The Relationship between Social Media Addiction and Eating Disorders among Followers of Social Media Influencers

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Abstract

Background: We aimed to evaluate the relationship between social media addiction and eating disorders in the followers of social media influencer.

Method: The study (n=561) was conducted with 112 men and 449 women, who follow a social media influencer and volunteered to participate in the study. Social media addiction scale for adults form (SMAS-AF) was used to evaluate the social media addiction, and ORTO-15 scale was used to determine the eating disorders.

Results: 80.9% of the participants had orthorexia nervosa and 19.1% were normal. BMI and social media addiction scale total score were significantly higher than optimal rates and ORTO-15 total score was significantly low ($P<0.05$). Age, anthropometric measurements, sub-scores of SMAS-AF and clinical domain sub-score of orthorexia nervosa were significantly different between the groups ($P<0.05$). It was significantly found that the emotional domain sub-score increased as the virtual tolerance score and virtual communication score increased ($P<0.05$). A relationship was found between the total score of the social media addiction scale and the emotional domain sub-score ($P<0.05$).

Conclusion: Social media use may negatively affect individuals' eating behaviors and contribute to body image dissatisfaction.

Keywords: Social media; Social media addiction; Eating disorders; Nervosa

Introduction

Eating disorders are serious psychiatric disorders characterised by impaired eating behaviours that significantly impair physical health and psychosocial functioning. Individuals of all ages, genders, ethnicities and geographies can be affected by eating disorders. In particular, the adolescents and young adults are at risk (1-3).

In recent years, a new term called 'orthorexia nervosa' has emerged in the field of eating behaviours, which is not included in eating disorders. This eating behaviour is an obsession with healthy eating associated with significant dietary restrictions and neglect of food groups (4). In the literature, a tendency towards other eating disorders was found to be strongly associated with the behaviours of orthorexia nervosa. These eating behaviours, which focus on clean eating, are followed by restrictive eating habits; mostly affect young adults (18-35 years) (5).

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The influence of media plays an important role in eating disorders. The prevalence of orthorexia nervosa and related disorders is expected to increase in the coming years due to the rapid spread of false information about health on social media platforms (6). While traditional media such as television and magazines have been extensively studied in relation to the risk of disordered eating behaviour, the impact of social media has received relatively less attention (7).

Social media are mostly used by teenagers and young adults, with Facebook, Instagram, Snapchat and Twitter being the most common (8). The scientific term 'Internet addiction disorder' is known as a mental health disorder that has been debated; in 2012, the American Psychiatric Association proposed the addition of 'Internet Addiction Disorder' to the third section of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). DSM-5 defines Internet Gaming Disorder as a transient disorder, but social media addiction has not yet been classified in DSM-5 (9). Social media addiction and the risk of eating disorders are inextricably linked. Social media addiction has been associated with increased risk of eating disorders, particularly among adults who have easier access to the internet and spend more of their time on social networks (10). Although associations between Instagram use and increased symptoms of orthorexia nervosa have been reported, the relationship between orthorexia nervosa and social media addiction is still unclear (5).

We aimed to determine the relationship between social media addiction and eating disorder in the followers of social media influencer.

Most social media users are young adults and social media addiction has been associated with an increased risk of eating disorders, specifically among these young adults who have greater access to the internet and spend more of their time on social networks (2, 10, 11). However, increased eating disorders were found significantly associated with greater orthorexia nervosa tendency and orthorexia nervosa behaviours. Orthorexia nervosa and related disorders are likely to increase in the coming years due to the rapid spread of false

information about health on social media platforms. Prospective studies seem to be necessary to investigate the associations and succession of orthorexia nervosa and eating disorders over time (6).

In this study, it is thought that the followers of a social media influencer, who is the study's lead researcher, have an increased tendency towards orthorexia nervosa because of social media use. Besides, it is assumed that there is a significant relationship between anthropometric measurements such as weight, orthorexia nervosa and social media addiction in these followers. We aimed to determine the relationship between social media addiction and eating disorders in adults aged 18-65 and following social media influencer.

Methods

Participants

The study was conducted between August 2022 and November 2022 with individuals between ages 18-52 (n=561, 80% women, 20% men) who follow the social media influencer, and the conductor of the study. The participants took part in the study online via an e-survey form. Participants accessed the e-survey form as followers of an influencer account that produces content on fashion and beauty. Participants with diagnosed eating disorders were excluded.

The Ethics Committee permission of the study (with the number 85646034-604.02.02-62370) was obtained from Bahcesehir University, Istanbul, Turkey Ethics Board on 20.07.2023.

Sociodemographic form; general information (age, gender, height, educational status, place of residence, body weight, height, etc.) and health status (disease) of the individuals were questioned. The nutrition and eating habits of the individuals were evaluated by questioning the number of main and intermediate meals they consumed daily, water consumption, previous dietary treatment with a dietician, frequent weighing, frequency of fast-food consumption, and frequency of sugary beverage consumption.

SMAS-AF

A five-point rating was used in the scale form as '1-Not suitable for me at all', '2-Not suitable for me', '3- Undecided', '4- Suitable for me', '5-Very suitable for me'. Because of the analyses, it was determined that the SMAS-AF has a five-point Likert-type structure consisting of 2 sub-dimensions (virtual tolerance and virtual communication) and 20 descriptions. Virtual tolerance sub-dimension consists of items 1-11 and virtual communication consists of items 12-20. Items 5 and 11 are reverse scored. 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 himself/herself as a 'social media addict'. The results regarding the validity and reliability of the scale show that the SMAS-AF is a measurement instrument that can be used to determine the social media addiction of adults. As a result, the SMAS-AF is a measurement instrument that can be used to determine the social media addiction of adults between the ages of 18-60. The validity and reliability study of this scale was conducted by Cengiz Sahin and Mustafa Yagcı in order to develop a scale to determine the social media addiction of adults over the age of 18 in Turkish literature (12).

ORTO-15 scale

Donini's ORTO-15 Scale is a 15-item self-report scale designed to assess the tendency towards orthorexia nervosa. In the scale, individuals are asked to indicate how often they feel as described in the items by ticking one of the options 'always', 'often', 'sometimes' and 'never'. Each item is rated with one of 1, 2, 3 and 4 points. The items investigate individuals' obsessive behaviours in selecting, purchasing, preparing and consuming foods that they themselves consider healthy. A score of '1' was given to the responses that were the distinguishing criteria for orthorexia nervosa and a score of '4' was given to the responses that showed a tendency towards normal eating behaviour. A minimum of 15 and a maximum of 60 points can be obtained from the scale. Those with healthy eating behaviour (orthorexia nervosa) apparently score lower on this scale. Questions 2, 5, 8 and 9 in the test (items 3, 4, 6, 7, 10, 11, 12, 14, 15) are scored in reverse. Questions 1 and 13 are given 2 points if the response is 'always', 4 points if it is 'often', 3 points if it is 'sometimes' and 1 point if it is 'never', while questions 2-5-8-9 are given 4 points if it is 'always' and 3 points if it is 'often', questions 3-4-6-7-10-11-12-14-15 are given 1 point if the response is 'always', 2 points if 'often', 3 points if 'sometimes' and 4 points if 'never', and they were evaluated. It was tried to evaluate the individuals who took the test both emotionally and rationally. Therefore, there are questions investigating the "cognitive-rational domain" (1, 5, 6, 11, 12, 14), "clinical domain" (3, 7, 8, 9, 15) and "emotional domain" (2, 4, 10, 13). Ones with an Orto-15 scale score of ≥40 were considered to have orthorexia nervosa, and ones with a score of >40 were considered normal. Those with healthy eating behaviour (orthorexia nervosa) apparently score lower on this scale. The significance level was taken as 0.05 in the evaluation of the structural validity tests of the scale. The Turkish validity and reliability study of this scale was conducted by Arusoglu G, 2006 (13).

Data Analysis

The data obtained were statistically evaluated in SPSS 21.0 package programme (IBM Corp., Armonk, NY, USA). The statistical significance was accepted as $P<0.05$ in all analyses. The conformity of the data to normal distribution was checked by Kolmogorov Smirnov test. Descriptive statistics included number, percentage, mean, standard deviation, median, minimum and maximum values. Chi-square test was applied to analyse qualitative variables. Since continuous variables did not exhibit normal distribution, Mann Whitney U test was applied for two group comparisons and Kruskal Wallis test was applied for more than two group comparisons. Spearman's analysis was used for the relationship between continuous variables.

Results

The study was conducted with 561 volunteer participants, 80% (n=449) of whom were women and

20% (n=112) of whom were men. 61.7% of the participants belong to normal, 20.9% to overweight, 10.8% to underweight and 6.6% to obese BMI group (Table 1).

When the previous dietary treatment status of the participants was examined, 35.1% of the participants answered yes and 64.9% answered no. When we examined the status of frequent weighing, 39% of the participants weigh frequently, while 61% did not weigh frequently. 71.8% of the participants were concerned about increasing body weight.

Compared to normal individuals, BMI and social media addiction scale total score significantly higher and ORTO-15 total score was significantly lower (*P*<0.05). This result suggests that individuals who are afraid of increasing their body weight have higher BMI, social media addiction and orthorexia nervosa tendency. Regarding the regret after eating, 63.3% of the participants answered yes and 36.7% answered no. The tendency to orthorexia nervosa was significantly higher in individuals who had previously received diet therapy compared to those who had not (*P*<0.05). Body weight and BMI of individuals who regret after excessive food consumption were significantly higher and ORTO-15 total score was significantly lower (*P*<0.05) (Table 2).

61.9% of the participants consume sugary drinks. 84.3% of the participants consume fast food. The consumption of sugary drinks and fast food by individuals with orthorexia nervosa was significantly lower compared to normal individuals (*P*<0.05) (Table 1).

Table 1: Distribution of descriptive information of participants and dietary habits of participants

Demographic Characteristics	X±SD	Median (Min-Max)	
Age(yr)	**24.08±5.59**	**23 (18-52)**	
BMI	23.02 ±4.32		
		N	%
Gender	Woman	449	80
	Man	112	20
BMI categories	Underweight	61	10.8
	Normal	346	61.7
	Overweight	117	20.9
Ortorexia categories	Normal	107	19.1
	Ortorexia Nervosa	454	80.9
Education	Primary School	11	2
	High School University	104	18.5
	Master's degree / PhD	406	72.4
		40	7.1
Presence of Chronic Disease	Yes	58	103
	No	503	89.7
Regular Exercise	Yes	188	33.5
	No	373	66.5
Previous Dietary Treatment	Yes	197	35.1
	No	364	64.9
Frequent Weighing	Yes	219	39
	No	342	61
Fear of Body Weight Increase	Yes	403	71.8
	No	158	28.2
Regret After Eating	Yes	355	63.3
	No	206	36.7
Nutritional Habits		N	%

Table 1: Continued …

Number of Main Meals (Daily)	1 2 3	13 252 196	2.3 62.7 34.9
Number of Intermediate Meals (Daily)	0 1 2 3	58 206 206 91	10.3 36.7 36.7 16.2
Water Consumption (Daily)	500 mL 500-1000 mL 1000-2000 mL Over 2000 mL	27 158 244 132	4.8 28.2 43.5 23.5
Sugary Beverage Consumption (Daily)	Yes No	347 214	61.9 38.1
Frequency of Sugary Beverage Consumption (Daily)	Less than 1 water glass 1-3 water glass Over 3 water glasses	240 85 22	69.2 24.5 6.3
Fast Food Consumption	Yes No	473 88	84.3 15.7
Frequency of Fast Food Consumption	2-3 times a month 2-3 times a week 4-6 times a week	19 126 328	4.1 26.6 69.3

Table 2: Analysis of the Relationship between Age, Anthropometric Measurements, Dietary Habits and ORTO-15 Scale of the Participants

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Age		0.451	0.432	-0.005	-0.151	-0.379	-0.256	-0.365	0.062	-0.113	-0.113	-0.081
2. Body Weight	0.451		0.907	0.037	-0.081	-0.238	-0.141	-0.219	0.021	-0.131	-0.081	-0.102
3. BMI	0.432	0.907		-0.007	-0.053	-0.161	-0.102	-0.151	0.015	-0.159	-0.072	-0.116
4. Number of main meals	-0.005	0.037	-0.007		0.052	-0.012	0.011	-0.002	-0.005	0.058	-0.012	0.024
5. Number of intermediate meals	-0.151	-0.081	-0.053	0.052		0.145	0.055	0.119	0.019	-0.007	0.058	0.037
6. Virtual tolerance sub-score	-0.379	-0.238	-0.161	-0.012	0.145		0.588	0.921	-0.054	0.036	0.145	0.058
7. Virtual communication sub-score	-0.256	-0.141	-0.102	0.011	0.055	0.588		0.858	0.075	-0.056	0.132	0.082
8. Social media addiction scale total score	-0.365	-0.219	-0.151	-0.002	0.119	0.921	0.858		0.002	-0.004	0.156	0.076
9. Cognitive rational domain sub-score	0.062	0.021	0.015	-0.005	0.019	-0.054	0.075	0.002		-0.243	-0.169	0.588
10. Clinical domain sub-score	-0.113	-0.131	-0.159	0.058	-0.007	0.036	-0.056	-0.004	-0.243		0.152	0.491
11. Emotional domain sub-score	-0.113	-0.081	-0.072	-0.012	0.058	0.145	0.132	0.156	0.169	0.152		0.692
12. Orto-15 scale total score	-0.081	-0.102	-0.116	0.024	0.037	0.058	0.082	0.076	0.588	0.49	0.692	

Marked in bold, $P < 0.05$. R coefficients: 0-0.2: over underweight; 0.2-0.4: underweight; 0.4-0.6: average; 0.6-0.8: strong; >0.8: if there is full minus, in a negative direction, if there is no minus, in a positive level

To summarize, the decrease in the tendency to orthorexia nervosa as the social media addiction score increase was found to be very weakly significant (Table 3).

Table 3: Evaluation of Orthorexia Nervosa and Social Media Addiction According to BMI and Gender Categories

Variable		Median (Minimum - Maximum)					Median (Minimum - Maximum)
		Underweight	Normal	Overweight	Obese	P	Woman (n=449) Man (n=112) P
Social media addiction scale	Virtual tolerance sub-score	32 (19-52)	33 (13-55)	27 (11-50)	31 (11-42)	0.021*	33 (14-55) 25 (11-42) 0.001**
	Virtual communication sub-score	21 (9-41)	21 (9-44)	19 (9-36)	19 (9-32)	0.084	21 (9-44) 18 (9-40) 0.001**
	Total score	52 (28-93)	52 (24-94)	48 (20-74)	50 (20-70)	0.033*	53 (24-94) 43 (20-76) 0.001**
ORTO-15 Scale	Cognitive rational domain sub-score	11 (6-18)	12 (6-20)	12 (8-21)	11 (8-18)	0.341	12 (6-21) 12 (7-20) 0.413
	Clinical domain sub-score	15 (10-19)	15 (8-20)	14 (9-20)	13 (8-18)	0.008**	15 (8-20) 14 (10-20) 0.001**
	Emotional domain sub-score	10 (6-15)	10 (5-15)	10 (6-15)	9 (6-12)	0.5	10 (5-15) 10 (5-15) 0.737
	Total score	37 (28-47)	37 (23-47)	37 (28-45)	34 (29-43)	0.013**	37 (23-47) 37 (26-47) 0.551

* Significant differences between overweight and normal; overweight and underweight groups ($P<0.05$)
** Significant differences between underweight and obese, normal and obese, overweight and obese groups ($P<0.05$)

When ORTO-15 categories were evaluated, 80.9% of the participants were found to have orthorexia nervosa and 19.1% were found to be normal (Table 1).

The median BMI of individuals with orthorexia nervosa was significantly higher than that of normal individuals ($P<0.05$). Moreover, when the participants in our study were analysed according to their BMI categories, the total score of the ORTO-15 scale of obese individuals was significantly lower than that of underweight, normal and overweight individuals. ($P<0.05$).

Age, anthropometric measurements, sub-scores and total score of social media addictions and clinical domain sub-score of orthorexia nervosa were significantly different between the groups ($P<0.05$). The fact that the clinical domain sub-score and emotional domain sub-score decrease with increasing age was significant at a very weak level ($P<0.05$). According to this result, as the age increases, the tendency to orthorexia nervosa increases.

The fact that the total score of the social media addiction scale decreases as age and body weight increase was significant at a very weak level ($P<0.05$). The social media addiction scores of overweight individuals were significantly lower than individuals with underweight and normal body weight were ($P<0.05$).

At a very weak level the emotional domain sub-score increased as the virtual tolerance score and virtual communication score increased ($P<0.05$). A similar relationship was found between the total score of the social media addiction scale and the emotional domain sub-score ($P<0.05$).

Discussion

This study was conducted to determine the relationship between social media addiction and eating disorders in adults aged 18-65 years who follow social media influencer. 80.9% of the participants who followed the social media influencer with a high population were had orthorexia nervosa and 19.1% were normal.

Orthorexia nervosa is an obsession with healthy eating associated with the neglect of important dietary rules and food groups (4). Psychological and social complications arise due to the obsession with healthy eating. These individuals strive to adhere to dietary rules, leading to feelings such as intense anxiety, guilt and shame and resulting in stricter dietary restrictions (14). Considering that our study ended with the participation of a high proportion of individuals with orthorexia nervosa, it is an expected result that these individuals have obsessive behaviours on healthy eating such as less consumption of sugary drinks and fast food with a significant difference compared to normal individuals, feeling regret after consuming excess food, fear of body weight gain and having more diet treatments in the past.

The high use of social media, particularly by young individuals, and the concept of social media addiction has emerged as one of the important issues that have risen in recent years. It is seen that social platforms such as Twitter, Instagram and Facebook are frequently used, in particular by young adults (15). According to 2019 TUIK (Turkish Statistical Institute) data, internet usage in our country is 91.7% among 25-34 years old, 85.9% among 35-44 years old, 68.5% among 45-54 years old, 42.6% among 55-64 years old and 19.8% among 65-74 years old (16). In our study, which confirms this information, social media addiction decreases as age increases ($P<0.05$).

With the popularity of social networking sites, derogatory comments about body image and body weight, weight, eating and exercise habits, fear of excessive weight gain, appearance and behaviour comparisons or strategies to change appearance have escalated. Different impacts of exposure to such content have been investigated. The researchers hypothesised that participants viewing such content would have high levels of body image dissatisfaction and self-objectification (17). Body image dissatisfaction has potentially serious consequences, such as impaired eating behaviours. Social media use may possibly contribute to body image dissatisfaction and its consequences. Social media can exacerbate these impacts and support the desire to be underweight. The young individuals who use social media to obtain information about body weight loss may be unintentionally exposed to various body messages through the media. Likewise, users who do not seek information may also be unintentionally exposed to these messages (18). Furthermore, frequent reading of nutrition-related posts on social media was positively associated with the risk of orthorexia nervosa tendency and impaired eating behaviour (19). It found to be negative effect on physical and mental health (20). In our study, fear of body weight gain increased as social media addiction increased. Under the light of all this information; considering that our participants are social media influencers and dieticians who produce content on beauty, fashion and nutrition, we suggest that social media may heighten susceptibility to orthorexia nervosa in individuals by affecting body image concerns.

In our study, it was significantly found at a very weak level that the emotional domain sub-score increased as the virtual tolerance score and virtual communication score increased ($P<0.05$). A similar relationship was found between the total score of the social media addiction scale and the emotional domain sub-score ($P<0.05$). To summarize, the decrease in the tendency to orthorexia nervosa as the social media addiction score increase was very weakly significant. Screen and especially audio activities negatively affected healthy food choices and body weight (21). Although the result we found is opposite to our hypothesis, in a study conducted, the orthorexia nervosa tendencies of social media users and the factors that affect such tendencies were evaluated, and it was found that people without orthorexia nervosa tendency spent more time on social media (22).

Finally, although the aim of our study was not to

determine the prevalence, orthorexia nervosa is still not included in the definition of eating disorders. So prevalence studies are ongoing. We think that our study will contribute to these studies. We found the prevalence of orthorexia nervosa to be 80.9% in our study. In a prevalence study conducted in Turkey, a healthy orthorexia prevalence of 32.3% was reported (23). In the current study, the prevalence of orthorexia nervosa was in the range of % 6.9-75.2 worldwide (14).

Strengths: Followers who follow a single social media account participated in our study. This prevented other confounding factors. Performing the study in a high population and the fact that the social media influencer is also a dietician besides producing content about her appearance are the strengths of our study.

Limitations: Our study resulted in a high rate of women participation because the social media influencer was a woman with a high proportion of woman followers. In addition, social media addiction was evaluated via Instagram by taking a single platform as a basis. The high female population and the high number of young individuals can be considered as confounders of the study.

Conclusion

Eating disorders and social media addiction are on the rise in the world and in Turkey and it is considered that it will increase in the coming years. It is crucial to implement preventive measures and develop effective treatment modalities that will reduce or eliminate this issue more rapidly. Our participants follow a social media influencer who is at the forefront with her appearance and dietician identity, and most of the participants were found to have orthorexia nervosa. Considering that many influencers are accessible on social media platforms, awareness against the negative effects of social media can be raised through trainings and correct content to be provided to individuals.

However, a healthier approach to social media use may promote better eating behaviors and positive body image. Although the studies on social media and orthorexia nervosa are not sufficient, the results of our study suggest that more studies should be conducted with more and wider masses.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of Interest

Non-declared.

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