

The Relationship of Food Addiction With Emotional Control and Socio-Cultural Factors in University Employees

Elif Reis¹, Gülistan Çakır¹, Havvanur Demirkaya¹, Neslihan Kuzu¹, Türkan Atay¹, Aliye Özenoğlu²

¹Department of Nutrition and Dietetics, Üsküdar University Faculty of Health Sciences, İstanbul, Turkey

²Department of Nutrition and Dietetics, İstinye University Faculty of Health Sciences, İstanbul, Turkey

ABSTRACT

BACKGROUND/AIMS: The aim of this study was to examine the relationship between food addiction in university employees with emotion control, sociodemographic and sociocultural factors and social media use.

MATERIALS AND METHODS: The study was conducted on 213 administrative and academic staff working at a foundation university. The data was collected by a demographic fact sheet, the Social Media Addiction Scale-Adult Form (SMAS-AF), the Courtauld Emotion Control Scale (CECS) and the Yale Food Addiction Scale (YFAS).

RESULTS: The average age of the participants was 36±10 years and 65.7% of them were women. Of all the participants, 4.7% (n=10) were found to be addicted to food and 80% (n=8) of these were women. A significant inverse relationship was found between SMAS-AF and CECS total scores. As social media addiction increases, emotion control decreases. Among those with food addiction, the proportion of those with a low-income levels was greater compared to any other income group. There was no significant relationship between food addiction and gender, age, social media addiction, or emotion control. A significant negative correlation was found between age and the total score of social media addiction.

CONCLUSION: In our study, the prevalence of food addicts among university employees was low. The fact that the rate of the food addicts was higher in women and those who were single and those who had low-income levels reveals that gender, marital status and income levels are important socio-cultural factors. While no relationship was found between food addiction and emotion control or social media addiction, higher scores of SMAS-AF were noted in single and low-income users.

Keywords: Food addiction, emotion control, socio-cultural factors, social media addiction

INTRODUCTION

Food addiction is described as an increased risk of encountering obesity and associated health problems as a result of excessive consumption of certain foods. Although it is not quite right to describe food as an addictive object in the same way as abused substances, consuming processed foods and foods containing high fat and carbohydrates in order to meet reward needs rather than physiological needs make the expression “food addiction” meaningful.¹ In recent years, with the

increasing obesity epidemic around the world, there is an opinion that the binge eating disorder and overeating behaviors seen in obese individuals can be recognized as “food addiction”.²

It is clear that an individual's emotional condition, which is a major determinant in addictive actions, also has an impact on uptake behavior and disorders. Studies have revealed that a person's emotional state affects their nutrient uptake, leading to less nutrient uptake in normal-weight people, and more nutrient uptake in overweight

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ORCID iDs of the authors: E.R. 0000-0003-3869-1663; G.Ç. 0000-0001-9440-8354; H.D. 0000-0002-8063-5414; N.K. 0000-0001-8623-3881; T.A. 0000-0001-6678-8468; A.Ö. 0000-0003-3101-7342.



Address for Correspondence: Aliye Özenoğlu

E-mail: aozenoglu@yahoo.com

ORCID ID: orcid.org/0000-0003-3101-7342

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people.^{3,4} Fluctuations in mood and negative behaviors affect the tendency towards delicious foods.⁵ Furthermore, it has been observed that distortions in the hedonic system are counterproductive to the suppression of hunger and that in situations, such as stress or regret, the body is triggered to turn to food even if it does not need it.^{6,7} Many sociologists think that sociocultural factors influence body perception and eating behaviors, and especially the family, environment and social media play a very important role in the formation of binge uptake and food addiction.⁸⁻¹⁰ Sociocultural factors that concern the individual and society are mainly race, gender, education, material status, technological ability and the environment. A study on the population in Arab countries found that belief, gender, education, income level, mass media usage and food preferences, which are the main sociocultural factors, play an important role in the amount of food consumed in that region.^{11,12}

Although there are studies in the literature on the relationship of food addiction between obesity and mood, research on emotion control and socio-cultural factors are insufficient. Therefore, this study aimed to analyze the effects of social media use, socio-cultural factors and emotion control on food addiction in university employees.

MATERIALS AND METHODS

The universe of this study included 879 executives and academic staff from a foundation university in Istanbul, Turkey. The study was approved by the Ethics Committee of Üsküdar University (no: 6135134/2019-619, date: 27.12.2019) and conducted according to the principles of the Helsinki Declaration. The sample size was calculated to be 98 participants with 0.05 error and 95% confidence interval. A total of 213 volunteers participated in this study. Individuals aged 18 years and below, employees with any disability or substance abuse history were excluded. The questionnaires to be applied within the scope of the research were handed out to the volunteers. They were given a week to fill in the questionnaires and they were collected 1 week later. The demographic information form, the Yale Food Addiction Scale (YFAS), the Social Media Addiction Scale-Adult Form (SMAS-AF), and the Courtauld Emotion Control Scale (CECS) were used to collect the data.

Demographic Information Form

Age, gender, education level, profession, income level, marital status, and smoking/alcohol use were asked in the demographic information form. In addition, accommodation, drug use, disease status, social media use, its frequency and its duration were investigated.

Yale Food Addiction Scale

This scale was developed in 2009 by Gearhardt et al.¹³ according to DSMIV-TR drug addiction diagnosis criteria. It was designed to diagnose behavioral food addiction. This scale includes seven diagnostic criteria. At least one of the diagnostic criteria ranging from 0 to 7 must be met to say that the food addiction criteria was observed, and at least three of seven diagnostic criteria must be met for a diagnosis of food addiction. The validity and reliability of this scale in Turkey was proven in 2012 by Bayraktar et al.¹⁴ in a study using 300 university students.

Social Media Addiction Scale-Adult Form

This form has a five-point Likert type structure. The scale has two sub-dimensions which are virtual tolerance and virtual communication. One hundred is the highest score that can be obtained from the scale, and the lowest score is 20. A higher score indicates a “social media addict”.

The validity and reliability of this scale in Turkey was carried out in 2017 by Şahin and Yağcı.¹⁵

Courtauld Emotion Control Scale

This scale was developed by Watson and Greer in 1983.¹⁶ This scale was prepared to determine to what extent an individual control his/her reactions. It has not been prepared to determine to what extent an individual reflects or suppresses his/her feelings, such as anger, anxiety and unhappiness. It has three subscales. All subscale scores range from 7 to 28, and the total score ranges from 21 to 84. Emotion control increases as the score increases. The validity and reliability of this scale for the Turkish population was proven in a study of university students by Okyayuz.¹⁷

Statistical Analysis

The SPSS 24 (Chicago, IL, USA) statistical program was used to calculate the data. The Independent Sample t-test, the ANOVA test, and the chi-square test were used to analyze the relationship between scale scores and sociocultural variables. Correlation analysis was used to investigate the relationship between food addiction, emotion control, and social media addiction scores.

RESULTS

In this study, there were 213 participants and 140 (65.7%) of them were women and 71 (33.3%) were men. The average age of the participants was 36 ± 10 years. There were two volunteers who did not want to report their gender. The findings were calculated in accordance with this situation. 120 (56%) of the participants did not smoke; 106 (50%) did not use alcohol; 179 (84%) did not have any chronic disease; 131 (62%) did not use Facebook, while 119 (56%) used Google+ and 119 (56%) used Twitter, 154 (72%) used Instagram, 158 (74%) used Youtube; 152 (71%) followed social media from desktop and mobile devices (laptop, tablet, smartphone); and 137 (64%) had been using social media for over 7 years and 113 (53%) spent 1–3 hours per day on social media.

In this study, the frequency of food addiction was found to be 4.7% ($n=10$). Of those with a food addiction, 80% ($n=8$) were female, 50% smoked, 80% had low-income levels, 70% ($n=7$) were single, and 60% ($n=6$) had been educated to primary school level or less. 108 (98.2%) of those without food addiction had a middle-income level ($p=0.03$) and 103 (99%) were married ($p=0.02$). There were no statistically significant differences between food addiction and gender ($p=0.50$), smoking ($p=0.79$), alcohol use ($p=0.59$), housing ($p=0.07$), social media usage time ($p=0.17$) and social usage media frequency ($p=0.07$) (Table 1). There was no statistically significant difference between the YFAS subscale scores and the gender variable.

SMAS-YF had a virtual tolerance sub-dimension average of 22.37 ± 6.71 ; a virtual communication sub-dimension average of 18.15 ± 5.84 ; and a total score average of 40.32 ± 11.33 . When the demographic data and SMAS-AF were compared, there was no significant difference between the total score obtained from the scale and smoking ($p=0.48$), housing ($p=0.214$) and social media usage time ($p=0.061$). The mean total score of the scale was significantly higher in those who used alcohol ($p=0.045$), those with low incomes ($p=0.003$), those who were single ($p=0.001$) and those who used social media for more than 7 hours a day ($p=0.000$). There was no statistically significant difference between the average SMAS-AF score and sub-scale score averages and YFAS results (Table 2). A negative correlation was found between the SMAS-AF total

Table 1. Comparison of sociodemographic and sociocultural data and YFAS scores

		Food addiction				p-value
		No		Yes		
		n	%	n	%	
Gender	Male	69	97.2	2	2.8	0.50
	Female	132	94.3	8	5.7	
Smoking	Yes	40	93	3	7	0.79
	Sometimes	39	95.1	2	4.9	
	Quit	9	100	0	0	
	No	115	95.8	5	4.2	
Alcohol use	Yes	21	93.4	5	6.6	0.59
	Sometimes	73	93.6	3	6.4	
	Quit	8	100	0	0	
	No	101	97.3	2	2.7	
Income	Low (2000–4999)	80	90.9	8	9.1	0.03
	Middle (5000–9999)	108	98.2	2	1.8	
	High (10,000+)	14	100	0	0	
Marital status	Married	103	99	1	1	0.02
	Single	87	92.6	7	7.4	
	Divorced	13	86.7	2	13.3	
Housing	Alone	35	94.6	2	5.4	0.07
	With Family	161	96.4	6	3.6	
	With close relative	3	75	1	25	
	With friends	4	80	1	20	
Social media usage time	1–3 years	19	100	0	0	0.17
	4–6 years	51	91.1	5	8.9	
	More than 7 years	132	96.4	5	3.6	
Social media daily usage frequency	Less than 1 hour	62	95.4	3	4.6	0.07
	1–3 hour	110	97.3	3	2.7	
	4–6 hour	24	85.7	4	14.3	
	More than 7 hour	6	100	0	0	

YFAS: Yale Food Addiction Scale, n: number.

score ($p=0.000$), Virtual Tolerance ($p=0.000$) and Virtual Communication ($p=0.001$) subscale mean scores in relation to age.

According to CECS, the mean of “anger” was 15.17 ± 3.81 , the mean of “anxiety” was 15.16 ± 2.75 , the mean of “unhappiness” was 14.98 ± 3.52 and the mean of the total points was 45.33 ± 8.95 . There was no statistically significant difference between the average CECS score and the sub-scale score averages and the YFAS results (Table 3). There was no statistically significant difference between gender and the subtypes of CECS “anger” ($p=0.129$), “anxiety” ($p=0.598$) and “unhappiness” ($p=0.727$) in this study. The CECS total scores ($p=0.766$), ‘Anger’ ($p=0.889$), “anxiety” ($p=0.844$) and “unhappiness” ($p=0.356$) scores were found to have no statistically significant association between the sub-scale score averages and age. A statistically inverse relationship ($r=-0.195$; $p<0.004$) was found between the average SMAS-AF total score and the average CECS total score.

DISCUSSION

The frequency of food addiction was found to be 4.7% in our study. According to the CECS, the average total score of the participants

was determined to be 45.33 ± 8.95 . This shows that the participants had moderate emotion control. The average total score of SMAS-AF was found to be 40.32 ± 11.33 . This shows that the participants were not inclined to social media addiction. In various studies to date on food addiction in adults, it has been reported that sociodemographic and sociocultural factors, gender, smoking, alcohol use, income level, marital status, accommodation, social media usage time of the mother, and education status of the mother and father are relevant.¹⁸⁻²¹ One study found that women who have low income had a poor relationship with food addiction.²⁰ In another study, it was determined that low-income women saw eating desire and food addiction as similar and common behaviors, and for them, food addiction was out of control. Women who had low income described food addiction as less common and more serious.²² In a study by Ramachandran et al.¹⁹, it was reported that there is a relationship between obesity and upper economic levels. In that study, it was found that the group with food addiction had a moderate economic status. A study of 1,048 randomly selected Chinese university students (540 men and 508 women) found that anxiety caused by high-intensity living conditions predicted overeating.²³ In a study aimed to identify the prevalence of internet addiction and related

Table 2. Comparison of SMAS-AF scores in the presence of food addiction

	Food addiction	n	Avg ± SD	p-value
SMAS total	Yes	10	40.73±12.54	0.908
	No	203	40.30±11.30	
SMAS virtual tolerance	Yes	10	22.33±6.41	0.985
	No	203	22.38±6.74	
SMAS virtual communication	Yes	10	19.80±8.21	0.527
	No	203	18.07±5.72	

Avg: average, SMAS-AF: Social Media Addiction Scale-Adult Form, SD: standard deviation, n: number.

factors among young adults (19–35 years old) in Bangladesh, internet addiction was found to be significantly related to lifestyle, time spent on the internet per day, family life, physical activity and smoking habits.²⁴ In our study, it was seen that, in general, people with food addiction had low income and were single.

Even though food addiction is thought to be more related to food, sudden emotional changes are known to cause excessive eating behaviors and addiction. In the research conducted by Innamorati et al.²⁵, it was stated that food addiction occurs when strong emotions arise and there is a problem in understanding these emotions. It was determined in a study conducted in 2017 that negative mood affects eating behavior and may be related to food addiction.²⁶ In another study, it was found that loneliness and emotional dysregulation were significantly positively related to food addiction.²⁷ In one study on emotion regulation strategies and food addiction, it was observed that the condition such as emotional openness, negative emotion, impulsivity, and self-distrust were more common in those volunteers with food addiction than in the volunteers who did not have any addiction.²⁸ In our study, no significant correlation was found between the total dependency of the Courtauld Emotion Control Scale and the anger-happiness-anxiety sub-dimension total scores. However, in the presence of food addiction, the CECS total score was found to be slightly lower.

When the literature was examined, it was seen that food addiction is interrelated with emotional eating.²⁹⁻³¹ Irregular feeding attitudes are rapidly increasing, especially among adolescents and young women in their twenties. Social media can lead to irregular eating behaviors that are affected by diverse factors such as popularizing unrealistic beauty ideals. In one study, the results suggested that food addiction was connected with a higher body mass index in women and older and white people and/or people with lower incomes.²¹ In another study, Duran et al.³² investigated the effect of stress and social media use on eating behaviors in university students. A statistically significant difference was identified between the degree of stress and eating behavior disorders, and it was found that the increase in stress severity caused abnormal eating behavior. It has been determined that increasing the duration of social media use causes eating behavior disorders.³² In another study in which video-based effects were examined, it was indicated that the “mukbang” style of video on social media affects emotional control and may cause food addiction.³³ In a study investigating the effect of social media attention on eating attitudes and body dissatisfaction in Filipino adolescents, the results confirm the effects of social media on adolescents’ eating attitudes and body dissatisfaction.³⁴ A study of eleven adolescents found that phone addiction was associated with greater emotional regulation difficulties, irregular nutrition, restricted eating, food addiction, and higher body fat.³⁵ On the other hand, in

Table 3. Comparison of CECS scores in the presence of food addiction

	Food addiction	n	Average	p-value
CECS total	No	203	129	0.23
	Yes	10	105	
CECS - anger	No	203	135	0.13
	Yes	10	105	
CECS – anxiety	No	203	129	0.23
	Yes	10	105	
CECS - unhappiness	No	203	113	0.73
	Yes	10	106	

CECS: Courtauld Emotional Control Scale, n: number.

our study, no statistically significant difference was found between the average SMAS-AF score and the mean subscale scores and the results of the YFAS.

Limitations of the Study

In our study, individuals aged 18 years and below, employees with any disability, disease or substance abuse history were excluded. Only adults working in one university were examined. One of the important limitations is that the height and body weight of the participants were not investigated in our study. Therefore, the relationship between BMI and the scales used in the study could not be examined. As the relationship between obesity and food addiction is well-known, if such a study is conducted in obese patients, the frequency of food addiction will be found to be relatively higher. Thus, the effect of emotion control in food addiction can be better determined. In addition, it is recommended to conduct multi-center studies on people who have different professions and live in different cities.

CONCLUSION

In our study, the prevalence of those with food addiction among university employees was found to be low. The fact that the majority of those with food addiction were mostly single women with a low income levels reveals that gender, marital status and income level are important sociocultural factors. While food addiction was not associated with emotion control and social media addiction, higher total scores of SMAS-AF among single and low-income users, those who use alcohol and those who use social media for more than 7 hours a day point to the contribution of sociocultural factors in social media addiction. Eating behavior and nutritional preferences are not only physiological needs, but also emotional and social needs.

It is recommended to carry out similar studies in different populations in the future as it is thought that the low rate of food addiction in the sample examined within the scope of our study may be a factor in the lack of a relationship between emotion control and social media addiction. Specifically, it is thought that the effect of emotion control can be better evaluated in a sample of overweight individuals who have more common emotional eating behaviors.

MAIN POINTS

- In our study in which the effect of various factors on food addiction among university employees was investigated, it was found that especially having a low-income level, being single and being female were important factors.

- There were significant negative correlations between a person's age and their social media addiction and emotion control.
- It can be concluded that social media addiction, as with other addictions, may negatively affect emotional control, mental health and quality of life over time.

ETHICS

Ethics Committee Approval: Ethics committee approval was received for this study from the Non-Interventional Research Ethics Board (date: 27/12/2019, approval number: 6135134/2019-619) of Üsküdar University.

Informed Consent: Informed consent was obtained from all participants.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: A.Ö., Design: E.R., A.Ö., Supervision: A.Ö., Data Collection and/or Processing: E.R., G.Ç., H.D., N.K., T.A., A.Ö., Analysis and/or Interpretation: E.R., G.Ç., H.D., N.K., T.A., Literature Search: E.R., G.Ç., H.D., N.K., T.A., Writing: E.R., G.Ç., H.D., N.K., T.A., A.Ö., Critical Reviews: E.R., G.Ç., H.D., N.K., T.A., A.Ö.

DISCLOSURES

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