Original Article

The Relationship between Internet Addiction and Obesity in Nursing Students

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Abstract

Background: The use of the internet is increasing rapidly worldwide.
Aim: This study was conducted to determine the relationship between Internet addiction and obesity in nursing students.
Methods: The study was carried out as a descriptive study at the faculty of nursing of a university in the east of Turkey. The research population consisted of the nursing students who were continuing their studies at the faculty of nursing. In the study, an attempt was made to reach the entire population without selecting a sample. Data were collected between September and December 2018, using a Personal Information Form and Young's Internet Addiction Test Short Form.
Results: In the study, the mean body mass index and Young's Internet Addiction Test Short Form scores of the students were 24.4±5.1 and 31.9±11.6, respectively. There was a significantly strong and positive correlation between the mean body mass index and Young's Internet Addiction Test Short Form scores of the students.
Conclusions: It was found that the nursing students' weights were normal, and they were addicted to the Internet at a moderate level. In the study, the levels of Internet addiction were found to increase as the students' body mass index levels increased. Educational programs can be organized to improve university students' awareness in this matter.

Keywords: Nursing students, internet addiction, obesity.

Introduction

About 54% of the world's population has access to the Internet (Poushter, 2016). Due to the rapidly increasing use of the Internet worldwide, addiction has been an increasingly worsening community health issue. The world-wide Internet addiction was 1.5% in 2000, whereas this rate is 6% today. It is known that young adults, such as university students, have a higher risk of developing Internet addiction (Cheng & Li, 2014). Internet addiction is an impulse control issue causing the use of the Internet to be uncontrollable, resulting in negative consequences on major areas of living (Young,

1998). It can cause high levels of anxiety, depression and aggressive behavior especially in adolescents (Dang et al., 2018; Pektas & Mayda, 2018). Certain issues, such as sleep problems, hygiene problems, decline in school achievement and shortened exercise times, have been found to be caused by Internet addiction (Bhushan, Piplani & Tekkalaki, 2018; Pawlikowski, Altstötter-Gleich & Brand, 2013). Internet addiction is more evident among university students who are being educated in fields that steadily develop and change, such as the healthcare sector. According to the results of a study on students carried out by Zhang et al., Internet addiction is seen at a rate of

30%, which is approximately 5 times as much as the addiction in general population (Zhang, Lim, Lee & Ho, 2018).An ever-increasing segment of the young population favors spending their time indoors and browse their computers rather than being physically active (Dang et al., 2018). Certain factors such as decreased physical activity, malnutrition and sleep problems may cause obesity. In industrialized countries, obesity is a serious risk factor for chronic diseases. Obesity, on the other hand, can also be seen as adaptation to less-demanding habits and, in particular, increased caloric intensity in the modern lifestyle that have emerged with the support of technology (Tremblay, Picard-Deland, Panahi & Marette, 2015). Based on a literature review, a small number of studies were found to investigate the relationship between Internet addiction and obesity (Pektas & Mayda, 2018; Bhushan, Piplani & Tekkalaki, 2018). Thus, this study was carried out to determine the effect of Internet addiction on obesity one of the most significant problems the modern era brought to our lives.

Methods

Design and Sample: The study was carried out as a descriptive study at the nursing faculty of a university in the east of Turkey. The research population consisted of 1296 nursing students who were continuing their studies at the faculty of nursing. In the study, an attempt was made to reach the entire population without selecting a sample, and the study was completed on 75% (962) of the population. A total of 200 students were excluded from the study because they did not attended classes during the time frame of the study, 85 were excluded as they refused to participate in the study, and 49 were excluded as their forms were incomplete.

Data Collection Instruments

*Personal Information Form***:** The Personal Information Form consisted of 8 questions that inquired the socio-demographic data and BMI values of the students.

Young's Internet Addiction Test Short Form (YIAT-SF): This scale developed by Young was transformed into a short form by Pawlikowski et al. (Young, 1998; Pawlikowski, Altstötter-Gleich & Brand, 2013). It was adapted to Turkish by

Kutlu et al. in 2016 (14). YIAT-SF is a five-point Likert type scale (where 1=Never, 5=Very frequent). High scores from the scale indicate that the level of Internet addiction is high. The scale's original internal consistency reliability coefficient is .85. The reliability coefficient of the scale was .94 in this study.

Ethical Dimension: Prior to the study, written permission was obtained from the Dean's Office of the Faculty of Nursing, and ethical approval was received from the Scientific Research and Publication Ethics Committee of Health Sciences at Inönü University (Decision No.: 2018/5-17).

Data Collection: Data of the study were collected between September and December 2018, using the face-to-face interviewing technique during breaks of the students by the researchers in lecture halls. The data were collected by the researchers using the Personal Information Form and the Young's Internet Addiction Test Short Form. Each interview lasted approximately 15 minutes.

Evaluation of Data: Descriptive statistics, independent samples t-tests, one-way ANOVAs, and correlations were used to evaluate the data. The results were evaluated at 95% confidence interval and $p<.05$ significance level.

Results

It was seen that the average age of the students participating in the study was 21.4±2.9 years; 50.8% of them were female; incomes of 50.3% of them were equal to their expenses; and 47.9% of them were moderately active during the day. While browsing the Internet, 26.2% of them did not consume anything whereas 25.1% of them often consumed something. The mean BMI score of the students was 24.4±5.1, and their mean YIAT-SF score was 31.9±11.6. In the study, a significant correlation was observed between the students' frequency of snacking while using the Internet and their mean YIAT-SF score ($p<.05$). As a result of the Bonferroni test, the difference was found to be due to the group that did not consume anything while using the Internet. There was a significantly strong and positive correlation between the mean BMI and YIAT-SF scores of the students in the study ($p<.001$). As the students' Internet addiction levels increased, their body mass indices also increased.

Table 1. Socio-demographic and Internet use characteristics of individuals

Individual Features	Number (N)	%	x̄±SS
Age	**962**		**21.4±2.9**
Gender	**962**		
Female	**489**	**50.8**	
Male	**473**	**49.2**	
Income status			
Income is less than expense	**348**	**36.2**	
Income is equal to expense	**484**	**50.3**	
Income is more than expense	**130**	**13.5**	
Daily internet usage time	**962**		**4.5±2.2**
Physically active during the day			
Less	**251**	**26.1**	
Medium	**461**	**47.9**	
Very	**250**	**26**	
Frequency of consuming something while using the Internet			
Never	**252**	**26.2**	
Rarely	**233**	**24.2**	
Sometimes	**236**	**24.5**	
Often	**241**	**25.1**	
BMI	**962**		**24.4±5.1**
YIAT-SF	**962**		**31.9±11.6**

Table 2. Comparison of mean BMI and YIAT-SF scores according to socio-demographic characteristics of individuals

	Individual Features	BMI	YIAT-SF
Age		r=-0.14	r=0.029
		p=0.675	p=0.377
Gender	Female	24.5±5.2	32.2±11.8
	Male	24.3±5	31.6±11.3
Statistical test and significance		t=0.673	t=0.74
		p=0.51	p=0.459
Income status	Income is less than expense	24.5±5.1	31.9±11.6
	Income is equal to expense	24.6±5.2	32.3±11.7
	Income is more than expense	23.9±5	30.4±10.9
Statistical test and significance		F=1.008	F=1.442
		p=0.365	p=0.237
Daily internet usage time		r=0.049	r=-0.027
		p=0.126	**p=0.038**
Physically active during the day	Less	24.4±5	32.4±11.5
	Medium	24.3±5.2	31.7±11.6
	Very	24.6±5.2	31.8±11.6
Statistical test and significance		F=0.261	F=0.261
		p=0.771	p=0.77
Frequency of consuming something while using the Internet	Never	24.1±5.1	30.8±11
	Rarely	24.8±5.3	33.3±11.9
	Sometimes	24.7±5.1	32.7±11.8
	Often	24.2±5	30.9±11.4
Statistical test and significance		F=1.239	F=2.809
		p=0.029	**p=0.039**

t= T test, F= One way anova, r= Correlation

Table 3. Examination of the relationship between the individuals' mean BMI and YIAT-SF scores

	YIAT-SF	Statistical test and significance
BMI	r=0.797	**p=0.000**

r= Correlation

Discussion

The rapid increase in obesity worldwide suggests that environmental factors can be effective. Increased use of technology can lead to decreased physical activity and to a more inactive life style (Eliacik et al., 2016).

In our study, there was no significant difference in Internet addiction based on gender. It is noteworthy that different findings are found in terms of gender when the literature is reviewed. Subrahmanyam and Lin (2007) and Kim and Kim (2002) have also found that there is no significant relationship between Internet addiction and gender (Subrahmanyam & Lin, 2007; Kim & Kim, 2002). However, there is also research in the literature that demonstrate the opposite of our findings. Willoughby, Kim et al. have stated in their study that Internet addiction is more common among males (Willoughby, 2008; Kim et al., 2006). Due to the fact that the ages of the entire sample were very close to each other, their needs and durations of Internet use may be considered to be similar.

Considering the relationship between the participants' monthly income and their Internet addiction in our study, no significant difference was found in addiction. A similar conclusion was reached in a research study carried out by Ergin et al., and no significant relationship was found between Internet addiction and socioeconomic level (Ergin, Uzun & Bozkurt, 2013). On the other hand, Müller et al. have obtained findings indicating that the level of Internet addiction increased as the income level decreased (Müller, Glaesmer, Brähler, Woelfling & Beutel, 2014) The fact that the sample of our study consisted only of university students and the majority of them had income equivalent to their expenses suggests that the students' income levels were close to each other in general.

In our study, there was a significant difference in the level of Internet addiction based on the duration of daily Internet use of the students. Similarly, there are studies in the literature showing that the level of Internet addiction increases with the increase in the duration of Internet use (Xu et al., 2012; Balta & Horzum, 2008). Risky Internet use and the risk of Internet addiction can also be thought to increase as the duration to stay online on the Internet increases.

In our study, it was found that there was no significant difference in Internet addiction based on the level of being physically active during the day. Turan found in their study although it was in a different field than our study that there was no significant difference in the risk of Internet addiction depending on the level of sporting (Turan, 2015). In our study, the physical activity levels were identified by the participants' own expressions. There was no objective assessment of physical activity levels. The participants' assessment of their activity levels may not be objective enough. Therefore, it may be considered that there was no significant difference in Internet addiction based on the physical activity level.

In our study, no significant difference was found in Internet addiction based on the frequency of food consumption while using the Internet. No study could be found in the literature that pointed directly to similar or contradictory findings. Today, mobile devices can be used to access the Internet even on the move throughout the day. During Internet use, individuals may need to be in constant interaction with the device through which they access the Internet. For this reason, they may not have time to consume food and beverages. Moreover, the lack of difference may be due to the characteristics of our sample group.

In our study, no significant difference was found in the students' BMI according to gender. In a number of studies in the literature, it has been found that there is no significant relationship between obesity and gender (Oztora et al., 2006; Kerner, Kurrant & Kalinski, 2004). Our sample may be careful not to gain weight to protect their body image because they might like to be physically attractive due to their age group.

In our study, no statistically significant difference was found in the participants' BMIs depending on their income levels. When studies in the literature are examined, many studies do not offer strong evidence that the income level increases BMI (Cutler, Glaeser & Shapiro, 2003; Loureiro & Nayga Jr, 2005). On the other hand, in the study of Davillas and Benzeval, a significant difference was found in BMI based on the income level (Davillas & Benzeval, 2016). Most university students eat their meals during the day in the university dining halls. And, they meet their nutritional needs other than the usual meals from canteens at faculties. Therefore, it can be thought that the nutritional habits were the same in general and that the income level did not cause a difference in BMI.

Our research revealed that there was no significant difference in BMI depending on the physical activity level and the duration of Internet use during the day. There are studies in the literature that examine the relationship between BMI, the excessive use of the Internet and the level of physical activity (Davillas & Benzeval, 2016; Moreno et al., 2013; Odacı & Celik, 2012). According to a study on university students by Moreno et al., there was no significant difference in BMI depending on the use of the Internet and the type of physical activity (Moreno et al., 2013). There are many factors that may cause a change in BMI. Although physical activity is one of these factors, it may not have been as effective to create a difference in our sample group. Our sample group's physical activity levels within the day may be considered to be very close to each other.

A significant difference in BMI was found in our study based on the frequency of consuming food while using the Internet. According to Odacı and Celik, individuals can often skip their meals while using the Internet, or they can often unwittingly consume unhealthy food as snacks, causing individuals to experience weight problems (Odacı & Celik, 2012). Moreover, there are also studies that demonstrate that individuals with Internet addiction eat unhealthy food during the day (Gur, Sisman, Sener & Cetindag, 2016). It can be thought that consuming food while using the Internet has become a habit, and individuals gravitate towards the consumption of high-calorie nutrients while using the Internet, which may cause weight change.

Based on our study, a significantly strong and positive correlation was found between BMI and the level of Internet addiction. As the students' Internet addiction levels increased, their BMIs also increased. According to the study of Sarı and Aydın, as the level of BMI increases, problematic Internet use also increases (Sari & Aydin, 2014). A study on Korean students revealed that the prevalence of being overweight and being obese increased among those who had used the Internet more than 2 hours a day (Baek & So, 2011). Technological possibilities that are growing make it much easier to access the Internet. It can be said that it is extremely easy to access the Internet today, which affects individuals' lifestyles and dietary habits. Internet addiction can be considered to habituate students to a more sedentary life, deteriorate their eating habits, and thus be associated with BMI.

Conclusion; In conclusion, it was found that the nursing students' weights were normal, and they were addicted to the Internet at a moderate level. In the study, the levels of Internet addiction were found to increase as the students' BMI levels increased.

With the rapid development of technology, it is natural to expect that Internet use will be widespread and will increase. However, the purpose and duration of use of the Internet is important in this respect. Educational programs can be organized to improve university students' awareness in this manner. The effects of Internet use on lifestyles and dietary habits should be examined not at the community level but at the individual level, and if necessary, consultation should be provided to each individual personally. Students should be supported to participate in social and sports activities of schools.

Limitations ; It is a limitation of the study that the researchers conducted the study at the faculty of nursing in only one province. Therefore, the results of the research can only be generalized to that group.

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