumption

Smoking and alcohol consumption data are presented in Table 1. The majority of males and females don't smoke. The rate of smoking among males was significantly higher than among females ($p<0.001$). The number of cigarettes smoked per day was significantly higher ($p<0.001$) in males than in females. The rate of alcohol use in females (21.4%) was significantly lower ($p<0.001$) than in males (41.3%).

Table 1. Students' smoking and alcohol use status

Smoking and alcohol use	Sex			Statistical Analysis X^2 / p
	Male (n=429)	Female (n=571)	Total (n=1000)	
	Number (%)	Number (%)	Number (%)	
Smoking*				
Yes	271 (63.2%)	219 (38.4%)	490 (49.0%)	60.368 / **<0.001**
No	158 (36.8%)	352 (61.6%)	510 (51.0%)	
Number of cigarettes (pcs/per day)**	$\tilde{x}$ **(Min-Max)**	$\tilde{x}$ **(Min-Max)**	$\tilde{x}$ **(Min-Max)**	**Z / p**
	15.00 (1.00-60.00)	10.00 (1.00-50.00)	12.00 (1.00-60.00)	49.531/ <**0.001**
Alcohol Use *	**Number (%)**	**Number (%)**	**Number(%)**	X^2 **/ p**
Yes	177 (41.3%)	122 (21.4%)	299 (29.9%)	46.2479 / **<0.001**
No	252 (52.7%)	449 (78.6%)	701 (70.1%)	
Frequency of Alcohol Use *				
≤4 times/month	123(69.50%)	87 (71.32%)	210 (70.23%)	0.147 / 0.929
>4 times/month	54 (30.50%)	35 (28.68%)	89 (29.77%)	

*Pearson Chi-square, ** Mann-Whitney U

3.3. Anthropometric Measurements of the Students'

Table 2 shows the anthropometric measurements of the students. Most males and females were in the normal range regarding BMI classification. Females had significantly ($p<0.05$) lower BMI values than males.

Most males and females were in the normal range for neck circumference. The median neck circumference was significantly ($p<0.001$) higher in males than in females.

Most students were in the normal range regarding waist circumference and waist/hip ratio. The percentage of females in the normal range regarding waist circumference and waist/hip ratio was significantly higher ($p<0.001$) than that of males. The median waist circumference was 86.5 (64.1-124.2) cm for males and 75.0 (59.00-115.00) cm for females. This difference was statistically significant ($p<0.05$).

3.4. Social Media Platforms Used by Students

In Table 3, The X and Facebook usage rate of males was significantly higher ($p<0.001$) than that of females.

3.5. SMAS, SAAS, and ORTO-11 Scale Scores and Total Time Spent on Social Media

The median score obtained from the SAAS was 40.00 (16.00-75.00) in males and 36.00 (26.00-80.00) in females. Males' SAAS scores were significantly higher than females (p<0.001). The ORTO-11 score was 25.00 (14.00-37.00) for males and 26.00 (15.00-44.00) for females. It was found that the ORTO-11 score was significantly (p<0.05) higher in females compared to males (Table 4).

Table 2. Anthropometric measurements of the students

Anthropometric measurements	Sex			Statistical analysis
	Male (n=429)	Female (n=571)	Total (n=1000)	
BMI (kg/m²)	**Number (%)**	**Number (%)**	**Number (%)**	**X^2 / p**
<18.5 (underweight)	6 (1.6%)	57 (10.1%)	80 (8.0%)	29.974/ **<0.001**
18.5-24.9 (normal)	260 (60.5%)	409 (71.5%)	688 (68.8%)	
25.0-29.9 (overweight)	136 (31.5%)	68 (12.0%)	168 (16.8%)	
≥ 30 (obese)	27 (6.5%)	37 (6.4%)	64 (6.4%)	
BMI (kg/m²)*	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**Z / p**
	23.84(17.28-35.92)	21.60(15.43-40.23)	22.20(15.43-40.23)	10.256 / **0.036**
Neck circumference (cm)	**Number (%)**	**Number (%)**	**Number (%)**	**X^2 / p**
Normal (<39)(B) (<35)(G)	401(93.50%)	547 (95.7%)	952 (95.2%)	41.343 / **<0.001**
Risk (≥39)(B) (≥35)(G)	28 (6.5%)	24 (4.3%)	48 (4.8%)	
Neck circumference*	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**Z / p**
	33.00 (23.00-41.00)	27.00 (20.00-42.00)	28.00 (20.00-42.00)	8.794 / **<0.001**
Waist circumference (cm)	**Number (%)**	**Number (%)**	**Number (%)**	**X^2 / p**
Normal (<94)(B) (<80) (G)	305 (71.0%)	413 (72.3%)	720 (72.0%)	36.573/ **<0.001**
Risk (≥94)(B) (≥80) (G)	76 (17.7%)	80 (14.1%)	150 (15.0%)	
High risk (≥102)(B) (≥88) (G)	48 (11.30%)	78 (13.6%)	130 (13.0%)	
Waist circumference *	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**Z / p**
	86.5 (64.1-124.2)	75.0 (59.00-115.00)	77.00 (59.00-124.00)	26.578 / **0.046**
Waist-to-hip ratio **	**Number (%)**	**Number (%)**	**Number (%)**	**X^2 / p**
Normal (<0.90) (B) (<0.85) (G)	290 (67.7%)	514 (89.9%)	844 (84.4%)	38.519 / **<0.001**
Risk (≥0.90) (B) (≥0.85) (G)	139 (32.3%)	57 (10.1%)	156 (15.6%)	

(B) represents the intercept value for males and (G) represents the intercept value for females. * Mann-Whitney U, **Pearson Chi-square

3.6. Evaluation of the Correlation Between Scales, Time Spent on Social Media, and Anthropometric Measurements

Table 5 shows a positive, weak correlation between SMAS and SAAS scores in both sexes (p<0.001). A positive, very weak correlation (r=0.093, p<0.05) was found between SMAS and ORTO-11 scores only in males. For both sexes, there is a weak positive correlation between the time spent on social media and the SAAS score (p<0.001). There was a weak positive correlation between the BMI and the SAAS score only in males (r=0.115, p<0.05). There was a positive, moderate correlation between waist circumference and SAAS scores in both males and females (r=0.312 and r=0.512, respectively, p<0.001).

Table 3. Frequency distribution of social media platforms used by students

Social Media Platform*	Sex			Statistical analysis
	Male (n=429)	Female (n=571)	Total (n=1000)	
	Number (%)	**Number (%)**	**Number (%)**	**X^2 / p**
Instagram				
Yes	398 (92.8%)	524 (91.8%)	922 (92.2%)	0.3441 / 0.557
No	31 (7.2%)	47 (8.2%)	78 (7.8%)	
WhatsApp				
Yes	420 (97.9%)	549 (96.1%)	969 (96.9%)	2.5116 / 0.113
No	9 (2.1%)	22 (3.9%)	31 (3.1%)	
X				
Yes	220 (51.3%)	234 (41.0%)	454 (45.4%)	10.4865 / **<0.001**
No	209 (48.7%)	337 (59.0%)	546 (54.6%)	
Youtube				
Yes	309 (72.0%)	408 (71.5%)	717 (71.7%)	0.0398 / 0.842
No	120 (28.0%)	163 (28.5%)	283 (28.3%)	
Facebook				
Yes	169 (39.4%)	125 (21.9%)	294 (29.4%)	36.1529 / **<0.001**
No	260 (60.6%)	446 (78.1%)	706 (70.6%)	
Other				
Yes	13 (3.0%)	25 (4.4%)	38 (3.8%)	1.2176 / 0.270
No	416 (97.0%)	546 (95.6%)	923 (96.2%)	

*Pearson Chi-square

Table 4: Results from the SMAS, SAAS, and ORTO-11 scales and time spent by students on social media

Scale Ratings*	Sex			Statistical analysis
	Male (n=429)	Female (n=571)	Total (n=1000)	
	$\tilde{x}$ (Min-Max)	**$\tilde{x}$ (Min-Max)**	**$\tilde{x}$ (Min-Max)**	**Z/p**
SMAS	57.00(25.00-92.00)	58.00(23.00-95.00)	57.00(23.00-95.00)	12.404 / 0.729
SAAS	40.00(16.00-75.00)	36.00(26.00-80.00)	38.00(16.00-80.00)	14.013 / **0.001**
ORTO-11	25.00(14.00-37.00)	26.00(15.00-44.00)	25.00(14.00-44.00)	10.892 / **0.003**
Total time spent on social media (hour/per day)	5.00 (1.00-20.00)	5.00 (1.00-22.00)	5.00 (1.00-22.00)	11.506 / 0.099

* Mann-Whitney U

Table 5. Correlation between scale scores, spending time on social media, and anthropometric measurements

Scores of Scales*	Sex					
	Male (n=429)		Female (n=571)		Total (n=1000)	
	rho	**p**	***rho***	**p**	***rho***	**p**
SMAS - SAAS	0.269	**<0.001**	0.238	**<0.001**	0.249	**<0.001**
SMAS - ORTO-11	0.093	**0.027**	0.006	0.441	0.038	0.114
SAAS - ORTO-11	-0.003	0.473	-0.009	0.413	-0.019	0.271
Time spent on social media - SAAS	0.211	**<0.001**	0.247	**<0.001**	0.233	**<0.001**
Body mass index - SAAS	0.115	**0.035**	0.218	0.056	0.208	**0.040**
Waist circumference - SAAS	0.312	**0.027**	0.512	**0.035**	0.480	**0.030**

*Spearman's Correlation Analysis

4. Discussion

In recent years, social media has become a universal social interaction platform for adolescents and young adults. Social media users often share their experiences through photos and videos and are frequently exposed to feedback from others due to sharing their photos (23). This interactive nature of social media causes users to comment publicly on each other's appearance, leading to overthinking and worrying about one's body (23). Many studies have shown that this online interaction can lead to unrealistic appearance aims and negative body image, which can be followed by eating disorders (8,24,25). This

study was conducted to evaluate the effect of social media addiction on social appearance anxiety and orthorexia nervosa in college students. In the study, it was found that social appearance anxiety increased as social media addiction increased; both social appearance anxiety were higher, and orthorexic symptoms were more common in males compared to females ($p<0.005$).

Studies examining the relationship between social media use and factors such as appearance and body satisfaction have found that women are more affected by social media likes and comments than men. As a result, their emotional state is damaged (6,26-28). In this study, unlike females, males were more anxious about social appearance, and orthorexic symptoms were more common in males. Bigorexia (muscle dysmorphia) is a type of EBD defined as an obsession with increasing muscle mass at the same time that individuals desire to have less fat mass (29,30). Bigorexia affects men more than women (31). Men who see a muscular body type as ideal and are frequently exposed to these images on social media may turn to unhealthy, obsessive behaviors in their diet to achieve a muscular body type (31). Considering the frequency of the pictures mentioned above on social media, it can be said that this situation affects the results.

In the study, it was found that social appearance anxiety increased as social media addiction increased. Recent studies in the literature have found similar results. In a cross-sectional study conducted by Papapanou et al. (32) on 632 adolescents and young adults, it was found that social media addiction increased social appearance anxiety and, consequently, social isolation. Similarly, in a study conducted by Caner et al. (33) on adolescents, it was concluded that 24.4% of adolescents were addicted to social media, and social media addiction and being influenced by social media phenomena increased social appearance anxiety in adolescents and posed a risk for mental health. The primary reason for this relationship is that individuals often share idealized versions of themselves on social media, and others tend to compare themselves to these posts. This leads to individuals internalising unrealistic beauty standards, becoming dissatisfied with their bodies, and increasing their concerns about their appearance. Frequent exposure to filtered or edited images negatively affects individuals' perceptions of their own physical appearance. In addition, feedback mechanisms such as social media likes and comments can lead to the development of an appearance-based value system, particularly in individuals with low self-esteem (23,32,34). Women tend to respond more emotionally to social media feedback, while men internalise this pressure through physical performance and appearance-focused behaviours (31,35). In this context, the positive relationship between social media addiction and social appearance anxiety observed in our study supports the impact of digital environments on individuals' psychosocial processes.

Eating behavior disorders (ED) refer to a group of diseases with many underlying causes (24). In recent years, the increasing desire and encouragement to have a very thin or muscular body type, the influence of social media has been added as an accelerating factor in the pathology of eating disorders (24). Feedback tools of social networks, such as likes, comments, and retweets, are abnormally meaningful for many users, and users criticize their bodies due to this situation (24). Cyberbullying through social media causes eating disorders by bringing criticism about body image, where people are most vulnerable (24,36). Exposure to cyberbullying was found to be higher in young people with eating disorders (24). In a study evaluating the relationship between social media use and the risk of eating disorders in college students, it was found that young people who attach too much importance to social media comments and likes have low body satisfaction and are more prone to eating disorders (25,36). Similarly, another large-scale study conducted on adolescents found a correlation between body dissatisfaction and eating disorder prevalence (8). This study also found that as social media addiction increases, the frequency of orthorexic symptoms increases, with this increase being more pronounced in males. This finding may be related to the desire for a muscular body type that is commonly idealized for men on social media. Men who are constantly exposed to such images may become obsessed with improving their appearance and adopt strict dietary rules. This situation may partially explain the increased orthorexic tendencies observed in males.

Another important finding of the study is that the level of addiction increases as the time spent on social media increases. The study found that students used social media for an average of 5 hours per day. Considering that they were awake for an average of 12 hours per day, it can be understood that young individuals spend approximately half of their time on social media. This situation highlights a pattern described in the literature as 'problematic social media use,' which refers to an individual's tendency to use social media in a manner that disrupts their daily functioning (5). Problematic social media use has been associated with depression, depressive symptoms, loneliness, and social isolation (5). These effects are more pronounced in individuals with a high tendency toward social comparison. Spending long periods of time on social media causes individuals to constantly be exposed to idealised lives and bodies, which reinforces feelings of inadequacy and increases anxiety and depressive symptoms (37,38). Indeed, experimental studies where social media use was temporarily paused (e.g., for one week) have shown a significant reduction in symptoms related to depression and anxiety (39). This highlights the bidirectional and highly dynamic nature of the relationship between social media addiction and mental well-being.

In terms of anthropometric measurements, it was found that social appearance anxiety increased as BMI and waist circumference increased significantly in both sexes. As often mentioned, social media is a world of unrealistic beauty that is not suitable for every body type, such as extreme thinness, muscular body type, and skinny waist (40). It is predicted that individuals frequently exposed to these images on social media adopt an unrealistic perception of beauty, evaluate themselves accordingly, and become dissatisfied with their bodies when they cannot have the desired features (8). When actual body measurements do not align with these virtual images, individuals may become dissatisfied with their bodies, feel inadequate, and experience concerns about their physical appearance (41,42). In particular, increases in anthropometric indicators that directly affect appearance, such as BMI and waist circumference, combined with indirect or direct messages from social media, can create negative body image perceptions. Indeed, studies have shown that dissatisfaction with body image is an important determinant of social appearance anxiety (41,42). Therefore, it can be said that social media increases the gap between individuals' body measurements and their psychosocial perceptions.

The study found that smoking and alcohol consumption rates and the number of cigarettes smoked per day were significantly higher in males than in females ($p<0.001$). This finding indicates that young males are more prone to risky health behaviours. In particular, social media's accessibility, lack of regulation, and unlimited sharing environment, compared to traditional media, may be an important factor in the spread of such behaviors. The literature contains findings that exposure to posts encouraging smoking and alcohol consumption on social media increases the likelihood of young individuals trying and continuing these

behaviours (43,44). At the same time, the reinforcement of content shared on social media through reward mechanisms such as 'likes' or 'comments' creates the perception that these behaviours are socially acceptable among young people and directs them in this direction (45). Current findings suggest that social media platforms may have a profound impact not only on body image but also on health behaviors. Therefore, it is recommended that social media-based interventions conducted from a public health perspective also focus on related areas.

Reaching almost half of the universe and evaluating smoking and alcohol use, eating behavior disorders, and anthropometric measurements, in addition to social media addiction and social appearance anxiety studies in the literature, constitute the strengths of the study.

On the other hand, this study has some limitations. The sample was limited to the age group of young adults (18-25 years), so the results cannot be generalized to other age. Further surveys could include adults of all ages. In addition, the number of females who voluntarily agreed to participate in the study was higher than that of males. Another limitation is that this was a cross-sectional and descriptive study. Cross-sectional and descriptive studies may be insufficient to identify causality. Longitudinal studies are recommended to evaluate the relationship between social media addiction, social appearance anxiety, and eating disorders in adults. In addition, there are methodological limitations regarding the selection of statistical tests used in the study. Although non-parametric tests are generally considered less powerful than parametric ones, they were chosen in this study due to the violation of normality assumptions in some variables. Considering the ordinal nature of the data collected through self-report Likert-type scales, non-parametric methods were deemed more appropriate for accurate group comparisons. This methodological choice may limit the generalizability of some findings; however, it was made to ensure analytical accuracy in line with data characteristics.

5. Conclusion and Recommendations

In this study, it was found that as social media addiction, time spent on social media, BMI, and waist circumference increased, social appearance anxiety also increased. In addition, it was found that social appearance anxiety was higher, and orthorexic symptoms were more common in males compared to females. There could be a vicious circle connecting social media addiction, social appearance anxiety, and eating disorders among young adults. Priority should be given to work in this area to clarify this cycle. In addition, initiatives such as education and awareness studies should be undertaken to reduce the level of dependence that has a terrible effect on the health of the younger generation and is increasing over time.

6. Contribution to the Field

This study makes a significant contribution to the literature by examining the relationship between social media addiction, social appearance anxiety, and orthorexia nervosa in depth. While previous research has mostly analyzed these variables separately, this study provides a comprehensive perspective on their interconnected psychological and behavioral effects.

A large-scale university sample (1,000 students) that comprehensively investigates the interactions between these variables, new insights into the gender-specific effects of social media addiction, particularly highlighting its impact on male students, a novel perspective on the relationship between orthorexia nervosa and social appearance anxiety, guidance for health policies and the development of psychosocial intervention programs for young adults are the key contributions of this research.

By demonstrating how social media addiction creates a cycle with disordered eating behaviors and appearance anxiety, this study enhances our understanding of the mental health implications of the digital age. The findings provide crucial insights for both academic discussions and public health policies.

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Conflict of Interest

The authors declare that they have no conflict of interest.

Authorship Contribution

Study design: HKB, VS; Data collection: HKB, VS; Data analysis: HKB, VS; Draft preparation: HKB, VS; Critical review for content: HKB, VS; Final approval of the version to be published: HKB, VS.

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