

## RESEARCH / ARAŞTIRMA

**Social Media Addiction among University Students and Its Impact on Adherence to the Mediterranean Diet**Zeynep Şeyda TUT BİLİM <sup>1</sup>, Suphiye Mine YURTTAGÜL <sup>2</sup><sup>1</sup> Yozgat Bozok University Vocational School of Health Services, Department of Home Patient Care Services, Yozgat, Türkiye, **ORCID:** 0000-0002-6767-673X<sup>2</sup> Hasan Kalyoncu University Faculty of Health Sciences, Department of Nutrition and Dietetics, Gaziantep, Türkiye, **ORCID:** 0000-0001-5170-0523**ABSTRACT****Objective:** Social media addiction (SMA) can negatively affect individuals' physical and healthy nutrition. This study aimed to investigate the relationship between SMA and adherence to the Mediterranean Diet (MedDiet) among university students.**Materials and Methods:** The study sample consisted of 406 students enrolled during the Fall semester of the 2020-2021 academic year. Data collection tools included the Social Media Addiction Scale (SMAS) to evaluate the extent of SMA and the Mediterranean Diet Adherence Scale (KIDMED) to assess dietary patterns.**Results:** Among the students who participated in the study the mean age of 21.07±3.06 years. 66.0% of the students consumed two main meals per day, with lunch being the most frequently skipped meal. The adherence to the MedDiet was moderate for 59.6% of male students and 57.9% of female students. 81.1% of the students spent time on social media during main meals. SMA of varying levels was detected in 63.8% of the students. A weak negative correlation was found between the KIDMED scores and the SMAS scores of the participants ( $p<0.05$ ). As SMA increases, adherence to the 'MedDiet decreases ( $p<0.05$ ).**Conclusion:** The findings suggest that SMA negatively impacts healthy eating habits and lowering adherence to the MedDiet. Addressing these issues through awareness programs and educational interventions can help mitigate the negative effects of SMA on students' dietary behaviors. These results provide valuable insights for developing public health strategies to foster healthier lifestyles among university students.**Keywords:** Social media addiction, Mediterranean diet, healthy nutrition.**Üniversite Öğrencilerinde Sosyal Medya Bağımlılığı ve Sosyal Medya Bağımlılığının Akdeniz Diyetine Uyum Üzerindeki Etkisi****ÖZET****Amaç:** Sosyal medya bağımlılığı (SMB) bireylerin fiziksel ve sağlıklı beslenmelerini olumsuz etkileyebilir. Bu çalışmanın amacı, üniversite öğrencileri arasında SMB ile Akdeniz Diyetine bağlılık arasındaki ilişkiyi araştırmaktır.**Gereç ve Yöntem:** Çalışmanın örneklemini 2020-2021 akademik yılı güz döneminde kayıtlı olan 406 öğrenciden oluşmaktadır. Araştırmada SMB düzeyini belirlemek için Sosyal Medya Bağımlılığı Ölçeği (SMBÖ) ve sağlıklı beslenme alışkanlığını değerlendirmek için Akdeniz Diyetine Uyum Ölçeği (KIDMED) kullanılmıştır.**Bulgular:** Çalışmaya katılan öğrencilerin ortalama yaşları 21,07±3,06'dır. Öğrencilerin %66,0'sı günlük iki ana öğün tüketirken, en sık atlanan öğünün öğle yemeği olduğu belirlenmiştir. Erkek öğrencilerin %59,6'sı ve kız öğrencilerin %57,9'u Akdeniz Diyeti'ne orta düzeyde uyum sağlamaktadır. Ana öğün tüketimi esnasında, öğrencilerin %81,1'i sosyal medyada vakit geçirmektedir. Araştırmaya katılan öğrencilerin %63,8'inde çeşitli düzeylerde sosyal medya bağımlılığı tespit edilmiştir. Katılımcıların KIDMED puanları ile SMBÖ puanları arasında negatif yönlü zayıf bir korelasyon bulunmuştur ( $p<0,05$ ). Sosyal medya bağımlılığı arttıkça Akdeniz Diyeti 'ne uyumun azaldığı görülmüştür ( $p<0,05$ ).**Sonuç:** Elde edilen bulgular, SMB'nın sağlıklı beslenme alışkanlıklarını olumsuz etkilediğini ve Akdeniz diyetine uyumu azalttığını göstermektedir. Farkındalık programları ve eğitim müdahaleleri yoluyla bu sorunların ele alınması, SMB'nın öğrencilerin beslenme davranışları üzerindeki olumsuz etkilerinin azaltılmasına yardımcı olabilir. Bu bulgular, üniversite öğrencileri arasında daha sağlıklı yaşam tarzlarını teşvik etmeye yönelik halk sağlığı stratejilerinin geliştirilmesine katkı sağlayacak önemli bilgiler sunmaktadır.**Anahtar Kelimeler:** Sosyal medya bağımlılığı, Akdeniz diyeti, sağlıklı beslenme.**1. Introduction**

In contemporary times, social media (SM) has become indispensable to individuals' daily lives (1). SM is a Web 2.0 phenomenon encompassing all platforms where users can create, review, and share content. These platforms include social

networking sites, blogs, virtual interactive games, and video-sharing websites (2).

According to the Digital 2023 report, the number of active social media users worldwide has reached 4.7 billion, accounting for 59.4% of the global population, with an average daily usage time of 2 hours and 31 minutes. In 2023, Türkiye had 62.5 million

**Corresponding Author:** Zeynep Şeyda TUT BİLİM, Yozgat Bozok University Vocational School of Health Services, Department of Home Patient Care Services, Yozgat, Türkiye

**E-mail:** <mailto:seydatut@gmail.com> **ORCID:** 0000-0002-6767-673X

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active social media users, representing 73.1% of the national population, which indicates a 4.1% increase compared to 2020. The mean daily time spent on SM in Türkiye is reported to be 2 hours and 54 minutes (3).

Individuals have started using SM platforms for entertainment and social interaction, such as spending time, sharing photos, chatting, or playing games (4). However, what initially appears to be normal behavior may evolve into problematic and obsessive patterns over time, thus becoming characterized as addiction (5). The concept of addiction is generally used to describe physical dependence on a substance. Excessive use of the internet and SM, defined as spending between 8.5 to 21.5 hours per week on these platforms, is recognized as an addiction (6-8).

The concept of internet addiction, first introduced by Goldberg in 1996, expands the usage of the term "addiction," which is commonly associated with dependence on physical substances. Goldberg described internet addiction as excessive internet usage marked by at least three symptoms occurring within a twelve-month period, causing notable impairment or distress. This definition aligns with the substance addiction criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) (9). Internet addiction is also mentioned as a behavioral addiction in DSM-V (10). Internet addiction is frequently associated with social media addiction (SMA) and gaming addiction, thus SMA is considered a subcategory of excessive internet use (11, 12).

Social media addiction can affect individuals' physical health, psychological health, and behaviors negatively (13). Research indicates that increased body mass index are associated with an increase in internet addiction among university students. (14). Another study has revealed a relationship between problematic internet use, snacking while using a computer, skipping breakfast, and obesity. Excessive internet use was found among students with elevated body mass index (15). Adults who choose to spend their free time on the internet and computers are more likely to be at a higher risk of becoming overweight and obese. Consequently, internet addiction and obesity can be regarded as long-term and persistent nutrition and health issues (16).

Universities and other educational environments are prominent places where internet addiction can develop. Excessive use of mobile phones and prolonged internet use may expose students to abnormal sleep patterns, lifestyle changes, and poor academic performance. Lifestyle changes from the internet and mobile phone use can threaten overall health. Social media addiction has become an increasingly prevalent issue, particularly among young populations, and it has been shown to negatively impact individuals' psychological, social, and physical well-being. Simultaneously, it is well-established that healthy dietary habits and lifestyle behaviors play a critical role in overall health. The Mediterranean diet, supported by extensive scientific research, is recognized as a dietary pattern with proven positive effects on both physical and mental health (17).

This study investigates the relationship between social media addiction and adherence to the Mediterranean diet among university students. By addressing these two significant phenomena together and analyzing their potential interconnection, the research offers a novel perspective. The findings of the study have the potential to guide the development of intervention programs targeting social media addiction and to promote healthier dietary habits. Moreover, this research provides a unique contribution to understanding the health behaviors of university students, aiming to serve as a valuable resource for both academic literature and public health policies.

## 2. Materials and Methods

The objective of this study is to assess the level of SMA among university students and examine its impact on their nutritional status. All procedures were carried out in accordance with the

Helsinki Declaration. The data were collected from October 2020 to May 2021, with participants providing informed consent.

### 2.1. Participants

The population of the study consisted of 7,347 students enrolled at Hasan Kalyoncu University during the Fall semester of the 2020-2021 academic year. Based on this population, the required sample size was calculated as 302 individuals using the known-population proportional sampling formula, with a 95% confidence interval and a 5% margin of error.

The survey questions were administered online. In this study, data were collected from a total of 406 participants. The criteria for sample selection included active enrollment in the university, the absence of any communication barriers, and voluntary participation in the study.

### 2.2. Data Collection

Data were collected using an online survey that asked questions on participants' demographics, dietary habits, and social media usage. Participants' body mass index (BMI) was determined using their self-reported height and weight, applying the formula  $\text{weight (kg)} / \text{height (m)}^2$ .

The Social Media Addiction Scale (SMAS) was used to evaluate SMA among university students. The SMAS, consisting of 41 items, uses a five-point Likert scale with frequency expressions ranging from "always" to "never." The minimum score obtainable from the SMAS is 41, and the maximum score is 205. The internal consistency coefficient (Cronbach's alpha) of the scale was determined to be 0.96 (18). In this study, the Cronbach alpha coefficient of the SMAS tool was 0.91.

The KIDMED (Mediterranean Diet Quality Index), developed by Serra-Majem et al., includes a total of 16 questions and evaluates adherence to the Mediterranean Diet (MedDiet). Scores from the index are categorized into three groups:  $\geq 8$  points indicating optimal nutrition quality (good), 4-7 points indicating the need for improvement in adherence to the MedDiet (moderate), and  $\leq 3$  points indicating very low nutrition quality (low). Cronbach's alpha coefficient was found to be 0.857 (19). In this study, the Cronbach alpha coefficient of the SMAS tool was 0.82.

### 2.3. Statistical Analysis

Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 25.0 software. Distributions related to students' socio-demographic characteristics, meal consumption habits, and SM usage were determined through frequency analysis.

Descriptive statistics, including mean, standard deviation, and range (minimum and maximum values), were used for students' anthropometric data, compliance with the MedDiet, and SMAS scores. The Kolmogorov-Smirnov test was used to assess the data set's normality in order to test the research hypotheses; the results showed that the data did not follow a normal distribution. Consequently, non-parametric hypothesis tests were used. When the independent variable consisted of two groups, the Mann-Whitney U test was used. For three or more groups, the Kruskal-Wallis H test was used. The Spearman correlation test was applied to examine relationships between two variables. A significance level of  $p < 0.05$  was applied to all statistical analyses.

### 2.4. Ethical Considerations

The research was conducted with approval from the Hasan Kalyoncu University Non-Invasive Ethics Committee, under permission number 2020/077 dated September 29, 2020.

## 3. Results

This study was conducted with 406 students (104 male, 25.6%; 302 female, 74.4%) who were enrolled at Hasan Kalyoncu

University and voluntarily participated in the research. The general characteristics of the participants are presented in Table 1.

**Table 1.** General characteristics of students

	Number (n)	Percentage (%)
Yaş, yıl	20,03 (4,02)	22,51 (1,4)
Gender		
Male	104	25.6
Female	302	74.4
Faculty		
Health sciences faculty	127	31.3
Other faculties	279	68.7
Age, years ( $\bar{x} \pm SD$ )	21.07 $\pm$ 3.06	
Adherence to MedDiet		
Low	91	22.4
Moderate	237	58.4
High	78	19.2
KIDMED score ( $\bar{x} \pm SD$ )	5.23 $\pm$ 2.44	
Social media usage status		
Users	365	89.9
Non-users	41	10.1
Daily social media usage duration (Hours) ( $\bar{x} \pm SD$ )	4.51 $\pm$ 2.34	
Using social media status while consuming main meals		
Always	23	6.3
Often	73	20.0
Sometimes	114	31.2
Rarely	86	23.6
Never	69	18.9
Food consumption status while using social media		
Always	10	2.7
Often	59	16.2
Sometimes	145	39.7
Rarely	92	25.2
Never	59	16.2
Foods consumed	170,43 (8.95)	169,21 (8,33)
Tea, coffee	210	57.5
Chips, wafers, biscuits	164	44.9
Fruits	152	41.6
Nuts	142	38.9
Pastry	81	22.2
Soft drinks	78	21.4
Dry fruit	63	17.3
Milk, yoghurt, ayran	44	12.1
Diet products	13	3.6
Total	406	100.0

SD: Standard Deviation

The mean age of the participants was 21.07  $\pm$  3.06 years. Distribution of the faculties and schools attended by the students showed that 31.3% were from the Faculty of Health Sciences, while 68.7% were from other faculties and schools.

Table 1 provides a detailed breakdown of the student's scores on the KIDMED. The average KIDMED score among the students was 5.23  $\pm$  2.44. Among male students, 59.6% had a moderate KIDMED score, whereas 57.9% of female students were in the same range. Overall, 58.4% of all students demonstrated moderate adherence to the MedDiet. It was determined that 89.9% of the participating students used SM, with an average daily usage time of 4.51  $\pm$  2.34 hours. It was noted that 81.1% of the participants used SM during main meals, while 18.9% did not use SM during main meals. Additionally, 8.8% of the students consumed snacks while using SM, whereas 16.2% did not consume anything during SM use. (Table 1). Regarding the preferred foods consumed by students while using SM, it was found that 57.5% consumed tea or coffee, 44.9% consumed chips, wafers, or biscuits, 41.6% consumed fruit, 38.9%

consumed nuts, 22.2% consumed pastries, 21.4% consumed soft drinks, 17.3% consumed dried fruit, 12.1% consumed milk, yogurt, or ayran, and 3.6% consumed diet products.

The anthropometric data of the participants are shown in Table 2. According to self-reported information, male students had an average height of 178.54  $\pm$  5.87 cm, an average weight of 77.78  $\pm$  14.54 kg, and an average body mass index (BMI) of 24.36  $\pm$  4.20 kg/m<sup>2</sup>. For female students, the average height, weight, and BMI were 164.64  $\pm$  6.04 cm, 59.82  $\pm$  10.28 kg, and 22.05  $\pm$  3.53 kg/m<sup>2</sup>, respectively.

**Table 2.** Anthropometric characteristics of students

	Gender	( $\bar{x} \pm SD$ )	Min-Max
Height length (cm)	Male	178.54 $\pm$ 5.87	160.00-194.00
	Female	164.64 $\pm$ 6.04	125.00-182.00
Body weight (kg)	Male	77.78 $\pm$ 14.54	45.00-130.00
	Female	59.82 $\pm$ 10.28	37.00-92.00
BMI (kg/m <sup>2</sup> )	Male	24.36 $\pm$ 4.20	17.58-40.12
	Female	22.05 $\pm$ 3.53	15.79-40.96
BMI classification	Normal (%)		Overweight and obese (%)
	Male	57.7	40.4
	Female	66.9	17.8
	Total	64.5	23.6

BMI: Body Mass Index, SD: Standard Deviation, Min: Minimum, Max: Maximum

When examining BMI classifications, it was found that 57.7% of male students were categorized as having a normal weight, while 40.4% were categorized as overweight or obese. For female students, 66.9% were classified as having a normal weight, and 17.8% were categorized as overweight or obese. Overall, 23.6% of all students were identified as overweight or obese.

Table 3 displays the SMAS scores of the students. It was found that students exhibited moderate levels of addiction in the engagement subscale and moderate levels in the mood regulation subscale. The repetition subscale showed low levels of addiction, as did the conflict subscale. Overall, the average SMAS score of the students was 91.58  $\pm$  33.46, indicating that students generally exhibited low levels of SMA.

**Table 3.** Students' Social Media Addiction Scale scores

	Number (n)	( $\bar{x} \pm SD$ )	Min-Max
Occupation	365	33.15 $\pm$ 10.76	12.00-60.00
Mood Regulation	365	12.44 $\pm$ 5.71	5.00-25.00
Repetition	365	10.29 $\pm$ 5.32	5.00-25.00
Conflict	365	35.71 $\pm$ 16.35	19.00-95.00
Social Media Addiction Scale Score	365	91.58 $\pm$ 33.46	41.00-205.00

SD: Standard Deviation, Min: Minimum, Max: Maximum

Table 4 compares the SMAS scores with various characteristics of the students. Statistical analysis indicated a significant difference in SMAS scores across different genders ( $p < 0.05$ ). Female students had statistically significantly higher SMAS scores than male students. There was not a significant difference found in SMAS scores based on the faculty attended or the number of main meals ( $p > 0.05$ ).

However, a statistically significant difference in SMAS scores was observed based on the frequency of skipping main meals ( $p < 0.05$ ). Students who frequently skipped main meals had significantly higher SMAS scores compared to those who never skipped main meals.

Table 5 presents correlations between students' anthropometric measurements, KIDMED scores, and SMAS scores. No statistically significant relationship was observed between BMI values and KIDMED scores ( $p > 0.05$ ). Nevertheless, a weak negative correlation was noted between KIDMED scores and SMAS scores ( $p < 0.05$ ). This result suggests that SMA negatively affects nutritional status.



obesity compared to the literature. Compared to the data in the

**Table 4.** Comparison of Social Media Addiction Scale scores according to some characteristics of students

	n	( $\bar{x} \pm SD$ )	M	MR	Z/ $\chi^2$	p	Difference
Gender							
Male	93	84.0 $\pm$ 34.4	74.0	154	-3.052	0.002*	
Female	272	94.1 $\pm$ 32.7	89.0	192			
Faculty							
Health sciences faculty	253	91.5 $\pm$ 34.5	85.0	181	-0.38	0.703	
Other faculties	112	91.6 $\pm$ 31.0	88.0	186			
Consumed daily number of main meals							
One meal	22	95.1 $\pm$ 36.4	94.0	192	2.913	0.233	
Two meals	236	93.3 $\pm$ 33.7	88.0	188			
Three meals	107	86.9 $\pm$ 32.0	81.0	168			
Main meal skipping status							
Always	25	99.4 $\pm$ 44.4	98.0	194	9.560	0.049*	2-5
Often	66	101.0 $\pm$ 35.2	100.0	215			
Sometimes	103	87.8 $\pm$ 30.3	85.0	173			
Rarely	64	91.5 $\pm$ 31.9	88.0	185			
Never	107	86.9 $\pm$ 32.0	81.0	168			

M: Median, MR: Mean Rank, Z: Mann-Whitney U Test,  $\chi^2$ : Kruskal Wallis-H Test, SD: Standard Deviation, \*p < 0.05

**Table 5.** The relationship between students' anthropometric measurements, Mediterranean Diet Compliance Scale, and Social Media Addiction Scale scores

		BMI	KIDMED	SMAS
BMI	r	1	0.003	-0.048
	p	.	0.952	0.363
KIDMED	r		1	-0.112
	p		.	0.033*
SMAS	r			1
	p			.

r: Spearman's Correlation Coefficient, BMI: Body Mass Index, SMAS: Social Media Addiction Scale, \*p < 0.05

#### 4. Discussion

This study aimed to evaluate SMA and eating behaviors among university students. Social media addiction (SMA) was prevalent among 63.8% of the students. A weak negative correlation was identified between SMA and adherence to the Mediterranean Diet (MedDiet) (p<0.05), indicating that higher levels of SMA were associated with lower adherence to the MedDiet.

Additionally, 66% of the students reported consuming only two main meals daily, with lunch being the most frequently skipped meal. SMA levels were notably higher among those who skipped meals. Furthermore, 81.1% of the students used social media during their main meals, and this behavior was linked to frequent consumption of unhealthy snacks such as chips and biscuits. Students with higher SMA scores exhibited poorer adherence to healthy eating behaviors overall. The findings reveal that 89.9% of students used SM, with 63.8% exhibiting signs of SMA. In contrast, a study by Şimşek et al. (20), which evaluated high school and university students, found that students were moderately addicted to SM. However, this study observed that the general level of SMA among students was relatively low. The average daily SM usage among students was found to be 4.5 hours. A similar study on internet addiction among university students also reported an average usage time of 4.5 hours (21).

Participants' BMI classifications were evaluated according to the WHO's BMI criteria. For female students, 66.9% were considered to have a normal weight, whereas 17.8% were classified as overweight or obese. For male students, 57.7% were categorized as having normal weight, and 40.4% were categorized as overweight or obese. This result could be attributed to the use of self-reported weight and height information. According to the WHO's 2022 data, 43% of adults worldwide (males: 43%, females: 44%) are overweight, while in Türkiye, 40.9% of adult women and 25.2% of men have a BMI  $\geq 30$  (22). The female students in this study exhibited lower rates of overweight and

literature, the reason why female students were found to be less overweight or obese in this study is thought to be due to the collection of data through online questionnaires. Research shows that female students, particularly adolescents and young adults, are more likely to engage in behaviors where they hide or withhold data about their appearance. This tendency can be influenced by factors such as the internalization of appearance ideals (23).

Social media is among the most prevalent uses of the internet. SMA is frequently associated with internet addiction (24). Individuals who spend more time online are prone to behaviors such as prolonged inactivity, which can lead to weight gain and reduced physical activity, thereby decreasing energy expenditure. Additionally, internet use is associated with increased consumption of unhealthy snacks, which may be a risk factor for weight gain and obesity. A study conducted on undergraduate students indicated that individuals with higher levels of social media addiction may have unhealthier eating habits (25-27). While this study did not identify a significant connection between SMA and BMI, there are studies indicating that SMA increases BMI (21, 28).

In Türkiye, students generally do not prioritize the consumption of main meals and place more importance on the satiety of their meals rather than their nutritional value (29). The tendency to skip main meals is common among university students (30-32). In this study, 71.7% of students reported skipping main meals. A study focusing on students from the faculty of health sciences reported that 60.3% of students skip main meals (29). The most commonly skipped meals among students were lunch (48.3%) and breakfast (38.9%). Similarly, in a study involving 1,608 university students, it was observed that 51% regularly skipped breakfast, 13.9% skipped lunch, and 35.6% skipped dinner. It was found that most of the students skip meals, with breakfast being the most frequently skipped meal (51%). (30) This study found that 48.3% of students skip lunch. Meal skipping is a prevalent behavior among university students, but the unique circumstances of the COVID-19 pandemic may have further exacerbated this tendency. The pandemic led to significant changes in students' daily routines, including alterations in sleep patterns due to lockdowns and social isolation. As a result, many students experienced delayed meal times, particularly breakfast, which in turn contributed to an increased frequency of skipping lunch and other main meals. A study conducted during the pandemic revealed that 48% of the students reported skipping main meals, primarily due to disruptions in their sleep patterns. (33). In our study, when examining students' meal skipping habits, it appears that changes in sleep patterns due to lockdowns and isolation during the pandemic may have led to

later breakfast times, which, in turn, contributed to more frequent skipping of lunch. Skipping meals is an unhealthy eating behavior associated with obesity (34).

The students' adherence to healthy eating behaviors was assessed using the KIDMED. It was observed that 58.4% of students showed moderate adherence to the MedDiet. Studies on university students generally report moderate adherence to the MedDiet (35-38). In Türkiye, university students' adherence to the MedDiet is generally low (38,39). This could be due to the high consumption of baked foods, red meat, processed meat, and fast food, and the insufficient intake of vegetables, fruits, fish, nuts, and olive oil. These eating habits may have negatively impacted the adherence of the students in our study to the Mediterranean diet. This dietary imbalance, characterized by a high intake of unhealthy, energy-dense foods and a lack of nutrient-rich, plant-based foods, likely undermines the students' ability to fully embrace the Mediterranean diet, which emphasizes the consumption of fresh, whole foods and healthy fats.

A narrative review of eating behaviors among university students highlighted increased consumption of unhealthy snacks while engaged in internet use (40). Our research indicates that university students often eat while using the internet, particularly indulging in frequent snacking during online activities. Individuals with problematic internet use are often so preoccupied with being online that they may lose track of how much they eat, skip meals, or opt for unhealthy snacks out of convenience rather than making mindful dietary choices. These unconscious behaviors can lead to the development of eating disorders and have detrimental long-term effects on health. The excessive and mindless use of smartphones and social media distracts individuals, reducing their awareness of their eating habits and consumption patterns. This constant digital engagement not only disturbs attention but also alters the quantity and quality of food consumed, leading to poor dietary choices. Given these risks, social media addiction and the excessive use of social media can be considered significant risk factors for the development of unhealthy eating habits. Yong et al. (41) reported that 86.5% of individuals use smartphones during meals, and these individuals eat faster. Individuals who spend more time online may be unaware of their food intake, skip meals, or consume unhealthy snacks instead of regular meals.

A weak negative correlation was observed between the KIDMED and the SMAS ( $p < 0.05$ ), suggesting that as SMA decreases, there is a tendency for healthier eating behaviors. A healthy lifestyle has been noted as a preventive factor against internet addiction (42). Coşkun and Demir (43) also found that increased SMA negatively affects attitudes toward healthy eating. The negative correlation between KIDMED and SMAS suggests that social media addiction may be associated with unhealthy eating habits. This could be attributed to the fact that the time spent on social media reduces meal planning and awareness, encourages a sedentary lifestyle, and psychologically influences individuals to turn to unhealthy foods. These factors highlight the importance of controlling social media use in promoting and maintaining a healthy lifestyle.

#### 4.1. Limitations

This study has some limitations. The administration of survey questions through face-to-face interviews instead of online methods, along with the recording of anthropometric measurements such as height and weight by researchers rather than relying on self-reported data from participants, could have significantly enhanced the methodological quality of the study. This approach would minimize the potential for errors stemming from self-reported data, thereby reducing the likelihood of these inaccuracies influencing the study's outcomes. Additionally, it would improve the accuracy and reliability of the data, contributing to more consistent and valid results.

Furthermore, incorporating dietary assessment methods such as food consumption records and food frequency questionnaires in addition to the KIDMED score could have provided a more comprehensive and detailed evaluation of participants' dietary habits. This approach would offer a broader perspective on participants' dietary patterns, allowing for a more robust understanding of the relationship between findings and general nutritional behaviors.

Future studies should consider these methodological limitations and aim to conduct research with larger sample sizes and the integration of diverse data collection methods. Such improvements would enhance the generalizability of the findings and contribute more profoundly to the academic literature.

## 5. Conclusion and Recommendations

This study examined the relationship between social media addiction and adherence to the Mediterranean Diet among university students, revealing that social media addiction has adverse effects on healthy eating habits. Today, university students have prevalent access to the internet and mobile devices. This access can be beneficial for obtaining evidence-based scientific information, harmless entertainment, and socialization, provided it is used appropriately. However, when such access and usage turn into addiction, it can pose risks to physical, mental, and social health. The findings indicate that social media addiction may impair individuals' ability to plan meals, maintain awareness during eating, and make healthy dietary choices. A significant majority of participants exhibited symptoms of social media addiction, and 81.1% reported using social media during their main meals. While adherence to the Mediterranean Diet was generally at a moderate level, it was observed that this adherence decreased as social media addiction increased.

The negative impacts of social media addiction identified in this study highlight critical areas for intervention in managing digital habits and promoting healthy eating behaviors. Awareness campaigns aimed at reducing social media use during meals could be effective in preventing the adverse dietary behaviors associated with social media addiction. Additionally, strategies such as educational programs and digital detox initiatives are recommended to help students develop healthier eating habits.

In conclusion, this research demonstrates that the effects of social media addiction extend beyond psychological and social domains, posing significant consequences for individuals' physical health and healthy lifestyle behaviors. Providing guidance and raising awareness about managing digital habits are crucial for fostering a healthy lifestyle among university students. These findings serve as a valuable resource for developing public health policies, educational strategies, and individualized intervention programs to address the broader impacts of social media addiction.

## 6. Contribution to the Field

Social media addiction is a condition that is becoming increasingly common among young people. This addiction can negatively affect physical, social, and mental health. According to our findings, social media addiction is seen in university students and as social media addiction increases, healthy eating behavior is also negatively affected. In this context, it is anticipated that the results of this study will contribute to future research exploring the relationship between social media addiction and healthy eating behaviors. Furthermore, the findings are expected to enhance public awareness about the detrimental effects of social media addiction, potentially guiding efforts to prevent its prevalence and foster healthier lifestyle choices within society. This could be particularly valuable in developing preventive interventions and educational campaigns that aim to mitigate the adverse impacts of social media on physical and mental well-being.

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None

## Conflict of Interest

There is no conflict of interest regarding any person or institution.

## Authorship Contribution

Concept: ZŞTB, SMY; Design: ZŞTB, SMY; Supervision: ZŞTB, SMY; Funding: ZŞTB; Materials: ZŞTB; Data Collection/Processing: ZŞTB, SMY; Analysis/Interpretation: ZŞTB, SMY; Literature Review: ZŞTB; Manuscript Writing: ZŞTB, SMY; Critical Review: SMY.

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## References

- Masthi NRR, Pruthvi S, Phaneendra MS. A comparative study on social media usage and health status among students studying in pre-university colleges of urban Bengaluru. *Indian J Community Med.* 2018;43(3):180–184. DOI: 10.4103/ijcm.IJCM\_285\_17
- Aksu O. Yeni toplumsal hareketler bağlamında sosyal medya kullanımı analizi: kadın dernekleri. *Açıköğretim Uygulamaları ve Araştırmaları Derg.* 2017;3(3):146–159.
- <https://wearesocial.com> [Internet]Digital 2023- We Are Social. Accessed; 2023 [cited 2024 Sep 5]. Available from: <https://wearesocial.com/us/blog/2023/01/digital-2023/>
- Allen KA, Ryan T, Gray DL, McInerney DM, Waters L. Social media use and social connectedness in adolescents: The positives and the potential pitfalls. *Australian Educational and Developmental Psychologist.* 2014;31(1): 18-31. DOI: 10.1017/edp.2014.2.
- Griffiths M. A "components" model of addiction within a biopsychosocial framework. *J Subst Use.* 2005;10(4):191–197. DOI: 10.1080/14659890500114359.
- Ceyhan E, Ceyhan AA, Gürçan AA. Problemler İnternet Kullanımı Ölçeği' nin geçerlik ve güvenilirlik çalışmaları. *Kuram ve Uygulamada Eğitim Bilimleri.* 2007;7(1):387-416.10.
- Yang SC, Tung CJ. Comparison of Internet addicts and non-addicts in Taiwanese high school. *Comput Human Behav.* 2007;23(1):79–96. DOI: 10.1016/j.chb.2004.03.037.
- Holden C. "Behavioral" addictions: Do they exist? *Science.* 2001;294:980– 982. DOI:10.1126/science.294.5544.980.
- Goldberg I. Internet addiction disorder. *CyberPsychol. Behavior,* 1996;3(4):403-412.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Van Den Eijnden RJJM, Lemmens JS, Valkenburg PM. The Social Media Disorder Scale: Validity and psychometric properties. *Comput Human Behav.* 2016;61:478–487. DOI:10.1016/j.chb.2016.03.038.
- Riad Mousa Jaradat M-I., Jebreen Atyeh A. Do personality traits play a role in social media addiction? key considerations for the successful optimized model to avoid social networking sites addiction: A developing country perspective. *IJCSNS International Journal of Computer Science and Network Security.* 2017;17(8):120-131.
- Seslikaya C, Arslan S. The effect of social media use on emotional eating in women aged 19-45. *J Health Sci Med* 2023;6(2): 394-400.
- Güçlü S, Tabak RS, Tütüncü İ, Yılmaz F. İnternet bağımlılığı: Gerçekten obeziteye neden olur mu? *Uluslararası Hakemli Beslenme Araştırmaları Derg.* 2016;3(7):50–64.
- Kabasakal Z. Tekada T. Gençlerde internet bağımlılığı ve obezite. II. Uluslararası Eğitim Araştırmaları ve Öğretmen Eğitimi Kongresi bildirisi. 2018. Aydın.
- Vandelandotte C, Sugiyama T, Gardiner P, Owen N. Associations of leisure-time internet and computer use with overweight and obesity, physical activity and sedentary behaviors: Cross-sectional study. *J Med Internet Res.* 2009;11(3):e1084. DOI: 10.2196/jmir.1084.
- Kawyannejad R, Mirzaei M, Valinejadi A, Hemmatpour B, Karimpour HA, Aminisaman J, Ezzati E, Vaziri S, Safaeepour M, Mohammadi S. General health of medical students of medical sciences and its relation to sleep quality, cell phone overuse, social networks and internet addiction. *Biopsychosoc Med.* 2019;13(1):1–7. DOI: 10.1186/s13030-019-0150-7.
- Tutgun Ünal A. Deniz L. Development of the social media addiction scale. *Online Academic Journal of Information Technology.* 2015;6(21):51-70. DOI: 10.5824/1309-1581.2015.4.004.x.
- Serra-Majem L, Ribas L, Ngo J, Ortega RM, García A, Pérez-Rodrigo C, Aranceta J. Food, youth and the Mediterranean diet in Spain. Development of KIDMED, Mediterranean Diet Quality Index in children and adolescents. *Public Health Nutr.* 2004;7(7):931–935. DOI: 10.1079/phn2004556.
- Şimşek A, Elçiyar K, Kızılhan T. A comparative study on social media addiction of high school and university students. *Contemporary educational technology,* 2019; 10(2): 106-119. DOI:10.30935/cet.554452.
- Tayhan Kartal F, Yabancı Ayhan N. Relationship between eating disorders and internet and smartphone addiction in college students. *Eat Weight Disord.* 2021;26(6): 1853–1862. DOI:10.1007/s40519-020-01027-x.
- World Health Organization. Obesity and overweight. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight> Accessed [29.07.2024].
- Jarman, H., Marques, M. D., McLean, S. A., Slater, A., & Paxton, S. J. Social media, body satisfaction and well-being among adolescents: A mediation model of appearance-ideal internalization and comparison. *Body Image,* 2021;(36), 139–148. DOI:10.1016/j.bodyim.2020.11.005.
- Eijnden RV, Lemmens JS, Valkenburg PM. The Social Media Disorder Scale. *Computers in Human Behavior.* 2016;(61), 478-487. DOI: 10.1016/j.chb.2016.03.038.
- Küçükcankurtaran, S. Yetişkin Bireylerde Sosyal Medya Bağımlılığının Antropometrik Ölçümler ve Besin Tüketimi İle İlişkinin Değerlendirilmesi. *Selçuk Sağlık Dergisi,* 2022;3(3), 255 – 269.
- Aghasi M, Matinfar A, Golzarand M, Salari-Moghaddam A, Ebrahimipour-Koujan S. Internet use in relation to overweight and obesity: a systematic review and Meta-analysis of cross-sectional studies. *Adv. Nutr.* 2019;11, 349–356. DOI: 10.1093/advances/nmz073.
- Schaan C. W, Cureau FV, Salvo D, Kohl HW, Schaan BD. Unhealthy snack intake modifies the association between screen-based sedentary time and metabolic syndrome in Brazilian adolescents. *Int. J. Behav. Nutr. Phys. Act.* 2019;16:115. DOI:10.1186/s12966-019-0880-8.
- Tatar S, Özdemir A, Altuntaş ZS, Mercimekçi S, Aypak C. Relationship between social media addiction and bodyweight. *Eur J ClinExp Med.* 2023;21(1):14–18. DOI: 10.15584/ejcem.2023.1.2.
- Zemzemoğlu AEA, Erem TE, Uludağ S, Uzun E. Sağlık bilimleri fakültesi öğrencilerinin beslenme alışkanlıklarının belirlenmesi. *Food Heal.* 2019;5(3):185–196. DOI:10.3153/FH19020.
- de-Arruda JP, de-Souza APA, Pereira LP, Fonseca LB, Nogueira PS, Rodrigues PRM, Muraro AP, Ferreira MG. Short Sleep Duration and Skipping Main Meals among University Students. *Sleep Sci.* 2024 (efirst). DOI: 10.1055/s-0044-1782178.
- Olagunju, T. M., Aleru, O. E., Abodunrin, R. O., Adedini, B. C., Ola, M. O., Abel, C., Adewole, E. I., Okunbor, N. H., & Akinsolu, T. F. Association between meal skipping and the double burden of malnutrition among university students. *The North African Journal of Food and Nutrition Research,* 2024;8 (17): 167– 177.
- Choi SE, Lee Y. Comparison of Meal Skipping, Snacking, and Body Weight Perceptions among Urban College Students: On-Campus Living Alone vs. Off-Campus Living with Parents in New York, USA.

Journal of the Korean Society of Food Culture Vol. 2022;37(2):109-118. DOI:10.7318/KJFC/2022.37.2.109.

33. Erdoğan R. Pandemi döneminde beden eğitimi ve spor yüksekokulu öğrencilerinin beslenme alışkanlıkları ve fiziksel aktivite düzeylerinin belirlenmesi. OPUS Uluslararası Toplum Araştırmaları Derg. 2021;17(Pandemi Özel Sayısı):3276–3295. DOI:10.26466/opus.862585.
34. Aslan NN, Yardımcı H, Özçelik AÖ. Üniversite sınavına hazırlanan öğrencilerin makro besin ögesi alımları ve antropometrik ölçümlerle ilişkisi. Erciyes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi. 2017;(4)1; 39-48.
35. Trigueros R, Padilla AM, Aguilar-Parra JM, Rocamora P, MoralesGázquez MJ, López-Liria R. The influence of emotional intelligence on resilience, test anxiety, academic stress and the mediterranean diet. A study with university students. Int. J. Environ. Res. Public Health. 2020;17(6):2071. DOI: 10.3390/ijerph17062071.
36. Fiore M, Ledda C, Rapisarda V, Sentina E, Mauceri C, D'Agati P, Conti GO, Serra-Majem L, Ferrante M. Medical school fails to improve Mediterranean diet adherence among medical students. European Journal of Public Health. 2015;25(6): 1019-1023. DOI: 10.1093/eurpub/ckv127.
37. Zurita-Ortega F, Román-Mata S, Chacón-Cuberos R, Castro-Sánchez M, Muros JJ. Adherence to the mediterranean diet is associated with physical activity, self-concept and sociodemographic factors in university student. Nutrients. 2018;10(8): 966. DOI: 10.3390/nu10080966.
38. Kadioğlu BU, Ayten Ş. Akdeniz Diyetine Uyum ve Üniversite Öğrencilerinin Bazı Antropometrik Özellikleri. Online Türk Sağlık Bilimleri Dergisi, 2021;6(1):121-128. DOI: 10.26453/otjhs.801293.
39. Bayındır Gümüş A, Yardımcı H. Üniversite öğrencilerinin günlük besin ögesi alımlarının Akdeniz diyeti kalite indeksi (KIDMED) ile ilişkisi. Adıyaman Üniversitesi Sağlık Bilimleri Dergisi. 2020;(2):167–173. DOI:10.30569/adiyamansaglik.706404.
40. Almoraie NM, Alothmani NM, Alomari WD, Al-amoudi AH. Addressing nutritional issues and eating behaviours among university students: a narrative review. Nutrition Research Reviews. Published online 2024:1-16. doi:10.1017/S0954422424000088.
41. Yong JYY, Tong EMW, Liu JCJ. Meal-time smartphone use in an obesogenic environment: Two longitudinal observational studies. JMIR mHealth uHealth. 2021;9(5): e22929. DOI: 10.2196/22929.
42. Kırış N., Güver Y. Hemşirelik öğrencilerinin internet bağımlılığı ve sağlıklı yaşam biçimi davranışları arasındaki ilişki. Bağımlılık Dergisi.2019; 20(4):232-240. (183).
43. Gürsoy Coşkun G, Atmaca Demir B. Lisans öğrencilerinin sosyal medya bağımlılığı ile sağlıklı beslenmeye ilişkin tutumlarının değerlendirilmesi- İstanbul'da bir üniversite örneği. Fenerbahçe Üniversitesi Sağlık Bilimleri Dergisi 2021;1(3): 195-205.