ORIGINAL ARTICLE

Evaluation of the Relationship Between Adolescents' Internet Addiction Risks and Prosocial Behaviors

Adölesanların İnternet Bağımlılığı Riskleri ile Prososyal Davranışlar Arasındaki İlişkinin Değerlendirilmesi

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Abstract

Introduction: Prosocial behavior is defined as behavior that is done voluntarily, aiming to benefit another person or group. Prosocial behavior appears in preschool, around age two, and increases in frequency and variety throughout life. While the internet can provide many positive prospects, exposure to negative behaviors on the internet may cause an individual to normalize them over time, which eventually could cause humans to lose certain senses. As a fast-growing addictive behavior, internet addiction (IA) can lead to poor social communication, loneliness, depression, etc. However, it should be remembered that many positive behaviors may be learned through the internet. The present study aimed to evaluate the relationship between IA and prosocial behavior in adolescents.

Materials and Methods: A cross-sectional study was conducted with healthy adolescents aged 10 to 18. The participants were asked to answer a questionnaire including socio-demographic information and two scales; i) Young's Internet Addiction Scale-Short Form (YIAS-SF); for evaluating IA, ii) Child Prosociality Scale (CPS); for evaluating the tendency to engage in prosocial behaviors. The scale scores were compared with each other through the socio-demographic features of the participants.

Results: The study sample consisted of 488 adolescents (292 females, 196 males) with a mean age of 13.75. The parameter that affected the YIAS-SF score most was found to be the adolescent's duration of daily internet use ($p<0.01$ and $\beta=0.396$), and it was determined that the parameter that affected the CPS score the most was school success ($\beta=-0.166$, $p<0.001$). A negative correlation was found between CPS and YIAS-SF ($p=0,001$, $r=-0,269$). Furthermore, there was a negative correlation between the adolescent's CPS score and the mother's daily internet use duration in comparison to the adolescent's and the father's ($p=0.344$ and $r=-0.043$).

Conclusion: Since there is an inverse relationship between the risk of IA and prosocial behaviors, prosocial behaviors should be motivated in adolescents at high risk of IA. To promote prosocial behaviors in adolescents, mothers should be informed that the duration of their own daily internet time has a more significant effect on the adolescent's prosocial behavior than the adolescent's daily internet use time.

Öz

Giriş: Prososyal davranış, başka bir kişi veya gruba fayda sağlamayı amaçlayan gönüllü olarak yapılan davranış olarak tanımlanır. Prososyal davranış okul öncesi dönemde, iki yaş civarında ortaya çıkar ve yaşam boyunca sıklığı ve çeşitliliği artar. İnternet, birçok olumlu katkı sağlasa da, kişinin internette maruz kaldığı olumsuz davranışlar zamanla bireylerin bunu normalleştirmesine ve sonucunda insanın bazı duyularını kaybetmesine neden olabilmektedir. Hızla gelişen bir bağımlılık davranışı olan internet bağımlılığı (İB), zayıf sosyal iletişim, yalnızlık, depresyon vb. durumlara yol açabilmektedir. Bununla birlikte birçok olumlu davranışın internet aracılığıyla öğrenilebileceği de unutulmamalıdır. Bu çalışma, adölesanlarda İB ile prososyal davranış arasındaki ilişkiyi değerlendirmeyi amaçladı.

Gereç ve Yöntem: On-on sekiz yaşları arasındaki sağlıklı adölesanlarda kesitsel bir çalışma yapılmıştır. Katılımcılardan sosyo-demografik özelliklerini içeren bir anketi ve iki ölçeği yanıtlamaları istenmiştir; i) Young İnternet Bağımlılığı Ölçeği-Kısa Formu (YİBÖ-KF); İB'yi değerlendirmek için, ii) Çocuk Prososyallik Ölçeği (ÇPÖ); prososyal davranışlarda bulunma eğilimini değerlendirmek için. Ölçek puanları, katılımcıların sosyo-demografik özelliklerine göre birbirleriyle karşılaştırıldı.

Bulgular: Araştırmanın örneklemini yaş ortalaması 13,75 olan 488 adölesan (292 kız, 196 erkek) oluşturmuştur. YİBÖ-KF puanını en çok etkileyen parametrenin adölesanın günlük internet kullanım süresi olduğu (p<0,01 ve β=0,396) ve ÇPÖ puanını en çok etkileyen parametrenin okul başarısı olduğu belirlenmiştir (β=-0,166, p<0,001). ÇPÖ ile YİBÖ-KF arasında negatif korelasyon bulundu (p=0,001, r=-0,269). Ayrıca adölesanın ÇPÖ puanı, adölesan ve babaya göre özellikle annenin günlük internet kullanım süresi ile negatif korelasyon göstermiştir (p=0,344 ve r=-0,043).

Sonuç: İB riski ile prososyal davranışlar arasında ters bir ilişki olduğu için, İB riski yüksek olan adölesanlarda prososyal davranışlar motive edilmelidir. Adölesanlarda prososyal davranışları artırmak için annelere kendi günlük internet sürelerinin adölesanın prososyal davranışları üzerindeki etkisinin adölesanın kendi günlük internet kullanım süresinden daha anlamlı bir etkisinin olduğu anlatılmalıdır.

Introduction

Prosocial behavior is defined as behavior that is done voluntarily, aiming to benefit another person or group (1). It can also be described as positive social behavior, including empathy and concern for others. Prosocial behavior appears in preschool, around age two, and increases in frequency and variety throughout life (2). Prosocial behavior is mediated by both situational (such as fear of being judged by others, pluralistic ignorance, and maximizing rewards and minimizing costs) and individual factors (such as the individual's cognitive capacities like intelligence and education level, family structure, cultural factors, religion, emotional arousal, wanting to have positive self-images or personal ideals, as well as help to fulfill their individual needs, etc.). Helping, cooperating, comforting, sharing, and donating are examples of prosocial behavior (3). Therefore, it is considered essential for social development and the harmonious functioning of society. Prosocial behavior has also been shown to have many benefits, such as helping experience a better mood by relieving the adverse emotional effects of stress and significantly impacting motivation for learning for the "helper" (4). Seeing others do good things encourages and inspires others to take action to help others (5). While the internet can provide many positive prospects, exposure to negative behaviors on the internet may cause an individual to normalize them over time, which eventually could cause humans to lose certain senses (6,7). As a fast-growing addictive behavior, internet addiction (IA) can lead to poor social communication, loneliness, depression, etc. (8). Besides, it should be remembered that many positive behaviors may be learned through the internet. The present study aimed to evaluate the relationship between IA and prosocial behavior in adolescents.

Materials and Methods

Subjects and Study Design

This cross-sectional study was conducted between June 2019 and March 2020 at Çanakkale Onsekiz Mart University Hospital. The study subjects were 488 healthy adolescents referred to the adolescent outpatient clinic selected with a continuous sampling method. The inclusion criteria were:

1. Healthy adolescents (aged between 10-18 years with ≥ Tanner 2 Stage),

2. Who applied for a routine checkup, and

3. Written informed consent to participate in the study.

The exclusion criteria were: 1) Presence of chronic conditions (e.g., high blood pressure, kidney disease, asthma, diabetes mellitus, obesity, neuropsychiatric

disorders). A total of 2503 adolescents applied to the hospital during the study period. Among these adolescents, 488 adolescents were included in the study. The chart below outlines the rationale for the adolescents who were excluded from the study.

2503 adolescents applied to the adolescent outpatient clinic during the study period,

↓

891 subjects were excluded because of the presence of acute illness at a level that cannot fill the questionnaires,

↓

695 subjects were excluded because of having a chronic disease,

↓

412 subjects did not want to participate in the study,

↓

17 subjects were excluded because they were in the prepubertal period.

↓

Finally, 488 adolescents were included in the study.

Socio-demographic Data Collection

A self-report questionnaire prepared by the researchers was used. The questions were divided into two subtitles in this socio-demographic data form.

a) Information about the adolescent; i) socio-demographics including age, the number of siblings, school achievement (good, average, low), and smoking status; ii) information about internet usage, including how long being an internet user, having own phone, and total daily internet usage duration (hour).

b) Information about the family; including the parents' age, the parent's education level (≤8 years or >8 years), the place of residence (urban/rural), socioeconomic status (good, average, low), and the daily internet usage duration (hour) of the parents.

Anthropometric Data

Anthropometric data were collected at the time of enrollment. A stadiometer, calibrated daily, was used to measure body weight and height for all patients (Seca 703, accurate to 100 g, Seca GmBH&Co Kg; Hamburg, Germany). The weighing was done with the children wearing only underwear and no external clothing. Height was measured by standard measurement in a standing position. Body mass index (BMI) was calculated based on the weight in kilograms

and height in meters according to the formula kg/m^2. Participants with BMI above the 95th percentile or a BMI standard deviation (SD) score above +2.0 SD were considered obese (9).

The Scales

The parents completed the scales in a separate room next to the adolescent outpatient clinic. Participants who filled out the scales incompletely were not included in the study.

Young's Internet Addiction Test-Short Form (YIAT-SF)

YIAT-SF consists of 12 items rated on a 5-point-Likert scale from 1(rarely) to 5 (always), with a total score between 20 and 100. The items comprise several facets of IA, such as loss of control, preoccupation, and psychological dependence. The whole questionnaire was translated into Turkish and validated by Kutlu et al. (10), Cronbach's alpha coefficient was found to be 0.86, and test-retest reliability was 0.86 in adolescents.

Child Prosociality Scale (CPS)-Mother Form

It is based on the Child Rating Questionnaire developed by Strayer (1985) and the Prosocial Behavior Questionnaire developed by Weir, Stevenson, and Graham (1980) and Bower (2012) edited. Turkish adaptation, validity, and reliability studies were carried out by Bağcı (2015). In the CPS scale, teachers and parents are asked to evaluate children according to the degree to which they have prosocial behavior skills. Because mothers are oftentimes the ones who take their children to the doctor in our country, the mother form of CPS was used in the present study. This Likert-type scale consists of 21 items and is rated the extent of prosocial behavior from 1 to 5 (never, rarely, sometimes, usually, and always). A high score on the scale indicates that prosocial behaviors are increased. Cronbach's alpha coefficient was found to be 0.86, and the reliability was found to be 0.91 for the mother form.

Ethics Statement

The present study was approved by the Local Ethics Committee of Çanakkale Onsekiz Mart University Faculty of Medicine (IRB no: KAEK-27/2019-E.1900116951, date: 30.01.2019) and conducted following the principles of the Declaration of Helsinki. Subjects were recruited for the study after

informed consent was obtained from both them and their parents.

Statistical Analysis

Data were evaluated using IBM SPSS (Statistical Packet for The Social Science) version 22. Number, percentage, mean, standard deviation, median, minimum, and maximum values were used to present descriptive data. P<0.05 was accepted for statistical significance. The conformity of the variables to the normal distribution was evaluated with the Kolmogorov-Smirnov test. Mann-Whitney U and Kruskal-Wallis test's were used to compare continuous variables. The Spearman Correlation test was used to assess the correlation between variables. The correlation coefficient was 0.00-0.24: weak correlation; 0.25-0.49: moderate correlation; 0.50-0.74: strong correlation; and 0.75-1.00: robust correlation.

Results

The study population comprised 488 healthy adolescents (59.8% females; Mage at T1=13.75, SDage=2.2). All the participants were attending middle school or high school. The socio-demographic data of the participants are summarized in Table 1.

The duration that the adolescent has been an internet user was 4.2±2.5 years. The time of daily internet usage of the adolescent, mother, and father was 2.8±1.9, 2.3±1.2, and 2.5±1.3 hours/day, respectively. The mean of the YIAT-SF score and the CPS score was 24.9±8.6 (min-max; 12.0-52.0) and 86.1±12.3 (min-max; 35.0-110.0), respectively. YIAS-SF score was higher in male subjects, and this difference was statistically significant (p=0.017). Comparing the participants' YIAS-SF scores according to the adolescence periods, the middle adolescence group had a statistically significant higher score (p=0.005). The CPS and YIAS-SF scores according to the socio-demographic characteristics of the participants are given in Table 2.

80% of the adolescents had mobile phones, and only 5 had no internet. There was no statistical difference in CPS scores between those with and without their phone (p=0.163). However, YIAS-SF scores were statistically significantly higher in adolescents with phones (p=0.024).

Table 1. Socio-demographic characteristics of the participitants	
	n (%)
Gender	
Female	292 (59.8)
Male	196 (40.2)
	Mean ± SD
Age (year)	13.75±2.2
	n (%)
BMI	
Underweight	30 (6)
Normal weight	341 (70)
Overweight	63 (13)
Obese	54 (11)
The adolescence period	
Early adolescence (10-13 years)	228 (46.7)
Middle adolescence (14-16 years)	197 (40.4)
Late adolescence (17-18 years)	63 (12.9)
Number of siblings	
1	97 (19.9)
2	248 (50.8)
3	110 (22.5)
4+	33 (6.8)
School achievement	
Good	304 (62.3)
Average	169 (34.6)
Low	15 (3.1)
Smoking status of adolescent	
Yes	56 (11.5)
No	432 (88.5)
Education of mother (year)	
≤8	275 (56.4)
>8	213 (43.6)
Education of father (year)	
≤8	207 (42.4)
>8	281 (57.6)
Region of residence	
Urban	430 (88.1)
Rural	58 (11.9)
Socio-economic status	
Low	59 (12.1)
Average	217 (44.5)
Good	212 (43.4)
	Mean ± SD
Mother's age	40.2±5.2
Father's age	44.1±5.9
BMI: Body mass index (kg/m2), SD: Standard deviation	

The adolescent's CPS score was observed to have a negative correlation, especially with the mother's daily internet use duration (p=0.344 and r=-0.043). On the other hand, YIAS-SF scores were positively correlated with the adolescents' daily internet usage duration rather than the parents'. Table 3 demonstrates the correlation analysis between the adolescents' scales' scores with both them and their parents' daily internet usage duration. Multiple regression analysis results of independent variables that were determined to be effective on the YIAS-SF and CPS scores of the adolescents are shown in Table 4. The parameter that affected the YIAS-SF score most was found to be the adolescent's duration of daily internet use (p<0.01 and

Table 2. CPS and YIAS-SF scores of the participants' according to the socio-demographic characteristics								
	CPS				YIAS-SF			
Gender	n	Mean	Median	p	n	Mean	Median	p
Female	292	86.6	87	0.407*	292	24.3	22	**0.017***
Male	196	85.2	86		196	25.8	25	
The adolescence period								
Early adolescence	228	87.2	88	0.077#	228	23.8	22	**0.005#**
Middle adolescence	197	85.3	85		197	26.4	25	
Late adolescence	63	84.2	83		63	24.2	23	
Number of siblings								
1	97	85.3	85	0.354*	97	24.7	24	0.899*
>1	391	86.3	87		391	25	24	
Mother's education (year)								
≤8	275	86.4	87	0.539*	275	25	24	0.993*
>8	213	85.6	86		213	24.8	24	
Father's education (year)								
≤8	207	86.1	87	0.766*	207	25.2	23	0.899*
>8	281	86.1	86		281	24.7	24	
Socio-economic status								
Low	59	83.4	84	0.203#	59	26.6	23	0.443#
Avarage	217	85.8	87		217	24.5	24	
Good	212	87.1	87		212	24.8	24	
Region of residence								
Rural	58	86.1	86.5	0.789*	58	24.3	22	0.326*
Urban	430	86.1	87		430	25.1	24	
School achievement								
Good	304	87.6	87	**0.009#**	304	23.6	23	**0.001#**
Average	169	84.1	84		169	27.1	25	
Low	15	77	83		15	26.4	29	
BMI								
Underweight	30	88.5	90	0.068#	30	25.8	23.5	**0.019#**
Normal	341	86.6	87		341	24.3	23	
Overweight	63	85.8	86		63	25.2	24	
Obese	54	81.7	81.5		54	28.1	28	

*Mann-Whitney U test, #Kruskal-Wallis, BMI: Body mass index, CPS: Child Prosocial Scale, YIAS-SF: Young Internet Addiction Scale-Short Form, significant contrasts are marked in bold

Table 3. Correlation between the duration of the daily internet usage of the adolescents, their parents and adolescents' CPS and YIAS-SF scores

Scale		The duration of the daily internet usage of; (hour/day)		
		Adolescent	Mother	Father
CPS score of the adolescent	r	-0.145	**-0.043**	**-0.025**
	p	**0.001***	0.344*	0.581*
YIAS-SF score of adolescent	r	**0.452**	0.128	0.116
	p	**0.001***	**0.005***	**0.01***

r: Correlation coefficient, *Spearman Correlation test, CPS: Child Prosocial Scale, YIAS-SF: Young Internet Addiction Scale-Short Form, significant contrasts are marked in bold

Table 4. Multiple regression analysis of the factors effecting the adolescents' YIAS-SF and CPS scores

The independent factors effecting the adolescents' YIAS-SF scores	B	β (Beta)	t	p
(Stable)	18.68	-	11.09	<0.001
Gender	1.34	0.076	1.82	0.068
Adolescent's phone ownership status	-0.617	0.029	-0.624	0.533
BMI	0.877	0.075	1.78	0.075
The adolescence period	-1.31	-0.105	-1.91	0.056
School achievement	1.97	**0.126**	2.98	**0.003**
The duration of the daily internet usage of;				
Adolescent	0.029	**0.396**	8.44	**<0.001**
Mother	-0.161	-0.022	-0.465	0.642
Father	-0.084	-0.13	-0.279	0.781
	R=0.44	R2=0.19	F=13.048	p<0.001
The independent factors effecting the adolescents' CPS scores				
(Stable)	89.75	-	89.19	<0.001
School achievement	-3.724	**-0.166**	-3.70	**<0.001**
The duration of the daily internet usage of the adolescent;	-0.12	**-0.119**	-2.65	**0.008**
	R=0.21	R2=0.047	F=12.061	p<0.001

YIAS-SF: Young Internet Addiction Scale-Short Form, CPS: Child Prosocial Scale, B: Regression coefficient, F: Variance analysis, B (Standardized Beta): Partial regression coefficient, t: Significance test for regression coefficients, R: Relationship level; R^2: Determining coefficient, BMI: Body mass index, significant contrasts are marked in bold

β=0.396), and it was determined that the parameter that the most affected CPS score was school success (β=-0.166, p<0.001).

11.5% of the adolescents (n=56, F/M: 21/35) were smokers. Between smokers and non-smokers, CPS scores were slightly higher in non-smokers, but no significant difference was detected (p=0.108). Although the YIAS-SF score was found to be higher in smokers, this difference was not statistically significant (p=0.063). The mean time of playing virtual games in adolescents was 1.7±1.2 hours per day. There was a weak negative and a weak positive correlation between the adolescents' daily playing time of virtual games and the CPS score and YIAS-SF score, respectively (p=0.062, r=-0.084 and p=0.001, r=0.194).

Discussion

The present study found a significant negative correlation between adolescents' prosocial behaviors and IA scores. Loneliness is found to be more common in adolescents with IA (11). Consequently, this condition may disrupt the development of prosocial behaviors. On the other hand, contrary to our study, Jeon et al. (12) found a positive correlation between empathy ability, a sub-dimension of prosocial behavior,

and IA. It should be noticed that the internet is also a socialization tool, and prosocial behaviors can be developed through it. Consistent with many previous studies, the present study found that the IA score was higher in males than females (13-18). Gender-related differences exist in most addictive behaviors (19-20). In this direction, questioning the use of cigarettes in the study, we found that the smoking rate was higher among males. Therewithal, it was observed that CPS and YIAS-SF scores were negatively affected by smoking. On the other hand, males use the internet differently from females (21). Internet usage purposes were not detailed in the current study. However, the habit of virtual gaming was questioned, and the average daily playing time of virtual games was an unexpected finding. Furthermore, it was observed that playing virtual games had a negative effect on both CPS and YIAS-SF scores. It has been determined that virtual games have an important place in adolescents' internet use. These games cause behavioral problems, deterioration in anger control, difficulties adapting to social life, and IA (22). The Internet has become an affluent area in terms of game diversity. The effects of these games on the individual may vary depending on the type of game played (23). The fact that we have yet to question the kind of virtual game played may make the comments on this subject incomplete. On the other hand, the CPS score was slightly higher in female subjects compared to males. Females react more than males to social and emotional stimuli in many contexts (24). Males can more easily isolate themselves from social dilemmas' social and emotional aspects more easily, which may contribute to the greater IA risk in men (25). The current study found that middle adolescence has a higher risk for IA. While some studies do not find a relationship between IA and age, other studies have shown that the risk of IA increases with age (26-28). In general, the most turbulent period of adolescence is the middle adolescence period. In this direction, the result of our study may be explained by the adolescents' efforts to become individuals, their intense curiosity, and their desire to experience new and different things. Therefore, minding parents' internet use during this period may be necessary to prevent and stop emerging IA. On the other hand, while parents' daily internet use was not found to be effective in YIAS-SF scores in the study, it was observed that the mother's everyday internet use had

a negative effect on the adolescent CPS scores, which may indicate that mothers must be good role models in restricting internet use, especially for the positive development of their adolescent's prosocial behaviors. This will increase the duration of social communication with the adolescent, and it should be remembered that the first social interaction and learning of prosocial behaviors start in the family. In the study, IA scores were higher in adolescents whose BMI was outside the normal ranges, including underweight. It was seen that excess weight had a more negative effect on the scores compared to low weight. While some studies in the literature have found a significant relationship between IA and obesity, some studies have not found a relationship with obesity (29-34). It is difficult to establish a cause-effect relationship, as there is a chicken-and-egg problem in this regard. We believe that the essential factors at play in this situation are participants' neglect of physical activity, consuming unhealthy and unregulated amounts of food, and spending excessive amounts of time on the internet. Increasing the number of studies on this subject may be enlightening in terms of observing the cause- effect relationship. In addition, obese individuals desire less physical activity in their leisure time, so their internet usage may increase.

While the adolescents' daily internet use had the most negative impact on YIAT-SF scores, low school success was the second most influential factor in the study. For CPS scores, there was a change of place in this ranking. Adolescents with good school performance are expected to be more interested in school. The results of studies related to school success and IA in the literature are contradictory (35-39). Its inclusion may explain this in every aspect of our lives, including schools. A probable reason for the current study's result regarding school achievement and the scale scores may be the low number of participants with low school success and the lack of families' honesty while answering the survey question. On the other hand, the fact that we did not question the internet usage purposes of the participants in the study limits our comments on this subject. Adolescents with mobile phones had significantly higher YIAS-SF scores than those who did not have a mobile phone. Although there are few studies on this subject, there are different results. While having a mobile phone is an essential factor in addiction in one study (40), another study did not find

any such relationship (39). IA is higher in individuals with self-phones because they can easily access the internet whenever and wherever they want and can be controlled with difficulty. It is widely acknowledged that families acquire mobile phones with the primary intention of facilitating communication with their children. However, we think that phones are often misused for the wrong purposes. Restricting mobile internet access and determining daily mobile data quota can solve this problem. Adolescents who think the internet is confidential and unlimited should be reminded that everything is recorded and tracked to reduce unnecessary internet usage.

Study Limitations

The results should be interpreted in the context of several limitations, including a relatively small sample size with some conditions which could contribute to the study but were not evaluated. First, parent-report scales may be sensitive to socially desirable responses. The demographic form should have included questions about the purposes of internet use, which can be considered a significant limitation because internet usage for positive reasons, such as studying and learning, should be separated from playing games and spending time on social media. Another limitation of the study is that IA is still not classified as a disease with clear diagnostic criteria. Using only one scale to diagnose it can be a limitation.

Conclusion

The present study found that the most crucial factor determining IA for adolescents is the duration of the adolescent's daily internet time. The most critical factor affecting CPS is school achievement. The course of daily internet time of the mother was more effective on the CPS scores than the adolescent'. A significant negative correlation was detected between the adolescents' prosocial behaviors and IA scores. While correlation does not imply causation; these findings suggest that (i) the duration of adolescents' daily internet time is the most significant risk for IA, ii) prosocial behaviors should be motivated in adolescents at high risk of IA, iii) mothers should support their children's prosocial behavior development by limiting their daily internet use and having more social contact with them, iv) as good school performance seems to

be both preventive for IA and is associated with more prosocial behaviors adolescents should be supported in this sense.

Ethics

References

1. Çetin BB, Samur AÖ. The Examination of the Relationship Between Prosocial Behaviors of The Children Between 60 and 72 Months Old and of Their Parents. EUJEF 2018;20:1-17.

2. Hastings PD, Zahn-Waxler C, Robinson J, Usher B, Bridges D. The development of concern for others in children with behavior problems. Dev Psychol 2000;36:531-46.

3. Ding W, Shao Y, Sun B, Xie R, Li W, Wang X. How Can Prosocial Behavior Be Motivated? The Different Roles of Moral Judgment, Moral Elevation, and Moral Identity Among the Young Chinese. Front Psychol 2018;9:814.

4. Raposa EB, Laws HB, Ansell EB. Prosocial Behavior Mitigates the Negative Effects of Stress in Everyday Life. Clin Psychol Sci 2016;4:691-8.

5. Tsvetkova M, Macy MW. The social contagion of generosity. PLoS One 2014;9:e87275.

6. Bradley N, Poppen W. Assistive technology, computers and Internet may decrease sense of isolation for homebound elderly and disabled persons. Technol Disabil 2003;15:19-25.

7. Firth J, Torous J, Stubbs B, Firth JA, Steiner GZ, Smith L, et al. The "online brain": how the Internet may be changing our cognition. World Psychiatry 2019;18:119-29.

8. Subrahmanyam K, Lin G. Adolescents on the net: Internet use and well-being. Adolescence 2007;42:659-77.

9. Ozturk A, Mazicioglu MM, Hatipoglu N, Budak N, Keskin G, Yazlak Z, et al. Reference body mass index curves for Turkish children 6 to 18 years of age. J Pediatr Endocrinol Metab 2008;21:827-36.

10. Kutlu M, Savci M, Demir Y, Aysan F. Turkish adaptation of Young's Internet Addiction Test-Short Form:a reliability and validity study on university students and adolescents. Anatolian Journal of Psychiatry 2016;17:69-76.

11. Van den Eijnden RJ, Meerkerk GJ, Vermulst AA, Spijkerman R, Engels RC. Online communication, compulsive internet use, and psychosocial well-being among adolescents: A longitudinal study. Developmental Psychology 2008;44:655-65.

12. Jeon HJ, Kim S, Chon WH, Ha JH. Is Internet overuse associated with impaired empathic ability in Korean college students? Medicine (Baltimore) 2018;97:e12493.

13. Chou C, Condron L, Belland JC. A review of the research on Internet addiction. Educ Psychol Rev 2005;17:363-88.

14. Morahan-Martin J, Schumacher P. Incidence and correlates of pathological internet use among college students. Comput Human Behav 2000;16:13-29.

15. Şahan M, Çapan BE. The Role of Interpersonal Cognitive Distortions and Social Anxiety in Adolescents Problematic Internet Use. Ege Journal of Education 2017;18:887-913.

16. Sasmaz T, Oner S, Kurt AÖ, Yapici G, Yazici AE, Bugdayci R, et al. Prevalence and risk factors of Internet addiction in high school students. Eur J Public Health 2014;24:15-20.

17. Tang J, Yu Y, Du Y, Ma Y, Zhang D, Wang J. Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. Addict Behav 2014;39:744-7.

18. Lai CM, Mak KK, Watanabe H, Ang RP, Pang JS, Ho RC. Psychometric properties of the internet addiction test in Chinese adolescents. J Pediatr Psychol 2013;38:794-807.

19. Becker JB, McClellan ML, Reed BG. Sex differences, gender and addiction. J Neurosci Res 2017;95:136-47.

20. Fonseca F, Robles-Martínez M, Tirado-Muñoz J, Alías-Ferri M, Mestre-Pintó JI, Coratu AM, et al. A Gender Perspective of Addictive Disorders. Curr Addict Rep 2021;8:89-99.

21. Sun B, Mao H, Yin C. Male and Female Users' Differences in Online Technology Community Based on Text Mining. Front Psychol 2020;11:806.

22. Yagci A, Yalaki Z. The Relationship Between The Perceived Stress Level of Online Game Addiction in Adolescents and Perceived Social Support. Journal of Child 2021;21:166-74.

23. Quwaider M, Alabed A, Duwairi R. The Impact of Video Games on the Players Behaviors: A Survey. Procedia Computer Science 2019;151:575-82.

24. McManis MH, Bradley MM, Berg WK, Cuthbert BN, Lang PJ. Emotional reactions in children: verbal, physiological, and behavioral responses to affective pictures. Psychophysiology 2001;38:222-31.

25. McRae K, Ochsner KN, Mauss IB, Gabrieli JJD, Gross JJ. Gender Differences in Emotion Regulation: An fMRI Study of Cognitive Reappraisal. Group Process Intergroup Relat 2008;11:143-62.

26. Çam HH, Nur N. A Study on the prevalence of Internet addiction and its association with psychopathological symptoms and obesity in adolescents. TAF Prev Med Bull 2015;14:181-8.

27. Bozkurt H, Şahin S, Zoroğlu S. Internet Addiction: A Current Review. J Contemp Med 2016;6:235-47.

28. Kim Y, Park JY, Kim SB, Jung IK, Lim YS, Kim JH. The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. Nutr Res Pract 2010;4:51-7.

29. Kim JH, Lau CH, Cheuk KK, Kan P, Hui HL, Griffiths SM. Brief report: Predictors of heavy Internet use and associations with health-promoting and health risk behaviors among Hong Kong university students. J Adolesc 2010;33:215-20.

30. Rodgers RF, Melioli T, Laconi S, Bui E, Chabrol H. Internet addiction symptoms, disordered eating, and body image avoidance. Cyberpsychol Behav Soc Netw 2013;16:56-60.

31. Canan F, Yildirim O, Ustunel TY, Sinani G, Kaleli AH, Gunes C, et al. The relationship between internet addiction and body mass index in Turkish adolescents. Cyberpsychol Behav Soc Netw 2014;17:40-5.

32. Do YK, Shin E, Bautista MA, Foo K. The associations between self-reported sleep duration and adolescent health outcomes: what is the role of time spent on Internet use? Sleep Med 2013;14:195-200.

33. Seyrek S, Cop E, Sinir H, Ugurlu M, Şenel S. Factors associated with Internet addiction: Cross-sectional study of Turkish adolescents. Pediatr Int 2017;59:218-22.

34. Tsitsika A, Critselis E, Kormas G, Filippopoulou A, Tounissidou D, Freskou A, et al. Internet use and misuse: a multivariate regression analysis of the predictive factors of internet use among Greek adolescents. Eur J Pediatr 2009;168:655-65.

35. Kim K, Ryu E, Chon MY, Yeun EJ, Choi SY, Seo JS, et al. Internet addiction in Korean adolescents and its relation to depression and suicidal ideation: a questionnaire survey. Int J Nurs Stud 2006;43:185-92.

36. Yang SC, Tung CJ. Comparison of Internet addicts and non-addicts in Taiwanese high school. Comput Human Behav 2007;23:79-96.

37. Esen EM, Siyez DM. An investigation of psycho-socaial variables in predicting internet addiction amon adolescents. Turkish Psychological Counseling and Guidance Journal 2011;4:127-36.

38. Stavropoulos V, Alexandraki K, Motti-Stefanidi F. Recognizing internet addiction: prevalence and relationship to academic achievement in adolescents enrolled in urban and rural Greek high schools. J Adolesc 2013;36:565-76.

39. Sulak Ş. Determining internet addiction level of faculty of education students (Yüksek Lisans Tezi). Kahramanmaraş: Kahramanmaraş Sütçü İmam Üniversitesi; 2015.

40. Balta Çakır Ö, Horzum MB. The Factors that Affect Internet Addiction of Students in a Web Based Learning Environment. JFES 2008;41:187-205.