

Research Article

Problematic Internet Use in Terms of the Purposes of Internet Use, Irrational Beliefs, Feelings of Inferiority, and Gender

Bircan Ergun-Basak¹
Anadolu University

Merve Aydin²
Adalet Primary School

Abstract

University students are one of the most Internet-related groups in society. They are more likely to use the Internet for socialization and academic-development purposes. These needs lead some students to excessive Internet use, the most decisive marker of problematic Internet use. The aim of this study is to examine problematic Internet use with respect to the purpose of Internet use, irrational beliefs, feelings of inferiority, and gender. Data have been collected using a demographic information form and the Problematic Internet Use Scale, Feelings of Inferiority Scale, and Irrational Beliefs Test. Statistical Package for Windows is used for data analysis. Descriptive statistics, correlation analyses, ANOVA, and regression analyses have been conducted to examine the data. The results show that students who use the Internet for social media and playing games have a significantly higher level of problematic Internet use than those who use the Internet for academic purposes. According to the regression analysis results, discouragement and the negation of self-worth (the two sub-dimension of inferiority feelings) explain 25% of the total variance in problematic internet usage. They are followed by the three subdimensions of irrational beliefs, namely desire for approval, blaming tendencies, and perfectionism. These variables explain 2% of the total variance in problematic internet usage. Lastly, gender (being male) explain 1% of the total variance in problematic internet usage. At the end of this study, predictors are examined according to gender separately and results indicate that discouragement and the negation of self-value explain 25% of the total variance in problematic internet use among female and male students whereas, irrational beliefs predict only female students' problematic internet use with its 4% explanatory power. Based on these results, having discouragement and the negation of self-worth be considered as highly important variables in the problematic Internet use of university students is strongly recommended. However, despite the background in the literature on cognitive factors in problematic Internet use, their small effect in this study shows the relationship of irrational beliefs with problematic Internet use to require more research.

Keywords

Problematic Internet use • Feelings of inferiority • Irrational beliefs • University students • Gender

1 Correspondence to: Bircan Ergun-Basak, Department of Educational Sciences, Faculty of Education, Anadolu University, Eskişehir Turkey. Email: bebasak@anadolu.edu.tr

2 Adalet Primary School, Odunpazarı, Eskişehir Turkey. Email: aydin.merve26@gmail.com

To cite this article: Ergun-Basak, B., & Aydin, M. (2019). Problematic Internet use in terms of the purposes of Internet use, irrational beliefs, feelings of inferiority, and gender. *Addicta: The Turkish Journal on Addictions*, 6, 471–496. <http://dx.doi.org/10.15805/addicta.2019.6.3.0017>

Technological developments have historically led to changes in individuals' lives. Similarly, Internet technology has expanded in time from the moment it was discovered and has turned out to be a daily habit for individuals. The fact that the Internet provides individuals with the opportunity to conduct the various activities they need such as gaining information, chatting, shopping, and watching movies quickly and economically has facilitated their embrace of the Internet (Özer, 2013). Through the Internet, individuals come together with those who share common interests (Çakır, 2007), decrease their boredom, gain new experiences, and meet their needs (Özer, 2013). These benefits of the Internet are the primary aspects that have increased Internet use.

The Internet simplifies, accelerates, and diversifies life, positively contributing a lot to it. However, the fact that the Internet has expanded and is continuously used by individuals has brought out uncontrolled Internet use. The uncontrolled and excessive use of the Internet is accepted as the basic indicator of problematic Internet use (Ceyhan, 2011). Problematic Internet use is defined as uncontrolled Internet usage that emerges with behavioral, emotional, and cognitive symptoms; it disrupts individuals' social, academic, and professional lives (Caplan, 2005). Similarly, Ceyhan, Ceyhan, and Gürcan (2007) defined problematic Internet use as excessive Internet use behavior that leads to negative consequences in an individuals' life. The literature has different concepts such as Internet dependency or Internet addiction for describing excessive Internet use. However, these concepts point to pathological Internet use, whereas the term problematic Internet use describes uncontrolled Internet use among the non-pathological population (Caplan, 2003; Ceyhan, et al., 2007).

Because university students are in their first years of adulthood, their primary developmental needs form a unique identity and establish close relationships. To meet these needs in the past, university students could commonly use face-to-face settings or telephone, whereas today they have the opportunity to use the Internet (Ögel, 2012). This situation indicates that the Internet provides university students with the opportunity to meet their developmental needs. In problematic Internet use, using the Internet to meet developmental needs is not seen as a problem, but problems appear when individuals are unable to limit their Internet use (Gönül, 2002). Those unable to limit their Internet use are seen to be vulnerable to negative outcomes such as access to inappropriate content, misinformation, cyber bullying, fraud, ethical violations, and isolation from face-to-face social relations (Ceyhan & Ceyhan, 2007).

Previous studies have pointed out problematic Internet use to lead to an increase in socialization problems, loneliness, and pornographic behaviors (Doruk, 2007; Keser-Özcan & Buzlu, 2007). Research has found individuals with problematic Internet use to have difficulty making new friends (Anderson, 2001), to experience a decrease in academic performance (Kubey, Lavin, & Barrows, 2001), and to put off responsibilities

at home and work (Yang & Tung, 2007). Moreover, problematic Internet use has been revealed to hinder relational, professional, and social development (Young, 2007), prevent effectively conducting daily life (Morahan-Martin & Schumacher, 2000), damage mental health, disrupt economic balance, and negatively affect well-being (Davis, 2001). These negative consequences of problematic Internet use change and sometimes interrupt university students' developmental patterns (Cumurcu & Kaya, 2004).

Today's competitive and technological world has led university students to question their competencies while dealing with challenges specific to university life, such as budget management, living alone, independent decision-making, academic responsibilities, adapting to social environments, and making career plans (Akdoğan, 2012). When university students feel inferior at these tasks, they become motivated to be more competent (Adler, 1956), because feelings of inferiority cause one to make an effort to move from a position of seeing one's self as inferior to a position one considers to be higher (Sweeney, 1989). In other words, every individual has feels inferior at some level (Adler, 1956), which is a significant indicator of psychological health (Akdoğan, 2012).

According to Adler (1956), feelings of inferiority relate to sociality and social life. Those who cannot take part in society and lack social relations always feel inferior (Adler, 1956). Limited participation in social life has been observed in individuals lacking social skills development from their first years of life and is defined as a lack of social interest. Those who lack social interest use the Internet more in order to meet their socialization needs as they cannot actively participate in social life in reality. This case is because individuals can more easily participate in social life on the Internet and feel more competent socially (Zorbaz, 2013). In other words, through the Internet, those who feel inferior can participate in social settings that they cannot participate in in their real lives; they meet their needs such as success, satisfaction, social relations, and having a good time on the Internet.

Problematic Internet use also relates to irrational beliefs, as individuals' thoughts comprise the main factor that governs individuals' emotions and behaviors. Irrational beliefs are defined as the absolute thoughts that consist of cognitive mistakes and unrealistic demands about oneself, others, and the conditions (Çivitçi, Türküm, Duy, & Hamamcı, 2014). Those with irrational beliefs have fixed judgments in their minds in daily life such as "everybody must love me," "I must always be successful," and "I mustn't make mistakes" (Özer, 2008). However, social relations and other conditions have a complicated structure in daily life. Depending on this complicated structure, having people meet irrational expectations is not always possible. As a result, these individuals develop emotions and thoughts such as "I am not worth being loved," "the world is not a fair place," and "people are so bad." As a consequence of such expressions, individuals become emotionally and behaviorally dysfunctional and develop a character incompatible with the realities of the world (Yurtal-Dinç, 1999).

Those who have difficult functional interactions with the environment due to irrational beliefs use the Internet as a tool for coping. These individuals see the Internet as a relaxing environment because it allows them opportunities to hide the activities they perform, to be an anonymous user, or to use a different identity. In particular, individuals unsatisfied with their social relations and social activities in face-to-face settings can achieve satisfaction by focusing on Internet activities. On the Internet, these individuals can forget the sorrows, fears, and stresses in their real life (Young, 2004). Those who act with irrational thoughts have intense negative feelings about themselves and others because they cannot produce effective behaviors and have difficulty in fulfilling their real-life expectations. As these individuals find dealing with their negative feelings difficult, they see the Internet as a place to go to or for running away. This situation causes them to use the Internet excessively or problematically. These individuals' cognitive schemes are reshaped on the Internet. Individuals' problematic Internet-use behaviors increase as they develop schemes such as "I am happy on the Internet," "I forget all my problems thanks to the Internet," and "I get rid of loneliness through the Internet" (Davis, 2001).

In conclusion, the Internet has recently become an inevitable necessity for many individuals. Internet technology is a significant tool that makes life easier for individuals as long as it is used relevantly and with balance. However, using it at a level that disturbs individuals' balance in areas such as nutrition, sleep, work, and social relations may become a risk factor that threatens adjustment. For this reason, revealing and discussing factors that may be related to university students' problematic Internet use is essential. This research investigates the predictive power of gender, feelings of inferiority, and irrational beliefs over problematic Internet use. This study's variables have been determined in light of the literature. In the literature, researchers have revealed being male (Bardak & Yalçınkaya-Alkar, 2016; Ceyhan, 2008; Durak-Batıgün & Kılıç, 2011; İkiz, Asıcı, Savcı, & Yörük, 2015; Koch & Pratarelli, 2004; Morahan-Martin & Schumacher, 2000; Sırakaya & Seferoğlu, 2013), a lack of social interest (Adler, 1951), and dysfunctional thoughts (Davis, 2001; Young, 2004) to relate to problematic Internet use. Based on the literature this study considers gender as an independent variable in the regression model and has determined feelings of inferiority to be an independent variable in reference to social interest and irrational beliefs regarding cognitive patterns in this regression model. With respect to the studies that have been carried out up to now, a limited amount of research is found on the relation between problematic Internet use and irrational beliefs, with no research on feelings of inferiority. As these variables have an important role in problematic Internet use, they need to be investigated in this research.

Method

This research is a descriptive study because it aims to reveal the current situation about problematic Internet use among university students.

Participants

The participants are comprised of 782 (63.6%) female and 447 (36.4%) male university students attending different faculties in Anadolu University during the 2016 spring semester. The participants' ages range from 18 to 33 years old, with a mean age of 21.30. With regard to participants' grade levels, 270 (21.5%) are freshmen, 421 (34.5%) are sophomores, 330 (27%) are juniors, and 208 (17%) are seniors.

Data Collection Instruments

This research utilizes the Problematic Internet Use Scale developed by Ceyhan et al. (2007), the Irrational Beliefs Test adapted to Turkish by Yurtal-Dinç (1999), and the Feelings of Inferiority Scale developed by Akdoğan (2012). In addition, information about the participants' demographic characteristics has been obtained by means of a personal data form.

Problematic Internet Use Scale (PIUS). The Problematic Internet Use Scale was developed by Ceyhan et al. (2007) in order to determine individuals' problematic Internet use behaviors. By means of an exploratory factor analysis, PIUS has been found to have a three-dimensional structure: negative consequences from the Internet, social benefit/comfort, and excessive use. The scale is a 5-point Likert-type scale composed of 33 items. Higher scores obtained from the scale indicate higher problematic Internet use. PIUS has been ascertained to positively relate to the Online Cognition Scale, Beck's Depression Inventory, and the UCLA Loneliness Scale (Ceyhan et al., 2007). PIUS has an internal consistency coefficient of .95 for the overall score, 0.94 for negative consequences from the Internet, 0.85 for social benefit/comfort, and 0.75 for excessive use (Ceyhan et al., 2007). PIUS's test-retest reliability coefficient has been found to be 0.81 ($p < .001$) after an analysis conducted over a four-week interval. These findings indicate PIUS to be valid and reliable.

Feelings of Inferiority Scale (FIS). The Feelings of Inferiority Scale was developed by Akdoğan (2012) with the aim of finding out about university students' feelings of inferiority. FIS is a 5-point Likert-type scale consisting of 20 items. Exploratory factor analysis results have shown the scale to have a three-dimensional structure: discouragement, negation of self-worth, and useless superiority effort. Higher scores obtained from the scale indicate higher feelings of inferiority. The FIS has been ascertained relate to the Short Symptom Inventory, Social Comparison Scale, and Coopersmith's Self-esteem Scale (Akdoğan & Ceyhan, 2014). FIS's internal consistency coefficient is .86 for the overall score, .80 for

discouragement, .71 for negation of self-worth, and .73 for useless superiority effort. The scale's test-retest reliability coefficient has been found to be .88 following an analysis made over a one-month interval (Akdoğan & Ceyhan, 2014).

Irrational Beliefs Test (IBT). The Irrational Beliefs Test was developed by Jones (1968) and adapted to Turkish by Yurtal-Dinç (1999). The IBT is a 5-point Likert-type scale containing 45 questions. Higher scale scores indicate higher levels of irrational beliefs (Yurtal-Dinç, 1999). Exploratory factor analysis shows the Irrational Beliefs Test to have eight subscales: need for approval, high expectations, inclination to blame, emotional irresponsibility, excessive anxiety, addiction, helplessness, and perfectionism (Yurtal-Dinç, 1999). The internal consistency reliability coefficient for the entire scale is .74. The internal consistency coefficients for the subscales range from .41 to .90. According to the test-retest analysis made over a 3-week interval, the correlation coefficient for the total scale score is .71. The test-retest correlation values for the subscales range from .46 to .82 (Yurtal-Dinç, 1999).

Personal data form. The researchers developed the personal data form utilized in this research to acquire demographic information about gender, grade level, and age.

Data Collection and Analysis

Approval from the Board of Ethics was first taken from the Rectorate of Anadolu University. Afterwards, the researcher visited the Faculties of Pharmacy, Education, Science, Law, Economics and Administrative Sciences, Communication Sciences, Architecture and Design, Engineering, Aeronautics and Astronautics, and Humanities. The instruments were applied on the sample of volunteer students during courses where the lecturers allowed the research to be conducted in class. Students were informed about the purpose of the study and how to fill out the research scales. Students were also told that no identifying information would be requested and the collected data would be kept confidential. The participant students filled the data set in approximately 20-25 minutes. The data collected in the research was analyzed by means of the package program IBM SPSS 21. The data have been analyzed through one-way analysis of variance (ANOVA), Pearson's correlation analysis, and a linear hierarchical regression analysis. Pairwise comparisons and Scheffe's test have indicated significant differences among the variables.

Findings

Descriptive Statistics

In the research, data from the Problematic Internet Use Scale, Feelings of Inferiority Scale, and Irrational Beliefs Test have been examined using descriptive statistics with the results shown in Table 1.

Table 1
Descriptive statistics for the research variables (N = 1,229)

| Variables | | Min. | Max. | M | SD | Skewness | Kurtosis |
|---------------------|---------------------------------------|------|------|--------|-------|----------|----------|
| PIUS Sub-dimensions | Negative Consequences of the Internet | 17 | 84 | 31.92 | 13.72 | 1.14 | .67 |
| | Social Benefit/Comfort | 10 | 48 | 19.98 | 8.22 | .91 | .15 |
| | Excessive Use | 6 | 30 | 19.06 | 4.84 | -.08 | -.34 |
| PIUS Total Score | | 33 | 149 | 70.96 | 23.49 | .83 | .07 |
| FIS Sub-dimensions | Discouragement | 8 | 40 | 21.76 | 5.82 | .16 | -.30 |
| | Negation of self-worth | 6 | 29 | 14.68 | 4.36 | .36 | -.21 |
| | Useless Superiority Effort | 6 | 30 | 18.59 | 4.54 | .01 | -.24 |
| FIS Total Score | | 20 | 93 | 55.03 | 12.29 | .10 | -.22 |
| IBT Sub-dimensions | Need for Approval | 7 | 30 | 18.24 | 4.08 | -.03 | -.32 |
| | High Expectations | 11 | 33 | 21.57 | 3.40 | .05 | .26 |
| | Inclination to Blame | 5 | 25 | 14.39 | 3.31 | .07 | .04 |
| | Emotional Irresponsibility | 8 | 38 | 21.02 | 4.59 | .11 | .27 |
| | Excessive Anxiety | 8 | 22 | 15.77 | 2.53 | -.13 | -.22 |
| | Addiction | 7 | 25 | 18.77 | 3.02 | -.31 | .12 |
| | Helplessness | 7 | 23 | 15.76 | 2.51 | .05 | .04 |
| | Perfectionism | 6 | 20 | 12.88 | 2.01 | .03 | .45 |
| IBT Total Score | | 100 | 184 | 138.39 | 11.37 | -0.09 | .44 |

The descriptive statistics in Table 1 show the skewness values to range from .01 to 1.14 and the kurtosis values to range from .04 to .67. The analysis results indicate the data to have normal distribution.

University Students' Problematic Internet Usage Levels

The distribution of participants' problematic Internet use levels is presented in Table 2. Accordingly, the lowest score on PIUS was 33 and the highest was 149, with a mean score of 70.96 and standard deviation of 23.49. Participants' scores in the first percentile are less than 53 whereas participants' mean score in the fourth percentile is greater than 84. Participants' scores in the second and third percentile range from 53 to 84. Although the highest possible score for PIUS is 165, the highest score in this research is 149.

Table 2
Distribution of university students' problematic Internet use levels (N = 1,229)

| Variables | | SD | Min | Max | 25% | 50% | 75% |
|---------------------|---------------------------------------|-------|-------|-----|-----|-----|-----|
| PIUS Sub-dimensions | Negative Consequences of the Internet | 31.92 | 13.72 | 17 | 84 | 21 | 28 |
| | Social Benefit/Comfort | 19.98 | 8.22 | 10 | 48 | 13 | 18 |
| | Excessive Use | 19.06 | 4.84 | 6 | 30 | 16 | 19 |
| PIUS Total Score | | 70.96 | 23.49 | 149 | 53 | 66 | 84 |

In light of the indicators seen in Table 2, the participants' total scores on PIUS can be stated as being low. This is also the case for the dimensions of negative consequences of the Internet and social benefit/comfort. Yet the participants' excessive use scores on PIUS are higher than the mean score for this sub-dimension. Accordingly, the participants can be said to have obtained moderate scores in the excessive use dimension.

Problematic Internet Use according to Internet Usage Purposes

ANOVA was utilized to determine whether university students’ problematic Internet use differs based on their purpose for using the Internet. Scheffe’s test, a pairwise comparison test, was performed over the variables found to differentiate as a result of the analysis. The results are presented in Table 3.

Table 3
Problematic Internet use according to purpose for using the Internet

| Purpose of Internet use | n | M | SD | Source of Variance | Sum of square | df | Mean square | F | Source of Difference | η ² effect size |
|-------------------------|-----|-------|-------|--------------------|---------------|-------|-------------|-------|-----------------------------------|----------------------------|
| Academic | 169 | 65.31 | 23.67 | Within group | 12,355.62 | 6 | 2,059.27 | 3.78* | Social media > academic activity; | .02 |
| E-mail | 30 | 71.13 | 18.53 | Between group | 663,142.8 | 1,217 | 544.9 | | game> academic activity | |
| Social media | 616 | 72.85 | 23.20 | Total | 675,498.4 | 1,223 | | | | |
| Film, series | 197 | 68.82 | 22.16 | | | | | | | |
| Information acquisition | 118 | 69.99 | 24.85 | | | | | | | |
| Meet new people | 57 | 71.42 | 24.23 | | | | | | | |
| Game | 37 | 81.03 | 27.22 | | | | | | | |

* $p < .05$. In order to receive information about the university students’ purposes of Internet use, they were asked to state the first three purposes of Internet use from among seven options (Doing research about academic activities or courses; Reading/writing e-mails; Using social media; Watching/listening to films, series, videos, music, etc.; Obtaining information/reading news/following new developments about extracurricular issues; Meeting new people; Playing games; Other). The first purpose stated by the university students was regarded as the main purpose of Internet use. The five students who selected “Other” were excluded from the analysis.

According to Table 3, university students’ problematic Internet use differs based on their purpose for using the Internet ($F_{(6, 1217)} = 3.78, p \leq .05$). Correspondingly, higher problematic Internet use levels are found for students using the Internet for social media and playing games than for those using the Internet for academic activities. However, the effect size in this difference is .02, and this result indicates a low-level effect size.

The Predictive Roles of Gender, Feelings of Inferiority and Irrational Beliefs on Problematic Internet Use

A linear hierarchical multiple regression analysis was made to reveal the predictive role of feelings of inferiority and irrational beliefs on problematic Internet use. Before the regression analysis, data were evaluated in terms of whether they meet the regression premises. In line with this, Mahalanobis distance was used to examine data’s compliance with the assumption of multivariable normality; no datum was found higher than the distance values ($\chi^2_{(12)} = 31.19, p \leq .001$). Next, the variables’ correlation, *VIF*, and tolerance values have been investigated to check for multicollinearity problems between variables. In this research, the variables’ *VIF* values are as follows: problematic Internet use (1.427), gender (1.104), discouragement (2.614), negation of self-worth

(1.997), useless superiority effort (1.673), need for approval (1.451), high expectations (1.243), inclination to blame (1.18), emotional irresponsibility (1.141), excessive anxiety (1.088), addiction (1.323), helplessness (1.18), and perfectionism (1.082). When examining variables' tolerance values, they are as follows: problematic Internet use (.70), gender (.89), discouragement (.36), negation of self-worth (.48), useless superiority effort (.59), need for approval (.68), high expectations (.39), inclination to blame (.43), emotional irresponsibility (.32), excessive anxiety (.63), addiction (.39), helplessness (.57), and perfectionism (.65). Independent variables' having *VIF* values less than 10 and tolerance values greater than .10 indicate no existence of multiple correlation problems (Çokluk, Şekercioğlu, & Büyüköztürk, 2012). Considering these indicators, normal distribution without multiple-correlation issues can be said to exist between the variables. Before doing the regression analysis, the variables' Pearson product-moment correlation coefficients were calculated in order to examine the relations among the variables. The results are given in Table 4.

Table 4
Relations among Feelings of Inferiority, Irrational Beliefs, and Problematic Internet Use Levels (N = 1,229)

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|-----------------------------|-------------------------------|-------|-------|--------|--------|-------|-------|--------|--------|-------|-------|-----|
| 1. Problematic Internet use | | | | | | | | | | | | |
| FIS | 2. Discouragement | .45** | - | | | | | | | | | |
| | 3. Negation of self-worth | .45** | .68** | - | | | | | | | | |
| | 4. Useless superiority effort | .26** | .53** | .37** | - | | | | | | | |
| | 5. Need for approval | .29** | .46** | .34** | .43** | - | | | | | | |
| IBT | 6. High expectations | .01 | .24** | .11** | .37** | .26** | - | | | | | |
| | 7. Inclination to blame | .24** | .24** | .18** | .24** | .20** | .09** | - | | | | |
| | 8. Emotional irresponsibility | .08** | -.05 | -.09** | -.12** | -.07* | .09** | -.16** | - | | | |
| | 9. Excessive anxiety | -.04 | .09** | .04 | .10** | .03 | .15** | -.02 | .09** | - | | |
| | 10. Addiction | .16** | .37** | .20** | .31** | .36** | .15** | .11** | -.15** | .12** | - | |
| | 11. Helplessness | .17** | .29** | .23** | .25** | .18** | .12** | .09** | -.01 | .20** | .25** | - |
| | 12. Perfectionism | .12** | .09** | .07* | .12** | .13** | -.05 | .08** | -.20** | .05* | .15** | .07 |

* $p \leq .05$, ** $p \leq .001$, FIS = Feelings of Inferiority Scale dimensions, IBT = Irrational Beliefs Scale dimensions

According to Table 4, correlation values range between .01 and .45. The variables of discouragement ($r = .45$, $p \leq .01$) and negation of self-worth ($r = .45$, $p \leq .01$) have the highest correlations with problematic Internet use. Furthermore, problematic Internet use positively and significantly relates to useless superiority effort ($r = .26$, $p \leq .01$), need for approval ($r = .29$, $p \leq .01$), inclination to blame ($r = .24$, $p \leq .01$),

addiction ($r = .16, p \leq .01$), helplessness ($r = .17, p \leq .01$), and perfectionism ($r = .12, p \leq .01$) while negatively and significantly relating to emotional irresponsibility ($r = -.08, p \leq .01$). The variables of high expectations ($r = .01, p \leq .01$) and excessive anxiety ($r = -.04, p \leq .01$) do not significantly relate to problematic Internet use.

In Table 4, correlation values between variables are lower than .70, which indicates no multicollinearity problem. Nevertheless, a minimum correlation of .30 must exist between the independent and dependent variables to be able to investigate the predictive relationships among variables (Pallant, 2004). In considering this, the variables of excessive anxiety and high expectations, which were found to not relate to problematic Internet use, have been chosen for exclusion from the regression analysis.

Linear hierarchical regression analysis has been performed to determine the predictors of problematic Internet use. Gender has been added to the first block of the analysis. The sub-dimensions from FIS (discouragement, negation of self-worth and useless superiority effort) have been added to the second block. The sub-dimensions from IBT (need for approval, inclination to blame, emotional irresponsibility, addiction, helplessness, and perfectionism) have been added to the third block. The findings from the results of the regression analysis are shown in Table 5.

Table 5
Gender, Feelings of Inferiority, and Irrational Beliefs as Predictors of Problematic Internet Use Levels (N = 1,229)

| Models | B | SD | β | t | Partial r | R ² | ΔR^2 | SD _e | F |
|----------------------------|-------|------|---------|--------|-----------|----------------|--------------|-----------------|----------|
| 1 (Constant) | 74.76 | 1.1 | | 67.77 | | | | | |
| Gender ¹ | -5.98 | 1.38 | -.12 | 4.32** | -.12 | .01 | .01 | 23.32 | 18.71** |
| 2 (Constant) | 28.11 | 2.82 | | 9.97 | | | | | |
| Gender ¹ | -6.27 | 1.21 | -.12 | 5.14** | -.14 | | | | |
| Discouragement | 1.19 | .15 | .29 | 7.95** | .22 | .26 | .25 | 20.18 | 109.74** |
| Negation of self-worth | 1.25 | .18 | .23 | 6.83** | .19 | | | | |
| Useless Superiority Effort | .12 | .15 | .02 | .84 | .02 | | | | |
| 3 (Constant) | 12.03 | 7.22 | | 1.66 | | | | | |
| Gender ¹ | -5.40 | 1.24 | -.11 | 4.33** | -.12 | | | | |
| Discouragement | 1.10 | .15 | .27 | 7.05** | .18 | | | | |
| Negation of self-worth | 1.23 | .18 | .22 | 6.68** | .18 | | | | |
| Useless Superiority Effort | .02 | .15 | .00 | .15 | .02 | | | | |
| Need for approval | .47 | .16 | .08 | 2.87* | .08 | .28 | .02 | 19.94 | 48.46** |
| Inclination to Blame | .67 | .18 | .09 | 3.63* | .10 | | | | |
| Emotional Irresponsibility | -.14 | .13 | -.02 | 1.10 | -.03 | | | | |
| Addiction | -.02 | .21 | -.00 | .11 | -.00 | | | | |
| Helplessness | .31 | .24 | .03 | 1.28 | .03 | | | | |
| Perfectionism | .73 | .29 | .06 | 2.50* | .07 | | | | |

* $p \leq .05$, ** $p \leq .001$ ¹ Codings of 0 = Male and 1 = Female have been made.

The regression model presented in Table 5 is statistically significant. According to this model, gender, discouragement, negation of self-worth, need for approval, inclination to blame, and perfectionism together explain 28% of the total variance in

problematic Internet use. The first block of the model shows gender to explain 1% of the total variance in problematic Internet use ($F = 18.71, p \leq .001$). In this research, male students' problematic Internet use levels ($M = 74.76, SD = 24.44$) are higher than females' ($M = 68.78, SD = 2.66; t_{(1,227)} = -4.32, p \leq .01$). Thus, gender significantly predicts problematic Internet use in favor of males ($\beta = -.12, p \leq .001$).

In the second block of the model, gender and the sub-dimensions from FIS (discouragement, negation of self-worth, and useless superiority effort) together explain 26% of the total variance in problematic Internet use ($F = 109.74, p \leq .001$). Table 5 shows the sub-dimensions of discouragement ($\beta = .29, p \leq .001$) and negation of self-worth ($\beta = .23, p \leq .001$) together to make a significant contribution to the model while the sub-dimension of useless superiority effort makes no significant contribution ($\beta = .02, p > .05$). Therefore, discouragement, negation of self-worth, and gender together significantly predict problematic Internet use.

In the third block of the model, gender, the sub-dimensions from FIS, and the sub-dimensions from IBT explain 28% of the total variance in problematic Internet use ($F = 52.61, p \leq .001$). The dimensions of need for approval ($\beta = .08, p \leq .05$), inclination to blame ($\beta = .09, p \leq .05$), and perfectionism ($\beta = .06, p \leq .05$) from IBT have been determined to make a significant contribution to the model. However, the dimensions of emotional irresponsibility ($\beta = -.02, p > .05$), addiction ($\beta = -.00, p > .05$) and helplessness ($\beta = .03, p > .05$) make no significant contribution to the model. Thus, gender, discouragement, negation of self-worth, need for approval, inclination to blame, and perfectionism together significantly predict problematic Internet use.

In the model, the sub-dimensions of discouragement and negation of self-worth from FIS are the strongest variables predicting problematic Internet use. These variables together explain 25% of problematic Internet use. The sub-dimensions from IBT make the second highest contribution to the model. Hence need for approval, inclination to blame, and perfectionism together explain 2% of the total variance in problematic Internet use. The variable of gender contributes the least to the model. Accordingly, being male explains 1% of the total variance in problematic Internet use.

The Predictive Role of Feelings of Inferiority and Irrational Beliefs on Problematic Internet Use According to Gender

This study has investigated the predictive power of feelings of inferiority and irrational beliefs on problematic Internet use separately among female and male participants. For this purpose, the relation between variables has been revealed using correlation analyses for the data from female and male participants.

For female participants, the correlation analysis shows problematic Internet use to positively relate to negation of self-worth ($r = .45, p \leq .01$), discouragement ($r = .47, p \leq .01$), useless superiority effort ($r = .27, p \leq .01$), need for approval ($r = .33, p \leq .01$), inclination to blame ($r = .27, p \leq .01$), addiction ($r = .21, p \leq .01$), helplessness ($r = .23, p \leq .01$), and perfectionism ($r = .13, p \leq .01$) while negatively relating to emotional irresponsibility ($r = .08, p \leq .01$). The variables of high expectation ($r = .02, p \leq .01$) and excessive anxiety ($r = .00, p \leq .01$) do not significantly relate to problematic Internet use.

For male participants, the correlation analysis shows problematic Internet use to positively relate to negation of self-worth ($r = .44, p \leq .01$), discouragement ($r = .47, p \leq .01$), useless superiority effort ($r = .26, p \leq .01$), need for approval ($r = .23, p \leq .01$), inclination to blame ($r = .13, p \leq .01$), addiction ($r = .13, p \leq .01$), helplessness ($r = .10, p \leq .01$), and perfectionism ($r = .09, p \leq .01$). The variables of emotional irresponsibility ($r = .07, p \leq .01$), high expectation ($r = .07, p \leq .01$), and excessive anxiety ($r = .00, p \leq .01$) do not significantly relate to problematic Internet use.

First a linear hierarchical regression analysis has been made to determine the predictors of problematic Internet use among female participants. The sub-dimensions from FIS (discouragement, negation of self-worth, and useless superiority effort) have been added to the first block, and the sub-dimensions from IBT (need for approval, inclination to blame, emotional irresponsibility, addiction, helplessness, and perfectionism) have been added to the second block. The findings from the results of the regression analysis are shown in Table 6.

Table 6
Feelings of Inferiority and Irrational Beliefs as Predictors of Problematic Internet Use Levels (n = 782)

| Models | B | SD | β | t | Partial r | R ² | ΔR^2 | SD _r | F |
|----------------------------|-------|------|---------|--------|-----------|----------------|--------------|-----------------|---------|
| 1 (Constant) | 23.51 | 3.31 | | 7.08 | | | | | |
| Discouragement | 1.12 | .18 | .28 | 5.99** | .21 | .25 | .25 | 19.61 | 88.16** |
| Negation of self-worth | 1.27 | .22 | .24 | 5.57** | .19 | | | | |
| Useless Superiority Effort | .10 | .18 | .02 | .57 | .02 | | | | |
| 2 (Constant) | 7.26 | 8.68 | | .83 | | | | | |
| Discouragement | .87 | .19 | .22 | 4.55** | .16 | .29 | .04 | 19.10 | 36.33** |
| Negation of self-worth | 1.18 | .22 | .22 | 5.23** | .18 | | | | |
| Useless Superiority Effort | -.29 | .19 | -.05 | 1.51 | -.05 | | | | |
| Need for approval | .58 | .20 | .10 | 2.87* | .10 | | | | |
| Inclination to Blame | .93 | .22 | .13 | 4.10** | .14 | | | | |
| Emotional Irresponsibility | -.10 | .15 | -.02 | .66 | -.02 | | | | |
| Addiction | -.06 | .26 | .00 | .23 | .00 | | | | |
| Helplessness | .63 | .30 | .06 | 2.09* | .07 | | | | |
| Perfectionism | .95 | .35 | .08 | 2.67* | .09 | | | | |

* $p \leq .05$, ** $p \leq .001$.

The regression model presented in Table 6 is statistically significant. According to this model, discouragement, negation of self-worth, need for approval, inclination to

blame, and perfectionism together explain 29% of the total variance in problematic Internet use. The first block of the model shows the two sub-dimensions from FIS (discouragement and negation of self-worth) to together explain 25% of the total variance in problematic Internet use ($F = 88.16, p \leq .001$).

In the second block of the model, the sub-dimensions from FIS and the sub-dimensions from IBT explain 29% of the total variance in problematic Internet use ($F = 36.33, p \leq .001$). The IBT sub-dimensions of need for approval ($\beta = .10, p \leq .05$), inclination to blame ($\beta = .13, p \leq .05$), helplessness ($\beta = .06, p \leq .05$), and perfectionism ($\beta = .08, p \leq .05$) significantly contribute to the model. However, the dimensions of emotional irresponsibility ($\beta = -.02, p > .05$) and addiction ($\beta = .00, p > .05$) do not significantly contribute to the model. Thus, discouragement, negation of self-worth, need for approval, inclination to blame, helplessness, and perfectionism together significantly predict problematic Internet use among female participants.

In this model, the FIS sub-dimensions of discouragement and negation of self-worth are the strongest variables predicting problematic Internet use. These variables together explain 25% of problematic Internet use. The sub-dimensions from IBT make the second highest contribution to the model. Hence, need for approval, inclination to blame, helplessness, and perfectionism together explain 4% of the total variance in problematic Internet use.

When examining male participants, a linear hierarchical regression analysis has been made to determine the predictors of problematic Internet, also using the same model. For this purpose, the FIS sub-dimensions (discouragement, negation of self-worth, and useless superiority effort) have been added to the first block and the IBT

Table 7
Feelings of Inferiority and Irrational Beliefs as Predictors of Problematic Internet Use Levels (n = 447)

| <i>Models</i> | <i>B</i> | <i>Standard error</i> | <i>β</i> | <i>t</i> | <i>Partial r</i> | <i>R²</i> | <i>ΔR^2</i> | <i>Standard error R</i> | <i>F</i> |
|----------------------------|----------|-----------------------|---------------------------|----------|------------------|----------------------|--------------------------------|-------------------------|----------|
| 1 (Constant) | 25.23 | 4.72 | | 5.34 | | | | | |
| Discouragement | 1.31 | .25 | .31 | 5.21** | .24 | .25 | .25 | 21.19 | 49.91** |
| Negation of self-worth | 1.23 | .31 | .24 | 3.97** | .18 | | | | |
| Useless Superiority Effort | .16 | .24 | .03 | .65 | .03 | | | | |
| 2 (Constant) | 31.62 | 12.48 | | 2.53 | | | | | |
| Discouragement | 1.37 | .27 | .32 | 5.02** | .23 | | | | |
| Negation of self-worth | 1.17 | .31 | .20 | 3.70** | .17 | | | | |
| Useless Superiority Effort | .11 | .26 | .02 | .45 | .02 | | | | |
| Need for approval | .24 | .29 | .04 | .84 | .04 | .25 | .00 | 21.24 | 16.98** |
| Inclination to Blame | .15 | .32 | .02 | .48 | .02 | | | | |
| Addiction | -.50 | .37 | -.06 | 1.37 | -.06 | | | | |
| Helplessness | -.11 | .41 | -.01 | .27 | .01 | | | | |
| Perfectionism | .21 | .51 | .01 | .41 | .02 | | | | |

* $p \leq .05$, ** $p \leq .001$.

sub-dimensions (need for approval, inclination to blame, emotional irresponsibility, addiction, helplessness, and perfectionism) to the second block. The findings for male participants are shown in Table 7.

The regression model presented in Table 7 is statistically significant. According to this model, discouragement and negation of self-worth explain 25% of the total variance in problematic Internet use. However, irrational beliefs do not contribute to the male participants' problematic Internet use. The first block of the model shows the two FIS sub-dimensions (discouragement and negation of self-worth) to together explain 25% of the total variance in problematic Internet use ($F = 49.91, p \leq .001$). In the second block, the IBT sub-dimensions were added to the model and the ITB sub-dimensions have been determined to play no significant role in problematic Internet use ($F = 16.98, p \leq .001$). As a result, discouragement and negation of self-worth together are the single strongest predictors of problematic Internet use among male participants.

Discussion

Discussion on University Students' Levels of Problematic Internet Use

This research has ascertained the total scores that university students obtained on PIUS to be low. This result is consistent with other studies, which have revealed university students to have low problematic Internet use (Sirakaya & Seferoğlu, 2013; Tutgun, 2009; Yıldız, 2010). Problematic Internet use closely relates to individuals' general mental health as researchers have stated that having more than one psychological disorder at the same time relates to problematic Internet use (Shapira et al., 2000). In addition, depression (Tunalıoğlu, 2013), neuroticism (Durak-Batıgün & Kılıç, 2011), and antisocial tendencies (Ceyhan & Ceyhan, 2007) have been determined to predict problematic Internet use. As the participants of this study have been considered as a non-pathological group, their levels of problematic Internet use are expected to be low.

In this research, university students also obtained low scores on the PIUS sub-dimensions of negative consequences and social benefit/comfort. On the other hand, they obtained relatively high scores on the sub-dimension of excessive use. These findings indicate that, in spite of university students' relatively high duration of Internet use in this research, they protect themselves from the negative results of the Internet. This finding may closely relate to the fact that university students are encouraged to carry out necessary activities such as registration, citizenship procedures, access to announcements in campus, forming online course groups, doing homework, and literature review through the Internet in university life (Keser-Özcan, 2004; Keser-Özcan & Buzlu, 2007; Üçkardeş, 2010).

The Internet has led to the formation of a universal culture and social environment open to everyone and enables individuals with different characteristics to interact (Oral, 2005; Yalçın, 2003). Owing to these qualities of the Internet, the Internet can be stated as being a technological innovation that expands horizons. As is known, the purpose of technological innovations is to make individuals' lives easier and to serve to improve their lives. In addition to individuals' development, the Internet is a tool that mediates the adoption of values such as recognizing, understanding, and accepting differences. In other words, using the Internet can be said to be a requirement for adapting to the new era. In this context, studies may be needed on raising awareness of using Internet in line with its purposes as opposed to measures that prevent or limit university students' Internet use. Regarding awareness-raising studies, focusing on allowing individuals to acquire the skills of using Internet in line with its purposes at a moderate level by considering the consequences of behaviors may be beneficial.

Discussion on Problematic Internet Use According to Internet Usage Purposes

The findings of this research point out that the university students' problematic Internet use differentiates based on the purposes of Internet use. Findings suggest that the problematic Internet use levels of the students who use Internet for social media and playing games are higher than that of those who use Internet for academic activities. This finding is similar with the findings of some research in the literature (Ceyhan, 2008; Leung & Lee, 2012; Morahan-Martin & Schumacher, 2000; Tahiroğlu et al., 2008). University students perform academic activities such as doing homework, reading article and doing research in order to meet the expectations related to courses or homework. To put it another way, university students, by necessity, use Internet for academic purposes, and when they complete the assigned task, they stop using Internet for academic purposes. This situation implies that the Internet use for academic purposes is limited and it is less likely to turn out to be excessive use. Because university students who use Internet for academic purposes do not show excessive use, their problematic Internet use levels may be low. Furthermore, online environment, created to meet the academic needs such as doing homework, doing research or reading publications, is mostly exempt from threats such as cyber-attack, risky relationships, and electronic fraud and provides secure services, so that it may reduce the risk of problematic Internet use.

Discussion Related with Predictive Role of Gender, Feelings of Inferiority and Irrational Feelings on the Problematic Internet Use

This research has found the variables of gender, discouragement, negation of self-worth, inclination to blame, and perfectionism to significantly predict problematic Internet use and these variables to explain 28% of the total variance in problematic

Internet use. Meanwhile, the variables of useless superiority effort, emotional irresponsibility, addiction, and helplessness have not been found to significantly predict university students' problematic Internet use. The findings of this research set forth the strongest predictors of problematic Internet use as discouragement and negation of self-worth from the sub-dimensions of the Feelings of Inferiority Scale (FIS). This finding denotes discouragement and negation of self-worth to have a significant role in university students' problematic Internet use. The literature has no research directly investigating the relationship between feelings of inferiority and problematic Internet use. Hence this finding has been discussed under the theoretical explanations of feelings of inferiority.

This research has revealed negation of self-worth and discouragement from FIS's sub-dimensions to play the biggest role in explaining problematic Internet use, though the participants had low levels of problematic Internet use. These dimensions together explain 25% of the total variance in problematic Internet use and are the most significant predictive factors in the regression model. Feelings of inferiority motivate university students to fulfill developmental tasks as soon as possible. University students' main developmental tasks are to establish close relationships, establish romantic relationships, and achieve career-related responsibilities. For this reason, they spend time and energy performing activities in these fields. When they are successful and approved for their behaviors in these fields, they believe they are competent (Sarı, Yenigün, Altıncı, & Öztürk, 2011). Currently the young generation prevalently uses the opportunities provided on the Internet, and these opportunities have introduced individuals to actions that make them appear strong. Young individuals discover that they have authority on the Internet; as such, they prefer the cyber world, where they feel better psychologically compared to actions that cause them to question their competencies in daily life (Caplan, 2005). Those who *negate self-worth* and *are discouraged*, especially in face-to-face relations, tend to get satisfaction through the Internet; as such, problematic Internet use emerges (Suler, 1999). In this context, one can say that university students with high feelings of inferiority about developmental tasks try to gain social benefit by participating in online settings where they can prevail, thus having problematic Internet use.

Self-determination theory emphasizes that individuals are in need of "relatedness." This theory suggests that individuals need to connect with those they interact with in social environments. With the aim of meeting this need, they make efforts to be a member of a club, religion, or political party (Sarı et al., 2011). University students who cannot join a group in social life and do not feel belongingness can be claimed to show a high rate of discouragement and negation of self-worth. These students may have problematic Internet use due to the fact that they tend to meet their needs for belonging and acceptance on the Internet. Similarly, Corey (2008) also mentioned that many psychological problems begin for individuals when they are rejected by

those they value. From this point of view, as individuals are not accepted in social settings, they have anxiety problems based on feelings of insecurity and unworthiness. This situation causes those who are not accepted in face-to-face relations and who are unable to meet the need for attachment to begin a search for online attachment. In other words, those who cannot deal with socialization problems in face-to-face relations prefer the Internet setting in order to eliminate loneliness and escape from responsibilities (Caplan, 2005; Davis, 2001). These tendencies may lead individuals to spend a lot of time on the Internet and to have problematic Internet use. This research's finding that FIS's sub-dimensions of discouragement and negation of self-worth dimensions predict problematic Internet use is consistent with the theoretical explanations for feelings of inferiority. Nevertheless, the fact that *useless superiority effort*, another sub-dimension of FIS, does not have a predictive role in problematic Internet use is inconsistent with theoretical explanations.

Useless superiority effort is an unhealthy coping strategy used by the individuals who are unaware of feeling inferior (Adler, 1956). Based on this definition, individuals who make useless superiority effort can be said to have low awareness and to deviate from the norm. Useless superiority effort's non-prediction of problematic Internet use may be explained by the participants' low levels of unhealthy patterns in this study. Likewise, the low levels of problematic Internet use by most participants in this research imply that different results could be obtained in groups with high levels of problematic Internet use.

According to this research's findings, IBT's sub-dimensions of need for approval, inclination to blame, and perfectionism predict university students' problematic Internet use. Irrational beliefs emerge as a result of individuals' constant demands on themselves and from their environments. Because these beliefs result in resistance to change, they prevent individuals from being happy and having a functional lifestyle (Çivitçi et al., 2014). Irrational beliefs cause individuals to develop incorrect thoughts. Then these incorrect thoughts lead individuals to show problematic behaviors (Türkçapar, 2012). One of these behaviors is problematic Internet use (Davis, 2001).

This research has determined *need for approval*, a sub-dimension of IBT, to significantly predict problematic Internet use. Need for approval is defined as an individual's need for being accepted, appreciated, and loved by others. Need for approval is the basic purpose of life for individuals (Yurtal-Dinç, 1999). When those who need approval feel threatened or unsafe, they need settings in which to relax and people to approve them (Bebek, 2012). Some university students whose behaviors or thoughts are not accepted in social settings and who have problems with interpersonal relations may incline towards online virtual relations to meet the need for approval. The Internet gives young people the opportunity to receive love and attract others' attention. Those with a high need for approval try to satisfy the need to

be liked, known, and approved by others by means of sharing their photos, videos, or comments on the Internet. Such activities on the Internet provide satisfaction, which increases the possibility of accessing the Internet again (Siyez, 2015). That is to say, those who socially interact more comfortably on the Internet (Yıldız, 2010) and meet the need for approval through Internet activities (Durak-Batigün and Hasta, 2010) are stated to have problematic Internet use levels. This is consistent with the research finding that the need for approval predicts problematic Internet use.

This research has revealed *inclination to blame*, an IBT sub-dimension, to significantly predict problematic Internet use. This finding parallels the idea that those who experience problems in interpersonal relations are inclined towards the Internet setting as a way of coping with problems (Kandell, 1998). Inclination to blame is defined as the case in which one believes others to be bad, evil, and useless and is intolerant of one's own mistakes (Yurtal-Dinç, 1999). Individuals who strongly believe that others are bad and evil can be said to inevitably experience problems in interpersonal relations. Kandell (1998) proposes that those who have problems in interpersonal relations are inclined to Internet activities in order to move away from or postpone these problems. When university students in need of intimacy cannot meet this need, they turn towards activities such as virtual relationships, games, sex, and gambling to compensate for loneliness. These activities increase problematic Internet use (Yıldız, 2010).

This research has reported *perfectionism*, an IBT sub-dimension, to significantly predict problematic Internet use. Perfectionism reflects the belief that perfect solutions must always exist (Yurtal-Dinç, 1999). Because real life does not always give the opportunity to find perfect solutions, perfectionists may have psychological problems such as depression, anxiety (Hewitt & Flett, 1991), and obsessive-compulsive disorders (McFall & Wollersheim, 1979). This situation damages the perfectionist's social relations and harmony with others (Gökçakan, 2005). Thus, these individuals see the Internet as a way of escaping from problems in daily relations and tend to cope with negative feelings by means of spending time on the Internet (Beard & Wolf, 2001). In light of these explanations, university students who expect everything to be perfect can be mentioned as having problematic Internet use because of the adaptation difficulties resulting from perfectionism. In the research, IBT's sub-dimensions of *need for approval*, *inclination to blame*, and *perfectionism* together explain 2% of the total variance; as such irrational beliefs follow feelings of inferiority and have ranked second in the regression model. However, IBT's sub-dimensions of *emotional irresponsibility*, *addiction*, and *helplessness* have not been found to predict problematic Internet use.

Emotional irresponsibility is defined as the case where an individual looks for sources to one's problems outside oneself (Yurtal-Dinç, 1999) and does not take responsibility

for the results of one's behaviors (Stebbins & Pakenham, 2001). However, when examining studies on emotional irresponsibility, the results are seen to be inconsistent with each other. For example, research has set forth emotional irresponsibility as not being related to psychological symptoms (somatization, obsessive-compulsive disorder, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychosis; Stebbins & Pakenham, 2001), while other research has revealed individuals with high levels of depression to have high levels of emotional irresponsibility (Taghavi, Goodarzi, Kezami, & Ghorbani, 2006). This situation makes it difficult to explain the relationship of emotional irresponsibility with mental health disorders and behavioral problems. Therefore, a need for other studies can be said to exist in order to be able to explain the relation between emotional irresponsibility and problematic Internet use.

Addiction, an IBT sub-dimension, has been described as an individual being dependent on others and receiving support from someone stronger (Yurtal-Dinç, 1999). A review of the research findings in the literature shows a positive relationship to exist between Internet addiction and friendship addiction (Büyükaşahin-Çevik & Çelikkaleli, 2010). One of the five types of Internet addiction is cyber-relationship addiction. Cyber-relationship addiction includes chatting in chat rooms or porn sites and having friends on the Internet (Soule, Sheel, & Clean, 2003). This indicates that a relation may exist between addiction and using the Internet at an addictive level. Nonetheless, some researchers have put forth Internet addiction as a concept signifying pathologic Internet use and thus investigating Internet addiction in normal individuals is inappropriate (Caplan, 2003; Davis, 2001; Dinicola, 2004). In consideration of this, the problematic Internet use scale has been used in this research in place of the Internet addiction scale. Namely, by taking into account that the scope of this research and the characteristics of its participants are limited to non-pathological Internet use, the fact that no relation exists between addiction and problematic Internet use is an expected result.

Helplessness, an IBT sub-dimension, is the belief that mistakes made in the past cannot be recovered from (Yurtal-Dinç, 1999). University students are expected to leave childhood behind and adopt adult roles. Young people in a transitional period face many problems. When they experience learned helplessness, rather than trying to cope with these problems they begin to have psychological problems such as depression. University students try to forget their problems on the Internet while trying to deal with their psychological problems (Yang & Tung, 2007). Given these explanations, helplessness predicting problematic Internet use is foreseeable. However, the current research finding has stated helplessness to not predict problematic Internet use. This situation may result from the inadequate number of observations, and this result may be caused by the low number of students with high levels of helplessness not having the opportunity to be observed an adequate number of times for prediction. This implies that

the relation between helplessness and problematic Internet use should be reinvestigated over another group that is considered to have high levels of helplessness.

Another variable in this research predicting problematic Internet use is *gender*. Gender explains 1% of the total variance in problematic Internet use and has ranked third in the research's regression model. This research asserts males' problematic Internet use levels to be higher than females'. This finding is consistent with findings from research that has revealed males' problematic Internet use levels to be higher than females' (Bardak & Yalçinkaya-Alkar, 2016; Ceyhan, 2008; Durak-Batıgün & Kılıç, 2011; İkiz, Asıcı, Savcı, & Yörük, 2015; Keser-Özcan & Buzlu, 2007; Koch & Pratarelli, 2004; Morahan-Martin & Schumacher, 2000; Odacı & Kalkan, 2010; Sırakaya & Seferoğlu, 2013; Tutgun, 2009). Nonetheless, the current research finding is not consistent with findings from other research that has found females' problematic Internet use levels to be higher than males' (Odacı & Berber-Çelik, 2011) or no significant relation to exist between problematic Internet use and gender (Balcı & Gülnar, 2009; Ceyhan, 2011; Odacı, 2011). According to data from the Turkish Statistical Institute (2015), females' Internet use is at 68.9% whereas males' is at 85.1%. Males' problematic Internet use levels are considered higher possibly because Internet use is more common among males. In addition, males may have higher levels of problematic Internet use due to factors such as male students being more interested in activities on the Internet (Morahan-Martin & Schumacher, 2000; Yıldız, 2010), more easily accessing the Internet in different ways such as Internet cafes compared to females, enjoying computer games more (Özer, 2013), and using the Internet for sexuality-related reasons (Morahan-Martin & Schumacher, 2000).

Discussion Related to the Predictive Role of gender, Feelings of Inferiority, and Irrational Feelings on Problematic Internet Use

This research has separately investigated the predictive role of feelings of inferiority and irrational beliefs with gender. For this purpose, data from female and male participants was examined sequentially in the regression analysis using the same hierarchical model. As a result of these two hierarchical regression analyses, the two FIS sub-dimensions (discouragement and negation of self-worth) were found to explain 25% of the total variance in problematic Internet use for each gender. However, these regression analyses revealed irrational beliefs to not significantly predict male participants' problematic Internet use while significantly contributing to the female participants' problematic Internet use. Hence need for approval, inclination to blame, helplessness, and perfectionism together explain 4% of the total variance in the female participants' problematic Internet use. This finding shows a significant difference in terms of irrational beliefs to exist between male and female participants' problematic Internet use.

The literature has different cognitive theories about the role of irrational beliefs on problematic Internet use. Based on these theories, irrational beliefs have been expected to contribute more to problematic Internet use in this research. However, this study's findings have shown irrational beliefs to have no significant role in problematic Internet use for male participants and to have a slightly significant role for female participants. Thus in future studies, the role of irrational beliefs on problematic Internet use needs to be investigated with different instruments or research designs.

On the other hand, previous studies have revealed the irrational beliefs levels of female groups to be higher than male groups' (Amutio & Smith, 2008; Turner et al., 2018; Wiseman & Watt, 2004; Woodward, Carless, & Findlay, 2001). Irrational beliefs form beginning in infancy within the context of social circles. Throughout life, one's social circle expands and puts some unrealistic expectations on individuals. In this process, individuals need to meet the unrealistic expectations of their social circle in order to be accepted and approved (Flett, Besser, & Hewitt, 2005). Unrealistic expectations from social circles have been emphasized to have more pressure on females than males, and this pressure makes developing an authentic self more difficult for females (McBride, 1990). In this context, female participants can be said to have high levels of need for approval, inclination to blame, and perfectionism based on the difficulties they have compared to males in presenting themselves as authentic. Because of these irrational patterns, female students may seek acceptance and approval in online activities by using the Internet problematically.

Limitations, Conclusions, and Recommendations

The results of this research reveal university students to display problematic Internet use, though at low levels. Therefore, a need can be mentioned for studies on raising university students' awareness of problematic Internet use in campuses. The fact that male students have higher scores for problematic Internet use indicates the different patterns for males must also be addressed in preventive studies.

Individuals acquire Internet use behaviors at an early age; as such, prevention studies should be conducted during the period when individuals start school. Considering that using social media and spending time playing Internet games currently begin at an early age, carry out educational studies is important on the purposes of Internet use and healthy Internet use beginning from the preschool period up to college.

Discouragement and negation of self-worth are the most significant predictors of problematic Internet use in this research. These variables are FIS sub-dimensions. Because feelings of inferiority are shaped during early childhood, having school psychological counselors be included in studies on self-confidence, social interest, and self-efficacy may be beneficial in the scope of guidance and psychological counseling services.

University students' irrational beliefs also lead to problematic Internet use. Psychological counselors in university counseling centers may work on university students' irrational beliefs in the framework of cognitive approaches, which corresponds to an intervention method, and while working with youths who have problematic Internet use. In order to prevent university students from perceiving Internet as a place to escape from problems, allowing university students to acquire problem-solving skills is essential.

This research is limited to university students' problematic Internet use. Examining the literature has shown Internet use and problematic Internet use to have been mostly investigated over adolescents and young adults. Taking into account that individuals from all age groups use the Internet due to current technological developments, adults' and the elderly's Internet use and problematic Internet use should also be investigated. Moreover, quantitative research methods have generally been used in the research. Thus, investigating the relationships among the variables of irrational beliefs, feelings of inferiority, and problematic Internet use using qualitative research techniques such as observations and interviews may provide in-depth information about university students' problematic Internet use.

This research has revealed the predictive role of feelings of inferiority and irrational feelings on problematic Internet use. In view of these findings, experimental studies can be conducted on group psychological counseling for students' feelings of inferiority and irrational beliefs.

Acknowledgements

- The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.
- This research was supported by Anadolu University Scientific Research Project Fund.

References

- Adler, A. (1956). *The individual psychology of Adler: A systematic presentation in selections from his writings* (H. L. Ansbacher & R. R. Ansbacher, Eds., pp. 126–154.), New York, NY: Harper Torchbooks.
- Akdoğan, R. (2012). *Adleriyen yaklaşıma dayalı grupla psikolojik danışmanın üniversite öğrencilerinin yetersizlik duygusu ve psikolojik belirti düzeylerine etkisi* [The effect of Adlerian based group counseling on inferiority feeling of university students] (Doctoral dissertation, Anadolu University, Eskişehir, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Akdoğan, R., & E. Ceyhan. (2014). Üniversite Öğrencileri İçin Yetersizlik Duygusu Ölçeğinin geliştirilmesi: Geçerlik ve güvenilirlik analizleri [Development of Inferiority Feelings Scale for University Students]. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 5(41), 117–128.

- Amutio, A., & Smith, J. (2008). Stress and irrational beliefs in college students. *Ansiedad Estres, 14*(2-3), 211-220.
- Anderson, K. J. (2001). Internet use among college students: An exploratory study. *Journal of American College Health, 50*(1), 21-26.
- Balci, Ş., & Gülnar, B. (2009). Üniversite öğrencileri arasında internet bağımlılığı ve internet bağımlılarının profili [Internet use and satisfaction among university students]. *Selçuk İletişim, 6*(1), 5-22.
- Bardak, F., & Yalçınkaya-Alkar, Ö. (2016). Üniversite öğrencilerinin sosyal ağları kullanım amaçlarına göre internet bağımlılığı ve yalnızlık düzeyleri arasındaki ilişkinin incelenmesi [Investigation of Internet addiction and loneliness in scope of social media use purposes]. *Bağımlılık Dergisi, 17*(2), 55-65.
- Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for internet addiction. *Cyber Psychology & Behavior, 4*(3), 377-383.
- Bebek, H. (2012). Onay Bağımlılığı Ölçeği'nin geçerlilik ve güvenilirlik çalışması [Psychometric Properties of acceptance addiction scale]. *NP Akademi, 1*, 30-35.
- Büyükhahin-Çevik, U., & Çelikkaleli, Y. (2010). Ergenlerin arkadaş bağımlılığı ve internet bağımlılığının cinsiyet, ebeveyn tutumu ve anne baba eğitim düzeylerine göre incelenmesi [Investigation of adolescents' peer dependency according to gender, parenting style and parent's education level]. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 19*(3), 225-240.
- Çakır, H. (2007). Geleneksel gazetecilik karşısında internet gazeteciliği [Traditional journalism vs Internet journalism]. *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 22*(1), 123-149.
- Caplan, S. E. (2003). Preference for online social interaction: A theory of problematic internet use and psychosocial well-being. *Communication Research, 30*, 625-648.
- Caplan, S. E. (2005). A social skill account of problematic internet use. *Journal of Communication, 55*(4), 721-736.
- Ceyhan, A. A. & Ceyhan E. (2007, September). Üniversite öğrencilerinin problemleri internet kullanım düzeyleri ile denetim odağı, antisosyal eğilim ve sosyal normlara uyum düzeyleri arasındaki ilişkiler [Relationships between problematic internet use, locus of control, antisocial tendency and level of adapting to social norms]. Paper presented at 16. Ulusal Eğitim Bilimleri Kongresi, Gaziosmanpaşa University, Tokat, Turkey.
- Ceyhan, A. A. (2008). Predictors of problematic internet use on Turkish university students. *Cyber Psychology & Behavior, 11*(3), 363-366.
- Ceyhan, A. A. (2011). İnternet kullanma temel nedenlerine göre üniversite öğrencilerinin problemleri internet kullanımı ve algıladıkları iletişim beceri düzeyleri [Problematic internet use and perceived communication skills levels of university students in terms of basic internet use purposes]. *Kuram ve Uygulamada Eğitim Bilimleri, 11*, 59-77.
- Ceyhan, E., Ceyhan, A. A., & Gürcan, A. (2007). The validity and reliability of the problematic Internet usage scale. *Educational Sciences: Theory & Practice, 7*(1), 411-416.
- Çivitçi, A., Türküm, S., Duy, B., & Hamamcı Z. (2014). *Okullarda akılcı-duygusal davranış terapisine dayalı uygulamalar* [Rational emotional behavioral therapy based implemetations at schools]. Ankara, Turkey: Pegem Yayıncılık.
- Corey, G. (2008). *Psikolojik danışma, psikoterapi kuram ve uygulamaları* [Theories and Implemetations of Counseling and Psychotherapy] (T. Ergene, Trans.). Ankara, Turkey: Mentis Yayıncılık.

- Cumurcu, E. B., & Kaya, B. (2004). Trikotilomani, cilt yolma bozukluğu ve patolojik internet kullanımı olan bir olgu [A Case with trichotillomania, psychogenic excoriation and pathological Internet use]. *Klinik Psikiyatri*, 7, 127–131.
- Davis, R. A. (2001). A cognitive-behavioral model of pathological internet use. *Computers in Human Behavior*, 17, 187–195.
- Dinicola, M. D. (2004). *Pathological internet use among college students: The prevalence of pathological internet use and its correlates* (Doctoral dissertation, Ohio University, Ohio).
- Doruk, D. (2007). Öğrenme isteksizliğinin internet kullanımıyla ilişkilendirilmesi (ergen boyutunda) [Relationsp between learning reluctance and problematic internet use among adolescent] (Master's thesis, Beykent Universty, İstanbul, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Durak-Batıgün, A., & Hasta, D. (2010). İnternet bağımlılığı: Yalnızlık ve kişilerarası ilişki tarzları açısından bir değerlendirme [Internet addiction: An evaluation in the perspective of loneliness and interpersonal relations styles]. *Anadolu Psikiyatri Dergisi*, 11(3), 213–219.
- Durak-Batıgün, A., & Kılıç, N. (2011). İnternet bağımlılığı: Kişilik özellikleri, psikolojik belirtiler, sosyal destek ve ilişkili bazı sosyo-demografik değişkenler arasındaki ilişkiler [Internet addiction: Relationships between personality, psychological symptoms, social support and socio-demographical variables]. *Türk Psikoloji Dergisi*, 26(67), 1–10.
- Gökçakan, N. (2005). Bir obsesif-kompulsif bozukluk vakasında bilişsel davranışçı terapi uygulaması [An implantation of cognitive behavioral therapy on a case of obsessif compulsive disorder]. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 1(1), 81–90.
- Gönül A. S. (2002). Patolojik internet kullanımı (İnternet bağımlılığı/kötüye kullanımı) [Pathological Internet use: Internet addiction/disfunctional internet use] *Yeni Symposium*, 40(3), 105–110.
- Hewitt, P. L., & Flett, L. G. (1991). Perfectionism in the self and social contexts. *Journal of Personality and Social Psychology*, 60(3), 456–470.
- Hewitt, P. L., Mittelstaedt, W. M., & Flett, G. L. (1990). Self-oriented perfectionism and generalized performance importance in depression. *Individual Psychology*, 46(1), 67–73.
- İkiz, E., Asıcı, E., Savcı, M., & Yörük, C. (2015). Problemlı internet kullanımı ile üniversite yaşamına uyum ilişkisi [Relationship between problematic internet use and adaptation to university life]. *Bartın Üniversitesi Eğitim Fakültesi Dergisi*, 4(1), 34–50.
- Kandell, J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyber Psychology & Behavior*, 1, 11–17.
- Keser-Özcan, N. (2004). Üniversite öğrencilerinde internet kullanımının psikososyal durum ile ilişkisi [Relationship between Internet use and psychosocial status on university students] (Master's thesis, İstanbul Üniversitesi, İstanbul, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Keser-Özcan, N., & Buzlu, S. (2007). Internet use and its relation with the psychosocial situation for a sample of university students. *Cyberpsychology & Behaviour*, 10, 6–9.
- Koch, W. H., & Pratarelli, M. E. (2004). Effects of intro/extra version and sex on social internet use. *North American Journal of Psychology*, 6(3), 371–382.
- 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.

- Leung, L., & Lee, P. S. N. (2012). Impact of internet literacy, internet addiction symptoms, and internet activities on academic performance. *Social Science Computer Review*, 30(4), 403–418.
- McBride, M. (1990). Autonomy and the struggle for female identity: Implications for counseling women. *Journal of Counseling and Development*, 69(1), 22–26.
- McFall, M. E., & Wollersheim, J. P. (1979). Obsessive compulsive neurosis: A cognitive behavioral formulation and approach to treatment. *Cognitive Therapy and Research*, 3, 333–348.
- Morahan-Martin, J., & Schumacher, P. (2000). Incidence and correlates of pathological internet use among college students. *Computers in Human Behavior*, 16, 13–29.
- Odacı, H. (2011). Academic self-efficacy and academic procrastination as predictors of problematic internet use in university students. *Computers & Education*, 57, 1109–1113.
- Odacı, H., & Berber-Çelik, Ç. (2011, September). Üniversite öğrencilerinin problemleri internet kullanımlarının akademik öz-yeterlik, akademik erteleme ve yeme tutumları ile ilişkisi [Relationship of problematic internet use with academic self-efficacy, academic procrastination and eating habit among university students]. Paper presented at 5th International Computer & Instructional Technologies Symposium, Fırat University, Elazığ, Turkey.
- Odacı, H., & Kalkan, M. (2010). Problematic internet use, loneliness and dating anxiety among young adult university students. *Computers & Education*, 55, 1091–1097.
- Ögel, K. (2012). İnternet bağımlılığı, internetin psikolojisini anlamak ve bağımlılıkla başa çıkmak [Internet addiction, understanding of internet psychology and coping with addiction]. İstanbul, Turkey: Türkiye İş Bankası Yayınları.
- Oral, B. (2005). İnternet ve eğitim [Internet and education]. In A. Tarcan (Ed.), İnternet ve toplum [Internet and society] (pp. 90–116). Ankara, Turkey: Anı Yayıncılık.
- Özer, A. K. (2008). *Ben değeri tiryakiliği* [Self-worth addiction]. İstanbul, Turkey: Sistem Yayıncılık.
- Özer, Ş. (2013). *Problemleri internet kullanımının benlik saygısı ve öznel iyi oluş ile açıklanabilirliği*. [Explanation of problematic internet use with self-esteem and subjective well-being] (Master's thesis, Karadeniz Technical University, Trabzon, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Sarı, İ., Yenigün, Ö., Altıncı, E. E., & Öztürk, A. (2011). The relationship of need satisfaction to general self-efficacy and permanent anxiety: Sample of Sakarya University sport management students. *Sportmetre Beden Eğitimi ve Spor Bilimleri Dergisi*, 9(4), 149–156.
- Shapira, N. A., Goldsmith, T. D., Keck, P. E., Khosla, U. M., & McElroy, S. L. (2000). Psychiatric features of individuals with problematic internet use. *Journal of Affective Disorders*, 57, 267–272.
- Sırakaya M. ve Seferoğlu S.S. (2013). Öğretmen adaylarının problemleri internet kullanımlarının incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 28(1), 356–368.
- Siyez, M. (2015). Üniversite öğrencilerinde onay bağımlılığı ve empatinin sosyal fayda aracılığıyla aşırı internet kullanımına etkisi [Effect of acceptance addiction and empathy on excessive Internet use via social benefit]. *Anatolian Journal of Psychiatry*, 16, 30–36.
- Soule, L. C., Shell, L. W., & Kleen, B. A. (2003). Exploring internet addiction: Demographic characteristics and stereotypes of heavy internet users. *The Journal of Computer Information Systems*, 44(1), 64–73.
- Stebbins, P., & Pakenham, K. I. (2001). Irrational schematic beliefs and psychological distress in caregivers of people with traumatic brain injury. *Rehabilitation Psychology*, 46(2), 178–194.
- Suler, J. (1999). To get what you need healthy and pathological internet use. *Cyber Psychology & Behavior*, 2, 385–394.

- Sweeney, T. J. (1989). *Adlerian counseling: A practical approach for a new decade*. Phoenix, AZ: Accelerated Development.
- Taghavi, M. R., Goodarzi, M. A., Kazemi, H., & Ghorbani, M. (2006). Irrational beliefs in major depression and generalized anxiety disorders in an Iranian sample: A preliminary study. *Perceptual and Motor Skills, 102*, 187–196.
- Tahiroğlu, A. Y., Çelik, G. G., Uzel, M., Özcan, N., & Avcı, A. (2008). Internet use among Turkish adolescents. *Cyber Psychology & Behavior, 11*(5), 537–543.
- Tunalıoğlu, Z. (2013). *Problematic internet use: A study in Turkey* (Master's thesis, Boğaziçi University, İstanbul, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Türkçapar, M. H. (2012). *Bilişsel terapi* [Cognitive therapy]. Ankara, Turkey: Hyb Yayıncılık.
- Türkiye İstatistik Kurumu. (2015). *Hane halkı bilişim teknolojileri kullanımı araştırması* [Household information technology]. Retrieved from <http://www.tuik.gov.tr/PreHaberBultenleri.do?id=18660>
- Turner, M. J., Allen, M. S., Slatter, M. J., Barker, J. B., Woodcock, C., Harwood, C. G., & McFayden, K. (2018). The development and initial validation of the irrational performance beliefs inventory (IPBI). *European Journal of Psychological Assessment, 34*(3), 174–180.
- Tutgun, A. (2009). Öğretmen adaylarının problemlı internet kullanımlarının incelenmesi [Investigation of problematic internet use of teacher candidates] (Master's thesis, Marmara University, İstanbul, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Üçkardeş, E. A. (2010). *Mersin üniversitesi öğrencileri arasında internet bağımlılığının değerlendirilmesi* [Evaluation of internet addiction among Mersin University students] (Master's thesis, Mersin University, Mersin, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Wiseman, R., & Watt, C. (2004). Measuring superstitious belief: Why lucky charms matter. *Personality and Individual Differences, 37*(8), 1533–1541.
- Woodward, A. J., Carless, S. A., & Findlay, B. M. (2001). Psychometric evaluation of the irrational beliefs inventory in a marital context. *Australian Psychologist, 36*(3), 255–261.
- Yalçın, C. (2003). Sosyolojik bir bakış açısıyla internet [Internet in scope of a sociological perspective]. *Cumhuriyet Üniversitesi Sosyal Bilimler Dergisi, 27*(1), 77–89.
- Yang, S. C., & Tung, C. J. (2007). Comparison of internet addicts and nonaddicts in Taiwanese high school. *Computer & Human Behavior, 23*, 79–96.
- Yıldız, İ. (2010). *Lise öğrencilerinde problemlı internet kullanımı ile sağlıklı yaşam biçimi davranışları arasındaki ilişki* [Relationships between problematic internet use and healthy life style among highschool students] (Master's thesis, Cumhuriyet University, Sivas, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Young, K. (2004). Internet addiction: A new clinical phenomena on and its consequences. *American Behavioral Scientist, 48*, 402–415.
- Young, K. (2007). Cognitive behaviour therapy with internet addicts: Treatment out comes and implications. *Cyber Psychology & Behavior, 10*, 671–679.
- Yurtal-Dinç, F. (1999). Üniversite öğrencilerinin akılcı olmayan inançlarının bazı değişkenlere göre incelenmesi [Investigations of irrational beliefs in terms of some variables among university students] (Doctoral dissertation, Gazi University, Ankara, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>
- Zorbaz, O. (2013). *Lise öğrencilerinin problemlı internet kullanımının sosyal kaygı ve akran ilişkileri açısından incelenmesi* [Investigation of problematic internet use in scope of social anxiety and peer relations] (Master's thesis, Hacettepe University, Ankara, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>