Psychosocial Factors That Predict Internet Addiction

İnternet Bağımlılığını Yordayan Psikososyal Faktörlerin İncelenmesi

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ABSTRACT

This study aimed to determine the predictive power of university students' gender, sensation seeking, social support, loneliness levels and personality traits in predicting internet addiction by using the relational survey model. The study group of this research was composed of a total of 873 university students (635 females and 238 males) attending the different departments of the Faculty of Education, the Faculty of Arts and Sciences, the School of Health and the School of Physical Therapy and Rehabilitation at a state university during the fall semester of the 2015-2016 academic year. The data were collected with the help of Internet Addiction Test, Adjective Based Personality Test, Arnett Inventory of Sensation Seeking, UCLA Loneliness Scale, Multidimensional Scale of Perceived Social Support and Personal Information Form. Pearson moments product correlation coefficient and hierarchical regression analysis were used in data analysis. Based on research results, neuroticism was found to be the most significant predictor of internet addiction followed by loneliness, gender, extraversion, openness to experience, sensation seeking, conscientiousness, agreeableness and social support variables followed this variable. The article includes the discussion of the results based on the relevant literature and suggestions in regards to the theory and future research.

ÖZET

Bu araştırmanın temel amacı üniversite öğrencilerinin cinsiyetlerinin, heyecan arama, sosyal destek, yalnızlık düzeyleri ve kişilik özelliklerinin internet bağımlılığını yormada güçlerini belirlemektir. Araştırmada ilişkisel araştırma modeli kullanılmıştır. Araştırmanın çalışma grubunu, 2015-2016 akademik yılı güz döneminde, bir devlet üniversitesinde Eğitim Fakültesi, Fen-Edebiyat Fakültesi, Sağlık Yüksekokulu ve Fizik Tedavi ve Rehabilitasyon Yüksekokulu'nun farklı bölümlerinde öğrenim gören 635'i kadın ve 238'i erkek olmak üzere toplam 873 öğrenci oluşturmaktadır. Verilerin toplanmasında İnternet Bağımlılığı Ölçeği, Sıfatlara Dayalı Kişilik Testi, Arnett Heyecan Arama Ölçeği, Çok Boyutlu Algılanan Sosyal Destek Ölçeği, UCLA Yalnızlık Ölçeği ve Kişisel Bilgi Formu kullanılmıştır. Veri analizinde pearson momentler çarpım korelasyon katsayısı ve hiyerarşik regresyon analizi kullanılmıştır. Araştırma sonuçları internet bağımlılığının en önemli yordayıcısının duygusal dengesizlik olduğunu; bu değişkeni yalnızlık, cinsiyet, dışa dönüklük, deneyime açıklık, heyecan arama, sorumluluk, yumuşak başlılık ve sosyal destek değişkenlerinin izlediği görülmüştür. Araştırma sonuçları ilgili literatüre dayanılarak tartışılmıştır. Teoriye ve gelecek araştırmalara yönelik öneriler sunulmuştur.

INTRODUCTION

In the early 1990s, the main internet users were a small group of researchers and academics in the field of technology (Schoenfeld, 2011). However, based on the Household Use of Information Technologies Survey conducted on the 16-74 age group in Turkey, Turkish Statistical Institute (TÜİK, 2019) found that individuals in the age group of 16-24 have the highest level of computer and internet use today. The results of the same research pointed to the fact that internet use becomes more common as the level of education increases. The fact that internet use is becoming more widespread at a rapid pace and that a wide age group uses the internet in an uncontrolled and prolonged manner can result in problematic internet use. In time, problematic internet use may inevitably present itself in different forms such as internet addiction which will require professional support to cope with.

Internet addiction is an individual's inability to resist the urge to use the internet excessively, feelings of extreme anxiety at times when internet is not available, the disregard for and derogatory attitudes towards the time spent away from the internet and the negative impact experienced by the individual in family, work and social life as a result of excessive internet use (Young, 2011). The symptoms of internet addiction includes individuals' disregard for the time spent without the internet, neglecting family and responsibilities, feelings of tension when internet is not available and instances where academic and personal life is harmed a (Beard & Wolf, 2001). In addition, other sign manifest themselves in internet addicts such as making changes in their lives to spend more time on the internet, sleep disorders, inability to enjoy the time spent without using the internet and decreased physical activities (Young, 1999a, p.21).

There are various factors that affect internet addiction directly and indirectly. Human beings are social entities and the need for socialization is active in all periods of life. Individuals who believe that establishing social relationships is difficult or individuals who experience problems in this regard think that the internet is more comfortable and easy to form social relationships (Grohol, 1999).

These individuals try to benefit from all the opportunities offered by the internet for socialization, but, they gradually alienate themselves from the society and from their actual social relationships (Karagülle & Çaycı, 2014). In addition, psychological problems can also lead some people to internet addiction. For example, it is reported that individuals who experience depression and stress have higher ratios of internet use compared to before (Chou, et. al., 2015). Internet accessibility, unlimited availability and the lack of any control (family, environment or teachers) may also affect internet addiction significantly (Young, 2004). Other factors that trigger internet addiction include the use of social media by others in the community and exposure to life styles that present the internet as extremely popular are also (Lin & Tsai, 2002).

Based on the reasons cited above, some changes are observed in the lives of internet addicts. Internet addiction directly affects the individual's academic, professional, physical, relational and financial lives (Young, 1998b). For example, when adults are addicted to the Internet, all the areas in their lives are adversely affected because now they cannot devote time to their work, cannot take care of their families adequately and do not pay attention to their physical health. Similarly, the academic life and future of university students will be negatively affected because they will be spending most of their time on the internet rather than engaging in academic work (Chen & Peng, 2008; Kubey, Lavin, & Barrows, 2001). Furthermore, the social support required for the development of university students and the necessary interaction with their community is now replaced by virtual friendships, which may negatively affect the

ability of university students to establish and maintain interpersonal relationships (Karayağız Muslu & Boızık, 2009; Tsai et al., 2009).

The effects of internet addiction on individuals can be listed in general as follows (Young, 2004): (a) deterioration or break ups in relationships with both family and friends, (b) unfavorable experiences in school performance and academic achievement, (c) physical health problems due to poor nutrition habits, inactivity, etc., (d) possibility of mental breakdown and loss of tolerance, (e) psychological problems such as increased levels of depression, (f) problems in the socialization process, (g) insomnia or irregular sleep habits, (h) the unwillingness towards other activities outside the realm of internet.

In general, in terms of gender, addiction is reported to be more prevalent among males and males are more prone to addiction both abroad and in our country (Brady & Randall, 1999; Compton, et. al., 2000; İnce, Doğruer, & Türkçapar, 2002; Nelson-Zlupko, Kauffman, & Dore, 1995; Ögel, 2005; Ögel, Tamar, Evren, & Çakmak, 2000). Similarly, internet addiction is also found to be more common among males compared to females and males are more prone to internet addiction (Büyükşahin Çevik & Çelikkaleli, 2010; Demirer, Bozdoğan, & Şahin, 2013; Liang, et. al., 2016; Morahan-Martin & Schumacher, 2003; Müller , Dreier, Beutel, Duven, et. al., 2016). The findings of Lin and Tsai's (2002) research demonstrated that internet addicts spent more time online compared to people with no internet addiction. In addition, it was found that internet addiction had more negative effects on individuals' daily tasks, school performance and parental relationships that internet addicts displayed more sensation seeking behaviors. In their study, Mehroof and Griffiths (2010) identified significant relationships between online game addiction and sensation seeking behaviors of university students. Lavin, Marvin, McLarney, Nola, and Scott (1999) investigated the relationships between teenagers' sensation seeking behaviors and internet addiction, periods of internet use, usage preferences and attitudes towards the internet. Contrary to previous studies, the results of this study demonstrated that individuals addicted to internet displayed less sensation seeking compared to non-addicted individuals.

The model presented by Young (1999b) about internet addiction suggests that in the initial phase of internet addiction, the dominant thought in individuals is that no one can track them and therefore, this belief creates an environment suitable for the individuals to take risks and engage in experiences that they would not normally attempt outside the internet. The third factor of the four-factor internet use model defined by Pratarelli et. al. (1999) includes the social relationship and pleasure principle. In this factor which defines sexual pleasure, the researcher emphasizes that individuals satisfy their sexual desires through internet use. Therefore, as emphasized in the models of Young (1999b) and Pratarelli et. al. (1999), sensation seeking may be regarded as an important variable which affects internet addiction.

Wang et. al. (2015) investigated the relationships between teenagers' personality traits and their internet addiction and online activities. The results of the study showed significant relationships between internet addiction and high neurotic traits and less responsible traits. The study which examined the relationships between game addiction and personality traits identified significant relationships between game addiction and low level of openness to experience. In addition to these findings, significant relationships were found between social network addiction and neuroticism and extroversion. Kuss, Shorte, Van Rooij, Mheen and Griffiths, (2014) examined the relationship between the personality traits of university students and internet addiction components. Significant relationships were found between internet addiction and low compatibility and high neurotic personality traits. Yan et. al. (2014) investigated the relationship between university students' internet addiction and the stressful life events they experienced,

their personality traits and perceived family support. It was reported that those with addictive characteristics had low family support, lower extraversion levels, higher neuroticism and psychotism and experienced more stressful life events. The study emphasized the role of personality traits and life stress of university students' on their interactions and internet addiction. Davis'in (2001) model demonstrated that individuals with negative thoughts and some psychopathological disorders such as depression and anxiety were at risk in terms of internet addiction. Overall, based on the results of the studies summarized above examining the relationship between personality traits and internet addiction, it can be argued that individuals with high levels of openness to experience, extroversion, conscientiousness and aggreeableness have low internet addiction levels while individuals with high neuroticism levels have higher internet addiction levels.

Yao and Zhong (2014) examined the causal priority in the observed relationships between university students' internet addiction and other psychological problems. The results showed that excessive and unhealthy internet use could increase feelings of loneliness over time. Although depression had a moderate and positive bivariate relationship with internet addiction, such a relationship was not evident in the cross-delay analyzes. This study also concluded that online social contact with friends and family was not an effective alternative to offline social interactions in reducing feelings of loneliness. Moreover, although it was determined that increases in face-to-face meetings could help reduce internet addiction symptoms, this effect could also be due to increased online social relationships as a result of excessive internet use. Taken as a whole, findings from the study demonstrated a disquieting vicious circle between loneliness and internet addiction. Özdemir, Kuzucu, and Ak (2014) investigated the relationship between internet addiction and depression, loneliness, and low self-control levels of university students. It was reported that loneliness was related to the internet and had a direct effect. Low self-control was found to be associated with internet addiction. Loneliness and depression were found to influence internet addiction through low self-control. Pontes, Griffiths, and Patrao (2014) conducted a study to determine the extent of the problems caused by internet addiction in teenagers. They identified relationships between internet addiction and loneliness, social loneliness and classroom behaviors.

Wang and Wang (2013) investigated the relationship between perceived social support from social encounters and internet addiction both online and offline. Research results revealed that social support was positively associated with social interactions in both online and offline contexts. In addition, it was determined that while online social support was positively associated with internet addiction, offline social support and internet addiction correlated negatively. This finding has important clues not only to grasp the cause of internet addiction, but also to comprehend the decreased internet addiction due to the relationships between social support and social interactions. Fengqiang, Jie, Yueqiang and Lei (2016) investigated the relationships among university students' internet addiction, life events, social support and aggression levels. While aggression was positively associated with internet addiction and life events, it had a negative correlation with social support. In addition, significant relationships were identified among perceived social support, sense of social emotional independence and internet addiction.

In the model explaining the development of pathological internet use, Davis (2001) concluded that loneliness and lack of social support were important variables that explained internet addiction. In their internet addiction models, Suler (1999) and Pratarelli et. al. (1999) argued that social relationships and the need for interpersonal relationships had a significant effect on internet addiction. Hence, as stated above, the effect of social support, loneliness, social relations and interpersonal relationships on internet

addiction were specifically emphasized in Davis's (2001) pathological internet use model, Suler's (1999) healthy and pathological internet use model and Pratarelli et. al.'s (1999) four-factor internet use model. In summary, as emphasized in the studies and the models cited above, it can be argued that increased loneliness has an important role in the increase of internet addiction, and similarly, increases in social support and positive social and interpersonal relationships have an important role in the decrease of internet addiction.

The studies cited in this paper on internet addiction conducted both abroad and in our country demonstrated that internet addiction was initially more common among adults (Griffiths, 1996; Morahan-Martin & Schumacher, 2003). However, internet addiction is increasingly becoming more common among university students. It can be argued that university students are now an important risk group for internet addiction (Pawlowska et al., 2015). Hence, this study aimed to examine the relationships between university students' internet addiction and sensation seeking, loneliness, social support, personality traits and gender.

The Purpose of the Study

This study aimed to determine the predictive power of university students' gender, sensation seeking, social support, loneliness levels and personality traits in predicting internet addiction. In line with this purpose, the study sought answers to the following sub-goals:

• What is the relationship between university students' internet addiction levels and their sensation seeking, social support, loneliness and personality traits?
• Do university students' gender, sensation seeking, social support, loneliness and personality traits predict internet addiction?

METHOD

Research Model

Relational survey model was used in this research which investigated the relationship between university students' internet addiction and their gender, sensation seeking, social support, loneliness and personality traits. Relational survey models examine relationships between variables in an already existing situation without the intervention of the researcher (Fraenkel & Wallen, 2006).

Study Group

The study group was composed of a total of 873 university students (635 females and 238 males) attending the different departments of the Faculty of Education, the Faculty of Arts and Sciences, the School of Health and the School of Physical Therapy and Rehabilitation at a state university during the fall semester of the 2015-2016 academic year. Table 1 presents the demographic information about the study group.

Table 1 demonstrates that 635 of the participating university students were females while 238 were males. Based on age, 61 of these university students were 18 years old, 180 were 19 years old, 247 were 20 years old, 186 were 21 years old, 114 were 22 years old and 85 were 23 and older. In addition, 450 of these university students attended the Faculty of Education, 159 were in the Faculty of Arts and Sciences, 135 studied the School of Health and 129 attended the School of Physical Therapy and Rehabilitation.

Table 1. Demographic information about the study group

Variable	Category	n	%
Gender	Female	635	72.7
	Male	238	27.3
Age	18	61	7.0
	19	180	20.6
	20	247	28.3
	21	186	21.3
	22	114	13.1
	23 and older	85	9.7
Attending	Faculty of Education	450	51.1
	Faculty of Arts and Sciences	159	18.2
	School of Health	135	15.5
	School of Physical Therapy and Rehabilitation	129	14.8
Total		873	

Ethical Statement

The study was carried out within the framework of the Helsinki Declaration and all participants whose informed consents were obtained took part in this study as volunteers. Required permits were obtained to use the scales in this study. The participants were informed of the goals of the project and they were told that their identities would be kept confidential.

Data Collection Tools

Internet Addiction Test (Young, 1996; Bayraktar, 2001), Adjectives-Based Personality Test (Bacanlı, İlhan, & Aslan, 2009), Arnett Inventory of Sensation Seeking (Arnett 1994; Sümer, 2002), Multidimensional *Scale* of Perceived Social Support (Eker, Arkar, & Yaldız, 2001), UCLA Loneliness Scale (Demir, 1990) and Personal Information Form were used in this study as data collection tools.

Internet Addiction Test. "Internet Addiction Test", which was developed by Young (1996) and adapted to Turkish by Bayraktar (2001), was used to determine university students' internet addiction levels. The scale consists of 20 6-point Likert type items. The test provides scores between 0 and 120. According to the scores obtained from the test; those who receive a score of 80 and over are classified as internet addicts, those who receive a score between 50-79 as individuals showing partial symptoms and those who receive a score less than 50 as individuals not showing symptoms. Cronbach alpha value of the test was identified to be.91 in the reliability studies. Cronbach alpha value was found to br .90 in this study.

Adjective Based Personality Test (APBT). "Adjective Based *Personality Test*", developed by Bacanlı et. al. (2009), was used in this study to determine the five-factor personality trait scores of university students (neuroticism, extroversion, openness to experience, agreeableness and conscientiousness). ABPT consists of 40 items of adjective pairs based on the personality concept proposed by the Five Factor Personality Theory. ABPT, which consists of 5 sub-dimensions as neuroticism, extraversion, openness to experience, aggregation and conscientiousness, is rated on a 7-point Likert type scale. Principal Components Factor Analysis was performed on the data obtained from 285 participants to test the construct validity of the ABPT. The analysis results showed that these five factors explained 52.63% of the variance of ABPT. Based on the implementations conducted within the scope of external validity, it was seen that personality dimensions were significantly related to the scales used. The reliability studies provided internal consistency coefficients ranging from .73 to .89. In this study, the Cronbach alpha

internal consistency reliability was calculated as follows: neuroticism (.71), extroversion (.83), openness to experience (.81), aggreeableness (.85) and conscientiousness (.81).

Arnett Inventory of Sensation Seeking (AISS). AISS which was developed by Arnett (1994) and adapted to Turkish by Sümer (2002) was used to determine the personality trait of sensation seeking among university students. The scale consists of 19 4-point Likert type items and a single factor. The lowest and higher scores that can be obtained from the scale are 19 and 76. Higher scores obtained from the scale is interpreted as higher sensation seeking. The internal consistency coefficient of the scale was found to be .85 in the reliability studies, the. In this study, the Cronbach alpha value was found as .61.

UCLA Loneliness Scale . "UCLA Loneliness Scale" developed by Russell, Peplau and Ferguson (1978), then revised by Russell, Peplau and Cutrona (1980) and adapted into Turkish by Demir (1989), was used to determine university students' loneliness levels. The scale consists of a total of 20 items in 4-Likert type, 10 of which are reverse scored. The lowest score that can be obtained from the scale is 20 and the highest score is 80. The increase in the score obtained from the scale indicates increases in individuals' loneliness levels. The internal consistency coefficient was found to be .96 in the reliability studies of the scale. In this study, the Cronbach alpha value was found to be .77.

Multidimensional Scale of Perceived Social Support. "Multidimensional Scale of Perceived Social Support" developed by Zimet et. al. (1988) and adapted into Turkish by Eker et. al. (2001) was used to determine university students' perceived social support levels. The scale consists of 12 7-point Likert type items. In addition, the scale has three sub-dimensions: family, friends and a special person. The lowest score that can be obtained from the scale is 12 and the highest score is 84. Higher scores on the scale indicate high perceived social support. Internal consistency coefficients were found to range between .80 and .95 in the reliability studies of the scale. In addition, the scale was found to explain 75% of the total variance in the factor analysis. Structural validity of the scale was evaluated in relation to UCLA Loneliness Scale, Perceived Social Support Scale (PSS-Fa, PSS-Fr), Symptom Check List (SCL-90-R) and Beck Hopelessness Scale. In all three of the samples, the family and friends subscales and the total score of the Multidimensional Perceived Social Support Scale showed positive correlations with the PSS scales, which is the other social support scale. In this study, the cronbach alpha value was found to be .87.

Personal Information Form. The "Personal Information Form" developed by the researcher was used to identify participating university students' gender, age and departments.

Process

The first step of data collection process consisted of obtaining the necessary permissions to use the scales within the scope of this research. Then, these measurement tools were prepared in a single format. Later, the university students who participated in the study were informed about the purpose of the research. Participation in the study were told about the voluntary nature of the study and the students who did not volunteer to participate were not included in the study. The data were collected in a single session and the data collection process took approximately 50 minutes.

Data Analysis

Following the data collection, the data were entered into the SPSS package program. Then, appropriate data analyses were carried out depending on the sub-problems of the research. Pearson Moments Multiplication Correlation Coefficient technique was used in the analysis of the relationship between

internet addiction and sensation seeking, personality traits, loneliness, and social support. Within the scope of this research, the independent variables whose effects were examined in relation to the dependent variable were grouped among themselves based on the theoretical studies and other studies in the relevant literature. Hierarchical regression analysis was used to determine whether internet addiction was significantly predicted by the individual factor (gender), sensation seeking, social relationships (loneliness, social support) and five-factor personality traits (neuroticism, extraversion, openness to experience, agreeableness, conscientiousness).

RESULTS

This section presents the results of the analyses conducted in line with the general objective and sub-objectives of the study.

Table 2 displays the relationships between university students' internet addiction and gender, sensation seeking, personality traits (neuroticism, extroversion, openness to experience, agreeableness, conscientiousness), loneliness and social support scores.

Table 2. Relationships between internet addiction, gender, sensation seeking, personality traits, loneliness and social support

	2	3	4	5	6	7	8	9	10
1.Internet Addiction	,157**	,116**	-,133**	,226**	,182**	-,121**	-,069*	-,145**	-,145**
2.Gender		,249**	-,054	,054	,000	,068*	,060	-,036	-,057
3.Sensation Seeking			,014	-,056	,047	,158**	,146**	-,065	-,031
4.Social Support				-,438**	-,024	,238**	,228**	,208**	,210**
5.Loneliness					,168**	-,355**	-,263**	-,243**	-,231**
6.Neuroticism						,150**	,183**	,066*	,118**
7.Extraversion							,766**	,610**	,592**
8.Openness to experience								,706**	,626**
9. Agreeableness									,701**
10. Conscientiousness									

$**p<,01$ $*p<,05$

Table 2 demonstrates significant, positive and moderate relationships between university students' internet addiction scores and gender scores (r =, 157, p <, 01), sensation seeking scores (r =, 116, p <, 01), loneliness scores (r =, 226, p <, 01) and neuroticism scores (r = .182, p <, 01). Significant, negative and low level relationships were found between university students' internet addiction scoresand social support scores (r = -, 133, p <, 01), extroversion scores (r = -, 121, p <, 01), openness to experience scores (r = -, 069, p <, 05), agreeableness scores (r=-,145, p<,01) and conscientiousness scores (r=-,145, p<,01).

As seen in Table 2, the dependent variable of this study, internet addiction, demonstrated significant relationships with all of the independent variables. Hierarchical regression analysis was applied to the data based on these relationships between dependent and independent variables. The independent variables, including the dependent variable, are continuous variables except gender. However, since gender is a discontinuous variable, it is defined as a dummy variable in the hierarchical regression analysis.

Table 3. Hierarchical regression analysis results of factors related to individual trait, sensation seeking, social relationships and personality traits predicting internet addiction

	B	SH$_B$	β	R^2	Δ R^2	F
1.Block: Individual Traits				,025***	,024***	22,060
Gender	5,158	1,098	,157***			
2. Block: Sensation seeking				,031***	,029***	13,923
Gender	4,488	1,131	,137***			
Sensation seeking	,165	,069	,082*			
3. Block: Social Relationships				,082***	,078***	19,426
Gender	3,919	1,105	,119***			
Sensation Seeking	,198	,068	,099**			
Social Support	-,037	,036	-,037			
Loneliness	,381	,066	,209***			
4. Block: Personality Traits				,119***	,110***	12,983
Gender	4,029	1,093	,123***			
Sensation Seeking	,168	,069	,084*			
Social Support	-,032	,036	-,032			
Loneliness	,254	,070	,139***			
Neuroticism	2,278	,468	,166***			
Extraversion	-1,434	,762	-,100			
Openness to experience	1,222	,831	,085			
Agreeableness	-,726	,697	-,055			
Conscientiousness	-,963	,638	-,072			

*p<,05; **p<,01; ***p<,001

As Table 3 demonstrates, four blocks were created from independent variables first. The first block contained the gender variable as an individual factor. Gender was used as a dummy variable. The second block included the sensation seeking variable. The third block included social relationships. Social relations block consisted of social support and loneliness variables. The fourth block included personality traits: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. In hierarchical regression, the regression process was composed of adding these four blocks to the regression sequentially as seen in the table.

The analysis results regarding predicting internet addiction showed that the individual factor, gender, entering the equation in the first block had an effect on the total internet addiction score. The individual factor explained 2.5% (F (1/871) = 22.06; p <, 001) of the total variance regarding internet addiction. It was significant according to the results of the *t* test (t = 4,697; p <, 001) regarding the significance of the regression coefficient (β=,157) for gender. In the second block, sensation seeking variable was added to the individual factor-gender and it was found that the total variance regarding internet addiction increased significantly and it was found to be 3.1% (F (2/870) = 13.923; p <, 001). The contribution of the sensation seeking variable to the total variance was 2.9% (p <, 001). According to the *t* test results (t = 2.381; p <, 05) regarding the significance of the regression coefficients (β=,082) the level of the sensation seeking variable was found to be significant on internet addiction. In the third block, social support and loneliness variables were added to the individual factor-gender and sensation seeking factor and the total variance related to internet addiction increased significantly to the point of level of 8.2% (F (4/868) = 19.426; p <.001). The contribution of loneliness and social support to the total variance was 7.8% (p <, 001). According to the *t* test results regarding the significance of the regression coefficients (β = - .037), social support (t = -1.018; p>,05) was not significant for internet addiction , however, loneliness (β =, 209; t = 5.75; p <, 001) was found to be significant on internet addiction. In the fourth block, when

personality traits variables were added to individual factor: gender, sensation seeking and social relations (social support and loneliness) variables, the total variance regarding internet addiction increased significantly: 11.9% (F (9/863) = 12.983; p <.001). The contribution of personality traits variables to the total variance was 11% (p <, 001). According to the *t* test results regarding the significance of the regression coefficients, conscientiousness (β=,166; t=4,915; p<,001) was found to be a significant predictor of internet addiction. Among the personality traits, regression coefficients for extraversion (β = - .100; t = -1,882; p> .05), openness to experience (β = .085; t = -1.47; p> .05), agreeableness (β=-,055; t=-1,041; p>,05) and conscientiousness (β=-,72; t=-1,509; p>,05) were not found to be statistically significant.

According to the results of the hierarchical regression analysis consisting of four blocks, it was determined that gender in the first block, sensation seeking in the second block and loneliness in the third block had a significant effect on internet addiction in all the blocks to which they were added. In addition, it was observed that the social support variable had no significant effect on internet addiction when it was added to the third block (social relations) and the fourth block. The relative importance of predictive variables on internet addiction can be listed as neuroticism, loneliness, gender, extraversion, openness to experience, sensation seeking, conscientiousness, agreeableness and social support.

DISCUSSION, CONCLUSION & SUGGESTIONS

The study pointed to significant, close to moderate and positive relationships between the university students' internet addiction levels and their gender, sensation seeking, loneliness, and neuroticism (personality trait) scores. However, significant, low-level negative relationships were observed with social support and personality traits such as extroversion, openness to experience, agreeableness and conscientiousness. The results of the hierarchical analysis applied to the data to determine the power of the gender, sensation seeking, social support, loneliness and personality traits of university students in predicting their internet addiction demonstrated that gender in the first block, sensation seeking in the second block and loneliness in the third block had a significant effect on internet addiction in all the blocks to which they are added. However, social support did not have a significant effect on internet addiction when it was added to the third block (social relations) and to the last block. The relative importance of predictor variables on internet addiction can be listed as neuroticism, loneliness, gender, extraversion, openness to experience, sensation seeking, conscientiousness, agreeableness and social support. Although the relationship of internet addiction with personality traits was found to be close to its relation with gender, its low contribution to the model may be due to the marginality of the relationships between personality traits.

The studies in the relevant literature in our country and abroad also pointed to relationships between gender and internet addiction as reported in this study. For example, Ceyhan (2008) investigated the relationships between Turkish university students' problematic internet use and other addictions, psychological symptoms and gender. Research results showed that male students' problematic internet use levels were higher than those of female students. In their study on teenagers, Esen and Siyez (2011) found that gender explained 4% of internet addiction. Based on this finding, it may be argued that gender is an important variable in explaining internet addiction. In the studies on university students, Morahan-Matin and Schumacher (2000) found that males were more likely to become internet addicts than females (12% versus 3%). In addition to these studies, the results of many other studies conducted abroad and in our country reported the existence of a relationship between internet addiction and gender (Canan, 2010;

Chou & Hsiao, 2000; Griffiths, 1999; Jang, Hwang, & Choi, 2008; Johansson & Götestam, 2004; Morahan-Martin & Schumacher, 2003; Ostovar et. al., 2016; Scherer, 1997; Tsai et. al., 2009). Therefore, it can be argued that the results of this study support the findings of studies conducted both abroad and in our country, which reveal that internet addiction is related to gender.

Zuckerman (2014, p.51) defined sensation seeking as "a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience". Surfing the internet or many online activities are widely considered a form of global high-tech adventure and sensation seeking (Lin & Tsai, 2002).

The Internet and the opportunities it provides facilitate new experiences in a rapid manner. Hence, many studies have been conducted abroad examining the relationship between sensation seeking and internet addiction and problematic internet use. This research is one of the few studies that examined the relationship between internet addiction and sensation seeking research in our country and the findings showed that sensation seeking was a significant predictor of internet addiction with other independent variables in all blocks. Therefore, the results of this study support both the theoretical views on sensation seeking as an important variable on internet addiction (Lin & Tsai, 2002; Zuckerman, 2014, p.51) and the findings of previous studies conducted in the field (Bitton & Medina, 2015; Müller, Dreier, Beutel, & Wölfling, 2016; Rahmani & Lavasani, 2011a; Shi, Zhou, & Yan, 2005; Weisskirch & Murphy, 2004; Yuen & Lavin, 2004). This finding of this study also supports the results of the study conducted by Balkaya Çetin and Ceyhan (2014), the first research examining the relationship between sensation seeking and problematic internet use in our country, revealing that sensation seeking explained 2% of the variance related to problematic internet use. Various studies abroad also pointed to relationships between sensation seeking and internet addiction (Bitton & Medina, 2015; Müller, Dreier, Beutel, & Wölfling, 2016; Rahmani & Lavasani, 2011b; Shi, Zhou, & Yan, 2005 ; Weisskirch & Murphy, 2004; Yuen & Lavin, 2004). Contrary to these results, in their studies, Bitton and Medina (2015) and Müller, Dreier, Beutel, and Wölfling (2016) reported a negative relationship between sensation seeking and internet addiction. Müller, Dreier, Beutel, and Wölfling (2016) argued that sensation seeking would predispose individuals to addictive behaviors. However, their research results contradicted this assumption. Based on their findings, it was determined that sensation seeking decreased in patients with gambling disorder and low sensation seeking was observed in patients with internet addiction. Rahmani and Lavasani (2011a) compared the sensation seeking of internet addicts and non-addicts and five major personality factors. In this study conducted on university students, internet addicts had significantly higher sensation and adventure seeking scores compared to non-addicts. While Dalbudak et. al. (2015) concluded that sensation seeking, attention deficit / hyperactivity symptoms, and attention deficit significantly predicted the severity of internet addiction, Rahmani and Lavasani (2011a) concluded that 24% of internet addiction was explained by sensation seeking, personality and gender. While these studies support our research results, Mesgarani et. al. (2013) concluded in their study that there was no significant relationship between internet addiction and sensation seeking and that internet addiction was not predicted by sensation seeking. While sensation seeking manifests itself in individuals who need more activities, it starts to decrease after participating in an activity and even after starting to use this activity to a harmful extent.

The results of this study demonstrated that loneliness was a significant predictor of internet addiction in all blocks with other independent variables. Therefore, the results of this study support the findings of studies that revealed that actual loneliness, virtual loneliness and social isolation were in fact related to internet addiction (Batıgün & Hasta, 2010; Hardie & Tee, 2007; Karayağız Muslu & Bolışık, 2009; Li, Zhang, Xiao, & Nie, 2016; Özdemir et. al., 2014; Pontes et. al., 2014; Ümmet & Ekşi, 2016; Yao & Zhong, 2014). In addition, in their study, Batıgün & Hasta (2010) found that individuals addicted to the internet used the inhibitory style more in interpersonal communication compared to non-addicted individuals, their loneliness levels were higher and those who were addicted to the internet used it for longer periods of time and for more interactive purposes.

Social support is one of the primary methods used by individuals to reduce the effects of stressful situations and to cope with psychosomatic symptoms (Plotnik, 2007, p.332). Psychological problems may surface in the absence or lack of social support. As in this study, the findings of the relevant studies conducted abroad and in Turkey pointed to relationships between internet addiction and social support (Batıgün & Hasta, 2010; Hardie & Tee, 2007; Wu et. al., 2016; Yeh et. al., 2008). For example, in a study conducted with adolescents, Wu et. al. (2016) examined the demographic characteristics, internet use, internet addiction, social support and depression. The prevalence rate of internet addiction was found to be 10.4%. It was found that internet addiction negatively correlated with social support and was positively correlated with depression. Social support was found to have a significant negative effect on internet addiction. However, Miller (2008) examined the frequency of internet use and its effect on perceived social support and sense of well-being. It was determined that internet use was not significantly dependent on perceived social support. Based on the analysis of these studies, it can be argued that social support has a significant effect on internet addiction. In his model of internet addiction, Davis (2001) emphasized social interaction and social support and reported that individuals fell back on internet to meet this need. The relationship between social isolation and lack of social support with internet addiction was underlined. In their separate models explaining internet addiction, Pratarelli et. al. (1999) and Suler (1999) mentioned that social relationships, interpersonal relationships and the need to communicate may result in internet addiction unless the need to communicate is met in normal ways.

The neuroticism dimension places people on a point in the continuum of emotional stability and personal harmony. People with high levels of neuroticism experience more stress in the face of daily events than people with low levels of neuroticism. On the other hand, individuals with emotional balance, which is the opposite of neuroticism, are open to criticism, calm and confident and they can deal with negative emotions and situations effectively (Burger, 2006; Goldberg, 1992). This study found a positive relationship. Some studies supporting the results of this research also indicated that internet addiction increased when the neuroticism scores increased and internet addiction decreased as emotional balance was achieved (Blachnio et. al., 2017; Kuss et al., 2014; Mark & Ganzach, 2014; Wang et. al., 2015; Zhou, Li, Li et. al., 2017). In the cognitive behavioral internet addiction model, Davis (2001) explained that psychopathology (depression, bipolar disorder, anxiety other addictions) would cause internet addiction in addition to having negative thoughts.

Extroverts are highly social persons while they are also energetic, optimistic, friendly and sociable (Burger, 2006). Extroversion includes characteristics such as social skills, entrepreneurship and communicativeness. Extroverts are active, sympathetic, impressive and dominant individuals (Morsünbül, 2014). A negative relationship was found between the personality trait of extraversion and

internet addiction in this study. There are studies that support this specific finding of the present study (Blachnio et al., 2017; Servidio, 2014), as well as studies that pointed to positive relationships between the personality trait of extraversion and internet addiction (Kuss et. al., 2014; Mark & Ganzach, 2014; Zhou, Li, Jia et. al., 2017). In their study conducted to determine the risk factors of internet addiction in teenagers, Kuss, Van Rooij, Shorter, Griffiths & van de Mheen (2013) found no relationship between internet addiction with extroversion as a personality trait. Individuals with high level of openness to experience are creative, dreamers/imaginative and non-conservative in their thoughts and opinions with certain characteristics such as creativity, curiosity and openness to new ideas (McCrae & Costa, 1994, p. 82; Morsünbül, 2014). The findings of this research pointed to a negative relationship between internet addiction and openness to experience. The studies conducted by Wang et. al. (2015) and Blachnio et. al. (2017) also support this research finding. However, some other studies found positive relationships with openness to experience, contradicting the present research finding (Mark & Ganzach, 2014; Zhou, Li, Jia et. al., 2017). In addition, there are also some studies that were not able to determine a significant relationship between internet addiction and openness to experience as a personality trait (Kuss et al., 2014; Servidio, 2014). Agreeableness includes characteristics such as sympathy, respect, sincerity, and understanding. Individuals wth the trait of agreeableness tend to maintain positive and mutual relationships with others (Morsünbül, 2014). This study found a negative relationship between internet addiction and agreeableness as personality trait. It was determined that individuals with this personality trait had a low level internet addiction. There are other studies supporting this finding with similar results (Blachnio et. al., 2017; Kuss et. al., 2014; Servidio, 2014; Tang, Chen, Yang, Chung, & Lee, 2016; Wang et. al., 2015; Zhou, Li, Li et. al., 2017). In their study on young adults, Mark and Ganzach (2014) examined the relationship between internet use and personality traits and found a positive relationship between agreeableness and internet use, contradicting the results of the present research. Conscientiousness includes properties such as self-discipline, organization and success. Individuals dominated by this trait tend to be planned, organized and self-disciplined. Individuals with high level of conscientiousness are individuals with high organizational skills; they are stable and motivated to achieve their goals directly (Cervone & Pervin, 2008, p. 237; Morsünbül, 2014). This study concluded that individuals with conscientiousness as a personality trait have lower levels of internet addiction. Some studies examining the relationship between personality traits and internet use, and internet addiction also found a negative relationship between conscientiousness personality trait and internet addiction, supporting this finding of the present study (Kuss et. al., 2014; Servidio, 2014; Zhou, Li, Li et. al. ., 2017). Based on the regression analysis of the sample of university students, it was found that five-factor personality traits constituted 10% of the additionally explained variance for the prediction of internet addiction while conscientiousness and emotional stability were not significant predictors on internet addiction (Sevidio, 2014). Kayiş et. al. (2016) found that all five-factor personality traits had a significant relationship with internet addiction. When the sub-dimensions were evaluated one by one, it was found that neuroticism had a positive relationship with internet addiction, while openness to experience, agreeableness, conscientiousness and extroversion had a negative relationship with internet addiction.

This study explored the relationships between university students' internet addiction and sensation seeking, personality traits, social support and loneliness. In future studies, internet addiction of university students can be addressed with different psychosocial factors (such as risk-taking, locus of control, emotional intelligence). In addition, the relationships between university students' internet addiction and time management and similar variables can be investigated. The individuals participating in this research

were university students between the ages of 18 and 23. However, it is stated in the relevant literature that the highest ratio of use, i.e. internet addiction, is more common between the ages of 16-24. Therefore, it may be recommended to conduct studies investigating internet addiction in study groups that include both these ages and teenagers, children and even toddlers and preschoolers. The effect of social support and loneliness on internet addiction was found to be significant in the social relations block in this study. Psychological counselors working in the university medico-social center should identify the students at risk and encourage them to receive psycho-educational programs and psychological counseling designed to help develop and enrich their life skills (such as communication skills, problem solving skills, stress management).

REFERENCES

Bacanlı, H., İlhan, T., & Aslan, S. (2009). Beş faktör kuramına dayalı bir kişilik ölçeğinin geliştirilmesi: Sıfatlara dayalı kişilik testi (SDTK). *Türk Eğitim Bilimleri Dergisi*, *7*(2), 261–279.

Balkaya Çetin, A., & Ceyhan, A. A. (2014). Ergenlerin internette kimlik denemeleri ve problemli internet kullanım davranışları. *Addicta: The Turkish Journal on Addictions.*, *1*(2), 5-46.

Batıgün, A. D., & Hasta, D. (2010). İnternet bağımlılığı: Yalnızlık ve kişilerarası ilişki tarzları açısından bir değerlendirme. *Anadolu Psikiyatri Dergisi*, *11*(3), 213-219.

Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for internet addiction. *CyberPsychology & Behavior*, *4*(3), 377-383.

Blachnio, A., Przepiorka, A., Senol-Durak, E., Durak, M., & Sherstyuk, L. (2017). The role of personality traits in Facebook and Internet addictions: A study on Polish, Turkish, and Ukrainian samples. *Computers in Human Behavior*, *68(1)*, 269-275.

Brady, K. T., & Randall, C. L. (1999). Gender differences in substance use disorders. *Psychiatric Clinics of North America, 22*(2), 241-252.

Bitton, M. S., & Medina, H. C. (2015). Problematic internet use and sensation seeking: Differences between teens who live at home and in residential care. *Children and Youth Services Review*, *58(1)*, 35-40.

Burger, J. M. (2006). *Kişilik*. İstanbul: Kaknüs.

Büyükşahin Çevik, G., & Çelikkaleli, Ö. (2010). Ergenlerin arkadaş bağlılığı ve internet bağımlılığının cinsiyet ebeveyn tutumu ve anne baba eğitim düzeylerine göre incelenmesi. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *19*(3), 225-240.

Canan, F. (2010). *Üniversite öğrencilerinde internet bağımlılığı, disosiyatif belirtiler ve sosyodemografik özellikler arasındaki ilişki*. Tıpta Uzmanlık Tezi, Düzce Üniversitesi, Tıp Fakültesi, Düzce.

Cervone, D., & Pervin, L. A. (2008). *Personality theory and research*. Hoboken, NJ: Wiley.

Ceyhan, A.A. (2008). Predictors of problematic internet use on Turkish university students, *CyberPsychology & Behavior*, *11*(3), 363-366.

Chen, Y. F., & Peng, S. S. (2008). University students' Internet use and its relationships with academic performance, interpersonal relationships, psychosocial adjustment, and self-evaluation. *CyberPsychology & Behavior*, *11*(4), 467-469.

Chou, W. P., Ko, C. H., Kaufman, E. A., Crowell, S. E., Hsiao, R. C., Wang, P. W., ... & Yen, C. F. (2015). Association of stress coping strategies with internet addiction in college students: The moderating effect of depression. *Comprehensive Psychiatry*, *62*(1)*,* 27-33.

Chou, C., & Hsiao, M. C. (2000). Internet addiction, usage, gratification, and pleasure experience: The Taiwan college students' case. *Computers and Education, 35*(1), 65-80.

Compton, W. M., Cottler, L. B., Ben Abdallah, A., Phelps, D. L., Spitznagel, E. L., & Horton, J. C. (2000). Substance dependence and other psychiatric disorders among drug dependent subjects: race and gender correlates. *The American Journal on Addictions*, *9*(2), 113-125.

Dalbudak, E., Evren, C., Aldemir, S., Taymur, I., Evren, B., & Topcu, M. (2015). The impact of sensation seeking on the relationship between attention deficit/hyperactivity symptoms and severity of Internet addiction risk. *Psychiatry Research*, *228*(1), 156-161.

Davis, R. A. (2001). A cognitive-behavioral model for pathological internet use (PIU). *Computers in Human Behavior, 17*(2), 187-195.

Demir, A. (1990). *Üniversite öğrencilerinin yalnızlık düzeylerini etkileyen bazı etmenler.* Doktora Tezi, Hacettepe Üniversitesi, Sosyal Bilimler Enstitüsü, Ankara.

Demirer, V., Bozoglan, B., & Sahin, I. (2013). Preservice teachers' Internet addiction in terms of gender, Internet access, loneliness and life satisfaction. *International Journal of Education in Mathematics, Science and Technology, 1*(1), 56-63.

Esen, E., & Siyez, D.M. (2011). Ergenlerde internet bağımlılığını yordayan psiko-sosyal değişkenlerin incelenmesi. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, *4*(36), 127-138.

Fengqiang, G., Jie, X., Yueqiang, R., & Lei, H. (2016). The relationship between internet addiction and aggression: multiple mediating effects of life events and social support. *Psychology Research*, *6*(1), 42-49.

Fraenkel, J.R., & Wallen, N.E. (2006). *How to design and evaluate research in education.* New York: McGraw-Hill.

Griffiths, M. (1996). Behavioural addiction: an issue for everybody? *Employee Councelling Today, 8*(3), 19-25.

Griffiths, M. (1999). Internet addiction: Fact or fiction? *The Psychologist, 12*(5), 246-250.

Goldberg, I. (1996). Internet addiction support group. Retrieved from http://wwwusr.rider.edu/~suler/psycyber/supportgp.html

Grohol, J. (1999). Too much time online: Internet addiction or healthy social interactions? *CyberPsychology & Behaviour, 2*(1), 395-401.

Hardie, E., & Tee, M. Y. (2007). Excessive Internet use: The role of personality, loneliness and social support networks in Internet Addiction. *Australian Journal of Emerging Technologies & Society*, *5*(1), 34-47.

Jang, K. S., Hwang, S. Y., & Choi, J. Y. (2008). Internet addiction and psychiatric symptoms among Korean adolescents. *Journal of School Health, 78*(3), 165-171.

Johansson, A., & Götestam, K. G. (2004). Internet addiction: characteristics of a questionnaire and prevalence in Norwegian youth (12–18 years). *Scandinavian Journal of Psychology, 45(3*), 223-229.

İnce, A., Doğruer, Z., & Türkçapar, M. H. (2002). Erken ve geç başlangıçlı erkek alkol bağımlılarında sosyodemografik, klinik ve psikopatolojik özelliklerin karşılaştırılması. *Klinik Psikiyatri*, 5(1), 82-91.

Karagülle, A. E., & Çaycı, B. (2014). Ağ toplumunda sosyalleşme ve yabancılaşma. *The Turkish Online Journal of Design, Art and Communication,* 4(1), 1-9.

Karayağız Muslu, G., & Bolışık, B. (2009). Çocuk ve gençlerde internet kullanımı, *TAF Preventive Medicine Bulletin, 8*(5), 445-450.

Kayiş, A. R., Satici, S. A., Yilmaz, M. F., Şimşek, D., Ceyhan, E., & Bakioğlu, F. (2016). Big five-personality trait and internet addiction: A meta-analytic review. *Computers in Human Behavior*, *63*(1), 35-40.

Kubey, R. W., Lavin, M. J., & Barrows, J. R. (2001). Internet use and collegiate academic performance decrements: Early findings. *Journal of Communication*, *51*(2), 366-382.

Kuss, D. J., Van Rooij, A. J., Shorter, G. W., Griffiths, M. D., & van de Mheen, D. (2013). Internet addiction in adolescents: Prevalence and risk factors. *Computers in Human Behavior*, *29*(5), 1987-1996.

Kuss, D. J., Shorter, G. W., Van Rooij, A. J., van de Mheen, D., & Griffiths, M. D. (2014). The internet addiction components model and personality: establishing construct validity via a nomological network. *Computers in Human Behavior*, *39*(1)*,* 312-321.

Lavin, M., Marvin, K., McLarney, A., Nola, V., & Scott, L. (1999). Sensation seeking and collegiate vulnerability to Internet dependence. *CyberPsychology & Behavior*, *2*(5), 425-430.

Li, W., Zhang, W., Xiao, L., & Nie, J. (2016). The association of internet addiction symptoms with impulsiveness, loneliness, novelty seeking and behavioral inhibition system among adults with attention-deficit/hyperactivity disorder (ADHD). *Psychiatry Research*, *243*(1), 357-364.

Liang, L., Zhou, D., Yuan, C., Shao, A., & Bian, Y. (2016). Gender differences in the relationship between internet addiction and depression: A cross-lagged study in Chinese adolescents. *Computers in Human Behavior, 63*(1), 463-470.

Lin, S. S. J., & Tsai, C. C. (1999, August). Internet addiction among high schoolers in Taiwan. *106th annual convention of the American Psychological Association*, Boston, MA.

Lin, S. S. J., & Tsai, C. C. (2002). Sensation seeking and internet dependence of Taiwanese high school adolescents. *Computers in Human Behavior*, *18*(4), 411-426.

Nelson-Zlupko, L., Kauffman, E., & Dore, M. M. (1995). Gender differences in drug addiction and treatment: Implications for social work intervention with substance-abusing women. *Social Work*, *40*(1), 45-54.

Mark, G., & Ganzach, Y. (2014). Personality and internet usage: A large-scale representative study of young adults. *Computers in Human Behavior*, *36*(1), 274-281.

McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood.* New York: Guildford.

Morahan-Martin, J., & Schumacher, P. (2003). Loneliness and social uses of the internet. *Computers in Human Behavior, 19*(6), 659-671.

Mehroof, M., & Griffiths, M. D. (2010). Online gaming addiction: the role of sensation seeking, self-control, neuroticism, aggression, state anxiety, and trait anxiety. *Cyberpsychology, Behavior, and Social Networking, 13*(3), 313-316.

Mesgarani, M., Shafiee, S., Ahmadi, E., & Zare, F. (2013). Studying the relationship between internet addiction and emotional intelligence, sensation seeking and metacognition among those who referred to cafes. *International Research Journal of Applied and Basic Sciences*, *4*(4), 889-893.

Miller, S. M. (2008). The effect of frequency and type of internet use on perceived social support and sense of well-being in individuals with spinal cord injury. *Rehabilitation Counseling Bulletin, 51*(3), 148-158.

Morsünbül, Ü. (2014). Hızlı büyük beşli kişilik testi Türkçe versiyonu geçerlilik ve güvenirlik çalışması. *Düşünen Adam: Psikiyatri ve Nörolojik Bilimler Dergisi*, *27*(4), 316-322.

Müller, K. W., Dreier, M., Beutel, M. E., & Wölfling, K. (2016). Is Sensation Seeking a correlate of excessive behaviors and behavioral addictions? A detailed examination of patients with gambling disorder and internet addiction. *Psychiatry Research*, *242*(1), 319-325.

Müller, K. W., Dreier, M., Beutel, M. E., Duven, E., Giralt, S., & Wölfling, K. (2016). A hidden type of internet addiction? Intense and addictive use of social networking sites in adolescents. *Computers in Human Behavior, 55*(1), 172-177.

Ostovar, S., Allahyar, N., Aminpoor, H., Moafian, F., Nor, M. B. M., & Griffiths, M. D. (2016). Internet addiction and its psychosocial risks (depression, anxiety, stress and loneliness) among Iranian adolescents and young adults: A structural equation model in a cross-sectional study. *International Journal of Mental Health and Addiction*, *14*(3), 257-267.

Ögel, K. (2005). Madde kullanım bozuklukları epidemiyolojisi. *Türkiye Klinikleri Dahili Tıp Bilimleri Dergisi Psikiyatri*, *1*(47), 61-4.

Ögel, K., Tamar, D., Evren, C., & Çakmak, D. (2000). İstanbul'da lise gençleri arasında sigara, alkol ve madde kullanım yaygınlığı. *Klinik Psikiyatri, 3*(4), 242-245.

Özdemir, Y., Kuzucu, Y., & Ak, Ş. (2014). Depression, loneliness and ınternet addiction: How important is low self-control?. *Computers in Human Behavior*, *34*(1), 284-290.

Pawlowska, B., Zygo, M., Potembska, E., Kapka-Skrzypczak, L., Dreher, P., & Kedzierski, Z. (2015). Prevalence of Internet addiction and risk of developing addiction as exemplified by a group of Polish adolescents from urban and rural areas. *Annals of Agricultural and Environmental Medicine, 22*(1), 129-136.

Plotnik, R. (2007). *Psikolojiye giriş*. (T. Geniş, Çev.). İstanbul: Kaknüs.

Pratarelli, M. E., Browne, B. L., & Johnson, K. (1999). The bits and bytes of computer/Internet addiction: A factor analytic approach. *Behaviour Research Methods. Instruments and Computers, 31*(1), 305-314.

Pontes, H. M., Griffiths, M. D., & Patrão, I. M. (2014). Internet addiction and loneliness among children and adolescents in the education setting: an empirical pilot study. *Aloma: Revista de Psicologia, Ciències de l'Educació i de l'Esport*, *32*(1), 91-98.

Rahmani, S., & Lavasani, M. G. (2011a). The comparison of sensation seeking and five big factors of personality between internet dependents and non-dependents. *Procedia-Social and Behavioral Sciences*, *15*(1), 1029-1033.

Rahmani, S., & Lavasani, M. G. (2011b). The relationship between internet dependency with sensation seeking and personality. *Procedia-Social and Behavioral Sciences*, *30*(1), 272-277.

Servidio, R. (2014). Exploring the effects of demographic factors, Internet usage and personality traits on Internet addiction in a sample of Italian university students. *Computers in Human Behavior*, *35*(1), 85-92.

Scherer, K. (1997). College life on-line: Healthy and unhealthy Internet use. *Journal of College Student Development, 38*(6), 655–665.

Shi, Q., Zhou, R., Ge, Y., Qin, X., & Zhang, K. (2005). Internet addiction disorder and sensation seeking of middle school and high school students. *Chinese Mental Health Journal*, *19*(7), 453-456.

Schoenfeld, D. (2011). *Prevalence and correlates of internet addiction in undergraduate students as assessed by two different measures.* Doctoral Thesis, State University of New York at Albany, New York.

Suler, J. R. (1999). To get what you need: healthy and pathological Internet use. *CyberPsychology & Behavior*, *2*(5), 385-393.

Sümer, N. (2003). Personality and behavioral predictors of traffic accidents: Testing a contextual mediated model. *Accident Analysis and Prevention, 35*(1)*,* 949–964.

Tang, J. H., Chen, M. C., Yang, C. Y., Chung, T. Y., & Lee, Y. A. (2016). Personality traits, interpersonal relationships, online social support, and Facebook addiction. *Telematics and Informatics*, *33*(1), 102-108.

Türkiye İstatistik Kurumu TUİK (2019). *Hanehalkı bilişim teknolojileri kullanım araştırması*. Retrieved from https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2019-30574

Tsai, H. F., Cheng, S. H., Yeh, T. L., Shih, C. C., Chen, K. C., Yang, Y. C., & Yang, Y. K. (2009). The risk factors of Internet addiction - A survey of university freshmen. *Psychiatry Research*, *167*(3), 294-299.

Ümmet, D., & Ekşi, F. (2016). Türkiye'deki genç yetişkinlerde internet bağımlılığı: yalnızlık ve sanal ortam yalnızlık bağlamında bir inceleme. *Addicta: The Turkish Journal on Addictions, 3*(1), 29-53.

Wang, E. S. T., & Wang, M. C. H. (2013). Social support and social interaction ties on internet addiction: Integrating online and offline contexts. *Cyberpsychology, Behavior, and Social Networking*, *16*(11), 843-849.

Wang, W., Ho, R. T., Chan, C. L., & Tse, S. (2015). Exploring personality characteristics of Chinese adolescents with internet-related addictive behaviors: Trait differences for gaming addiction and social networking addiction. *Addictive behaviors*, *42*(1), 32-35.

Weisskirch, R. S., & Murphy, L. C. (2004). Friends, porn, and punk: Sensation seeking in personal relationships, internet activities, and music preference among college students. *Adolescence*, *39*(154), 189-201.

Wu, X. S., Zhang, Z. H., Zhao, F., Wang, W. J., Li, Y. F., Bi, L., & Gong, F. F. (2016). Prevalence of internet addiction and its association with social support and other related factors among adolescents in China. *Journal of Adolescence*, *52*(1), 103-111.

Yan, W., Li, Y., & Sui, N. (2014). The relationship between recent stressful life events, personality traits, perceived family functioning and internet addiction among college students. *Stress and Health*, *30*(1), 3-11.

Yao, M. Z., & Zhong, Z. J. (2014). Loneliness, social contacts and internet addiction: A cross-lagged panel study. *Computers in Human Behavior*, *30*(1), 164-170.

Yeh, Y. C., Ko, H. C., Wu, J. Y. W., & Cheng, C. P. (2008). Gender differences in relationships of actual and virtual social support to Internet addiction mediated through depressive symptoms among college students in Taiwan. *Cyberpsychology & Behavior*, *11*(4), 485-487.

Young, K. S. (1996). Psychology of computer use: XL. Addictive use of the internet: A case that breaks the stereotype. *Psychological Reports, 79*(3), 899–902.

Young, K. S. (1998b). Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology and Behavior, 1*(3), 237–244.

Young, K. S. (1999a). Internet addiction: symptoms, evaluation and treatment. In L.VandeCreek & T.L. Jackson (Eds.), *Innovations in clinical practice: A source book* (pp. 19-31). Sarasota, FL: Professional Resource.

Young, K. S. (1999b). What Is Cybersexual Addiction? Retrieved from https://www.healthyplace.com/addictions/center-for-internet-addiction-recovery/what-is-cybersexual-addiction

Young, K.S. (2004). Internet addiction: A new clinical phenomenon and its consequences. *American Behavioral Scientist*, *48*(4), 402-415.

Young, K. S. (2011). Clinical assessment of internet-addicted clients. K. S. Young & C. N. de Abreu (Eds.), I*nternet addiction: A handbook and guide to evaluation and treatment* (pp.19-34). New York: John Wiley & Sons.

Yuen, C. N., & Lavin, M. J. (2004). Internet dependence in the collegiate population: the role of shyness. *CyberPsychology & Behavior*, *7*(4), 379-383.

Zhou, Y., Li, D., Jia, J., Li, X., Zhao, L., Sun, W., & Wang, Y. (2017). Interparental conflict and adolescent ınternet addiction: The Mediating role of emotional ınsecurity and the moderating role of big five personality traits. *Computers in Human Behavior*, *73*(1)*,* 470-478.

Zhou, Y., Li, D., Li, X., Wang, Y., & Zhao, L. (2017). Big five personality and adolescent Internet addiction: The mediating role of coping style. *Addictive Behaviors*, *64*(1), 42-48.

Zuckerman, M. (2014). *Sensation seeking (Psychology revivals): Beyond the Optimal Level of Arousal.* New York: Psychology.

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ÖB: Idea and design, data collection and analysis, interpretation of findings, reporting of the article.

FB: Idea and design, data analysis, interpretation of findings, reporting of the article.

Conflict of Interest

It has been reported by the authors that there is no conflict of interest.

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Ethical Statement

In the writing process of the work titled "**Psychosocial Factors That Predict Internet Addiction**" the scientific, ethical and citation rules were followed, there was no falsification on the data collected, the "Turkish Psychological Counseling and Guidance Journal Editorial Board" had no responsibility for all ethical violations, and all the responsibility belongs to the authors. I undertake that it has not been sent to another academic publishing medium for evaluation.