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Relationship between social media addiction and bodyweight

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ABSTRACT

Introduction and aim. Social media addiction is increasing rapidly due to the widespread use of smartphones and the availability of the internet. Also, social media addiction constitutes a risk factor for many physical and mental diseases. We aimed to determine the frequency of social media addiction among obese patients.

Material and methods. Adult patients who were admitted to the Diet Clinic of a tertiary healthcare hospital in order to lose weight enrolled in the study. A questionnaire including; Social Media Addiction Scale, body mass index (BMI), and demographic information (age, sex) was applied to all participants. Participants were grouped as obese, overweight, and normal weight.

Results. A total of 179 patients (mean age: 34.1±12.6 years) enrolled in the study. No difference in sex was found (45.2% women, 47.3% men). Approximately half of the study population was found to be social media addicts. Participants younger than 45 years of age were found to have higher rates of social media addiction (X^2= 4.26; p<0.05). The frequency of social media addiction was found to increase with increasing BMI (41.7%, 43.6%, and 48%; respectively).

Conclusion. Social media addiction is prevalent and it is also more frequent in younger adults. Learning more about social media addiction and its relationship with obesity can decrease its health consequences.

Keywords. addictive behavior, body mass index, obesity, social media

Introduction

Social media (SM) which was only a communication tool at first now occupies a very important place in our lives as a result of the increasing prevalence of smartphones and easy access to the internet. SM are web 2.0 applications where online content is produced, shared and individuals collaborate.[1] It includes; blogs, videos, photos, multimedia materials that do not require or use limited personal information, content communities where articles are shared, social networking sites where individuals interact with their environment by creating their profiles, and games played by many people at the same time by creating virtual characters.[2]

What differentiates SM, from traditional media is that it is interaction-based, sharing-themed, and user-based. SM, which has become the most effective way for people to express themselves, has 4.6 billion users today and 90% of whom access it through mobile applications.[3] Social media addiction can be defined as a behavioral addiction characterized by a constant urge to use SM and spending too much time on it which results in impairment of other daily activities of the individual.[4]

Today more than 1.9 billion adults aged 18 and over are overweight, and more than 600 million of them were obese. In another words, 39% of adult population are

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overweight and 13% are obese worldwide.[5] The etiology of obesity is multifactorial but the most important mechanism is the storage of fat in the adipose tissue as a result of high caloric intake and low physical activity. Developing technology and our evolving social system facilitates sedentary lifestyles which causes to obesity. In recent years, studies on the relationship between the internet and SMA (Social Media Addiction) to mental and physical diseases have been increasing as they constitute a major role in our lives.[6,7]

Obesity is considered an epidemic disease with critical health implications and a major risk factor for non-communicable diseases, putting a burden on healthcare systems.[8,9] Learning more about its etiology can contribute to a decrease in its resultant health consequences and lessen the economic burden on the health care systems.

Aim

Therefore, in this study, we aimed to determine the frequency of SMA in different BMI groups and to evaluate whether a relationship exists between SMA and bodyweight.

Material and methods

Ethical approval

This study was approved by the local ethics committee (Ethics Committee of Health Sciences University Diskapi Yildirim Beyazit Training and Research Hospital-Ankara date: 27.11.2017 decision number: 43/16).

Study design

We conducted a cross-sectional study among patients admitted to the Diet Clinic of a tertiary healthcare hospital. The power analysis we carried out revealed that our study required minimum sample size of 170 participants to provide a statistical power of 0.80. All subjects voluntarily (i.e., they did not receive payment or other compensation) and anonymously participated in the present research and gave their written informed consent to take part in the study. The inclusion criteria included intending to lose weight or to have a controlled diet and being over 18 years old. Data were collected over a time period of 3 months. A total of 203 patients volunteered to participate in the study. Due to incomplete information, 24 patients were excluded and the study was performed with 179 patients. A questionnaire including Social Media Addiction Scale (SMAS) and demographic information (age, sex) was applied to all participants. All patients' body mass indexes (BMI) were calculated by measuring their height and weight. SMAS is a 5- point Likert-type questionnaire consisting of 41 items with a Cronbach's alpha value of 0.967 which emerged after all validity and reliability studies were conducted. The lowest score that can be obtained from

SMAS is 41 while the highest score is 205. Participants were grouped as followed according to their scores; 41-73: 'no SMA' and ≥74: 'have SMA'.[10]

BMI, a rough population measure of obesity, is calculated by dividing a person's weight (in kilograms) by their height (in meters) squared. The method of measurement does not differ according to sex or age. According to WHO; a person with a BMI of 30 or more is classified as obese, and a person with a BMI in the range of 25-29.99 is classified as overweight. The value of >18.5, which is accepted as the lower limit in BMI measurement, allows us to distinguish normal weight.[5]

Data were analyzed using Statistical Package for Social Sciences (SPSS version 21.0, IBM®, Chicago, IL, US). Descriptive statistical methods in the evaluation of demographic data; frequency, percentage, mean, and standard deviation were used. The normal distribution of the data was tested by the Shapiro-Wilks test. Quantitative variables were stated as mean ± standard deviation and categorical variables as number and percentage (%). In the examination of a statistically significant difference in categorical variables between the groups, the Chi-Square test was used. The correlation between BMI and SMAS score was assessed by Pearson's correlation analysis. The differences were considered statistically significant when the p-value was lower than 0.05.

Results

A total of 179 patients (124 (69.3%) women, 55 (30.7%) men) enrolled in the study. The mean age of the participants was 34.1±12.6 years. Twenty-four of the patients (13.4%) were normal weight, fifty-five (30.7%) were over-weight and one hundred patients were obese (55.9%). Analysis of the data revealed that; 45.8% of all patients were found to be SM addicts. When the relationship between sex and SMA was evaluated; it was determined that 47.3% of men and 45.2% of women were SM addicts. There is no significant relationship between sex and SMA (X^2= 0.07; p>0.05).

The analysis of the SMA status of the participants according to BMI groups showed that 41.7% of the participants in the normal weight group, 43.6% of the overweight participants, and 48% of the obese participants were SM addicts. When the overweight and obese participants were evaluated together, it was determined that 46.5% of them were SM addicts. There is no significant relationship between the BMI group and SMA (X^2= 0.46; p>0.05), (Table 1).

The relationship between age groups and SMA was evaluated by dividing the participants into two groups; under 45 years and over 45 years. It was determined that 50% of the participants under the age of 45 and 31.7% of the participants aged 45 and above were SM addicts. The SMA rate is higher in participants under the age of 45 (X^2= 4.26; p<0.05), (Table 2).

Table 1. Relationship between body mass index and social media addiction

			Social Media Addiction		Total	X^2	p
			Absent	Present			
Body Mass Index Groups	Normal	n	14	10	24		
		%	58.3%	41.7%	100%		
	Overweight	n	31	24	55		
		%	56.4%	43.6%	100%	0.46	0.79
	Obese	n	52	48	100		
		%	52%	48%	100%		
Total		n	97	82	179		
		%	54.2%	45.8%	100%		

Table 2. The relationship between age groups and social media addiction

			Social Media Addiction		Total	X^2	p
			Absent	Present			
Age Groups	<45 years	n	69	69	138		
		%	50%	50%	100%		
	≥45 years	n	28	13	41		
		%	68.3%	31.7%	100%	4.26	0.04
Total		n	97	82	179		
		%	54.2%	45.8%	100%		

When the correlation between BMI and SMA scores in the group under the age of 45 is looked into; it is understood that there is a low-level positive and statistically insignificant relationship between BMI and SMA scores (r=0.052; p>0.05). When the results are evaluated in general without considering the age groups, it is seen that there is a low-level positive and statistically insignificant relationship between BMI and SMA scores (r=0.041; p>0.05).

Discussion

SMA is mostly investigated as a risk factor for psychiatric diseases with children, adolescents, and young people mainly chosen as the target group.[6,7] Problematic use of SM is found to be associated with depression and anxiety, as well as eating disorders, self-harm, and suicidal ideation.[6-11] The striking point in these studies is that in addition to its relationship with psychiatric diseases SM also causes isolation and a decrease in daily physical activities of the individuals. This situation has brought the possibility of SMA being a cause of obesity on our agenda. However, there is a limited number of published studies investigating the relationship between SMA and obesity. On the other hand, the internet addiction obesity relationship has managed to be the subject of many studies in the last decade.

SMA and internet addiction are closely related topics with the latter being a more popular topic of research. Similar problems arise as a result of problematic use. The increase in internet and SM usage time causes a decrease in the time allocated for physical activity.

When the studies on internet addiction are reviewed, it is seen that internet addiction triggers obesity. One of the studies showed that moderate/severe internet addiction is associated with a 22-fold increased risk of obesity.[12]

In a study conducted by Bozkurt H. et al. in 2018; the frequency of internet addiction and its relationship with BMI was investigated in children and adolescents aged 8 to 17 years. A total of 437 people were sampled, of which 268 were obese and 169 were healthy control groups. They found the prevalence of internet addiction at 24.6% in the obese group and 11.2% in the control group. In conclusion, a significant relationship between internet addiction and BMI was found.[13]

In a few studies about SM, it has been claimed that it can cause decreased physical activity and eating disorders which are risk factors for obesity and concluded that, exceeding two hours of daily use of any electronic media was found to be associated with increased risk of being overweight.[14]

In our study, the SMA rate was higher in the age group below 45 years. We found this grouping appropriate as according to age classification young age is considered to be up to 44. Although it was not significant, as BMI increases in this age group, SMA scores also increase and there is a higher positivity as compared to the general study population. When the literature is reviewed, it is seen that similar results are supporting this data. In a recent study that examined the relationship between SMA and psychiatric diseases, a negative relationship was found between SMA and age.[15] Another study involving 556 women found that Facebook addiction decreased with age.[16] The higher prevalence of SMA in the younger age group can be attributable to their higher levels of digital literacy and understanding.[17]

The recent articles mostly studied the effects of SM on the younger population. Considering the effect of time in our study, we found it appropriate to include adults as well instead of limiting SMA to young people. There is no doubt that the use of the internet and SM will gradually become widespread in the adult population and there will be an increase in studies on adults. In particular, the effects of this addiction on human health will be better understood with studies to be conducted on the 18–45 age group which has a high addiction rate.

When SMA was evaluated according to sex, our data revealed no significant relationship. In the literature, several previous types of research have pointed out the same finding. In a study conducted with 194 social network users, no statistically significant difference was found between social network addiction and sex.[18] In another study in Turkey, where 447 students were examined in terms of Facebook addiction, it was found that there was no significant relationship between sex and Facebook addiction.[19] In a study investigating the

psychological risk factors of SMA, in which smartphone users between the ages of 18 and 40 participated in China, it was found that there was no significant relationship between sex and SMA.[20] On the contrary several researches in recent years had findings that show a sex tendency. Some studies have revealed that males were more addicted to SM.[21-23] While other studies have results where females have a higher addiction rate than males.[24] Another interesting sex-related data in our study was that the female participants were much more in number than the male participants. Since we conducted our study in a diet clinic, the reason for this may be that women have higher body dissatisfaction as compared to male.[25]

The weak correlation in our study may have been caused by insufficient sample size and/or uneven sample distribution. In future studies, stronger results can be obtained if the distribution of the obese and control groups is kept equal and the sample size is increased. Another limitation of our study can be the 'self-assessment bias' which arises when participants do not accurately judge their level of social addiction while filling out the survey. Also, being single, having mental illnesses such as depression and anxiety, dietary factors, level of physical activity, and owning smart devices could be other factors that may affect SMA and complicate its potential relationship with BMI. Unfortunately, we did not evaluate those factors in our study. Finally, the prevalence of SMA in the general population itself might be too high so it does not show a statistically important difference between obese and normal-weight individuals in the society. The latest research by Global WebIndex revealed that 57.6% of the world's population uses SM.[26]

Conclusion

Obesity is a major health concern worldwide and most importantly it is a modifiable one. The result of this study provides an insight into the unexplored relationship between SMA and BMI. There is no doubt that SMA is prevalent. Future studies should be conducted to investigate the effects of SMA, which is becoming a major concern for human health. More accurate results can be obtained if the sample size is increased and equal distribution of the groups can be ensured for comparative analyses.

Declarations

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Author contributions
Conceptualization, S.T., S.M. and C.A.; Methodology, S.T., S.M. and C.A.; Software, S.T. and C.A.; Validation, S.T. and C.A.; Formal Analysis, S.T. and C.A.; Investigation, S.T., A.Ö., Z.S.A.; Resources, S.T., S.M. and C.A.; Data Curation, S.T. and C.A.; Writing – Original Draft Preparation, S.T., A.Ö., Z.S.A. and C.A.; Writing – Review & Editing, S.T., A.Ö., Z.S.A. and C.A.; Visualization, S.T., A.Ö., Z.S.A. and C.A.; Supervision, C.A.; Project Administration, S.T. and C.A.; Funding Acquisition, S.T. and C.A.

Conflicts of interest
No conflict of interest was declared by the authors.

Data availability
The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics approval
This study was approved by the local ethics committee (Ethics Committee of Health Sciences University Diskapi Yildirim Beyazit Training and Research Hospital-Ankara date: 27.11.2017 decision number: 43/16).

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