



# The relationship between problematic internet use and interpersonal cognitive distortions and life satisfaction in university students<sup>☆</sup>

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## ABSTRACT

**Objective:** The aim of the study was to analyze the relationship between problematic internet use by college students and interpersonal cognitive distortions and life satisfaction.

**Methods:** A total of 418 students, 260 females and 158 males, studying in different departments of the Fatih Faculty of Education, Karadeniz Technical University, participated. The Online Cognition Scale, Interpersonal Cognitive Distortions Scale, Life Satisfaction Scale and Personal Information Form were used as instruments.

**Results:** A significant positive correlation was determined between problematic internet use and interpersonal cognitive distortions ( $r = .33, p < .01$ ), and a negative one with life satisfaction ( $r = -.21, p < .01$ ). Interpersonal cognitive distortions, life satisfaction and gender account for 21% of total variance ( $F_{(3413)} = 37.30, p < .05$ ). Findings revealed that males exhibit more problematic internet use than females, which subjects with a pessimistic perception of events have a higher level of problematic internet use than those with an optimistic perception and that subjects who always feel lonely exhibit greater problematic internet use than those who never or only sometimes experience feelings of loneliness.

**Conclusions:** Interpersonal cognitive distortions, life satisfaction and gender were significant predictors of problematic internet use. Problematic internet use exhibits significant variations according to gender, perception of events and feelings of loneliness.

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## 1. Introduction

Computer and internet use have become indispensable elements of life. A number of problems associated with excessive use of the internet, which facilitates people's lives in many spheres, such as communications, education, research and shopping, have begun appearing as a consequence of its spreading faster than anticipated. Prolonged internet use leads to physical problems, such as muscle and skeletal system impairments, eating disorders and eye pain and headaches, as well as to mental problems including depression, anxiety, sadness and intolerance (Beranuy, Oberst, Carbonell, & Chamarro, 2009; Demetrovics, Szeredi, & Rózsa, 2008; Odacı, 2011, 2013; Odacı & Kalkan, 2010). In the simplest terms, problematic internet use, in which concepts such as internet dependence (Wang, 2001) or online behavior addiction (Hall & Parsons, 2001) have been used to describe excessive internet use by individuals, may be defined as the individual experiencing psychological or social problems, or problems in school or at work, as a result of insufficient control of internet use (Davis, 2001).

Internet use is most widespread in the 16–24 age group. The internet is particularly widely used by young people at university (Kandell, 1998). A high risk of problematic internet use has been determined in students who are shy, feel lonely, tend toward depression, who experience social anxiety or who have problems in interpersonal relations (Çuhadar, 2012; Lei & Wu, 2007; Pierce, 2009; Saunders & Chester, 2008). In addition, these students' feelings toward themselves are also negative. They exhibit patterns of “extreme generalization” or an “all or nothing” way of thinking in respect of themselves and the outside world. In addition to ideas regarding themselves, such as ‘I only feel well on the internet’ or ‘I am valueless when I am not on the internet, but I am an important person online,’ they also harbor automatic ideas regarding the outside world. These may include, ‘The internet is the only place where I am respected,’ ‘Nobody likes me when I am not online,’ or ‘People treat me badly except for when I am online’ (Davis, 2001). The individual will then employ the internet more in order to establish interpersonal relations without fear or being rejected or disliked (Stieger & Burger, 2010) and in order to elicit positive reactions from others, and thus to be able to look at life in a positive way.

Problematic internet use is becoming a significant issue, particularly among the young. A rise has recently been observed in studies from the USA, Western Europe and Far Eastern countries (Öztürk, Odabaşoğlu, Eraslan, Genç, & Kalyoncu, 2007). Research shows that problematic internet use is correlated with social and psychological variables, such as depression, loneliness and social withdrawal (Kraut et al., 1998;

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Murali & George, 2007; Whang, Lee, & Chang, 2003), low self-esteem and satisfaction with life (Ko, Yen, Chen, Chen, & Yen, 2005) and problematic family relations (Armstrong, Phillips, & Saling, 2000). The fact that awareness of the subject has only recently emerged in Turkey appears from the very limited nature of the studies performed there. This study was intended to encourage awareness of the negative impact of problematic internet use on young people and to make a contribution to the literature. The resulting findings will make a significant contribution to the determination of therapeutic measures directed toward young people. The aim was to investigate the relationship between university students' problematic internet use and relationship-associated cognitive distortions and life satisfaction.

## 2. Method

### 2.1. Study group

The study group consisted of 418 students attending different departments of the Fatih Faculty of Education, at the Karadeniz Technical University in Turkey. Ninety-seven (23.2%) of the study group were studying math, 88 (21.1%) psychological counseling and guidance, 57 (13.6%) computing, 97 (23.2%) Turkish and 79 (18.9%) science. Questionnaires were administered to students in groups, in a class environment, by the authors. Before administration of the scales, students were given the requisite information about the aim of the research and how the measurement scales should be answered. Participation was voluntary. Thirty-two students had to be excluded for not responding properly to all questionnaires, so the final sample consisted of 418 participants, 260 (62.2%) females and 158 males (37.85), with a mean age of 20.4 years ( $SD = 1.63$ ).

### 2.2. Data collection instruments

The Online Cognition Scale, Interpersonal Cognitive Distortions Scale, Life Satisfaction Scale and Personal Information Form were used as instruments.

#### 2.2.1. Online Cognition Scale

Developed by Davis, Flett, and Besser (2002) with the aim of evaluating ideas on the internet, the scale was then adapted into Turkish by Özcan and Buzlu (2005). It consists of four subscales; loneliness-depression, reduced impulse control, social support and distraction. A typical item reads, "I don't think about my responsibilities when I am on the internet". The Online Cognition Scale is a 7-point multiple choices Likert-type scale consisting of 36 items. High scores represented problematic internet use. Internal consistency coefficient was .91 and item-total reliability coefficient was between .17 and .66.

#### 2.2.2. Interpersonal Cognitive Distortions Scale

The Interpersonal Cognitive Distortions Scale was developed to measure dysfunctional beliefs related to general human relationships (Hamamcı & Büyükköztürk, 2004). It consists of three subscales (interpersonal rejection, unrealistic relationship expectations and interpersonal misperception), with 19 items in all. A typical item reads, "People don't understand me at all." The responses were scored on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). High scores represented a high level of dysfunctional relationship beliefs. Internal consistency coefficient was .73 for the first subscale, .66 for the second, and .43 for the third. The test-retest coefficient in 15 days was .74 (Hamamcı & Büyükköztürk, 2004).

#### 2.2.3. Life Satisfaction Scale

The Life Satisfaction Scale was developed by Diener, Emmons, Larsen, and Griffin (1985) and adapted into Turkish by Köker (1991) and Yetim (1993). It measures objective well-being. A typical item reads, "The conditions of my life are excellent." It consists of five

**Table 1**  
Relationships between variables.

Variables	PIU	ICD	LS	X	Sd
PIU	1	.33**	-.21**	73.38	26.77
ICD		1	-.13*	51.35	8.90
LS			1	22.60	6.65

PIU, problematic internet use; ICD, interpersonal cognitive distortions; and LS, life satisfaction.

\*  $p < .001$ .

\*\*  $p < .01$ .

items evaluated over a Likert Scale of seven degrees. Each item is scored from 1 to 7, and the total score varies between 1 and 35. High scores represent a high level of life satisfaction. Coefficiency varies between .80 and .89. The test-retest coefficient was .85 and item test-retest correlation coefficients were between .71 and .80.

### 2.2.4. Personal Information Form

The Personal Information Form was developed by the authors and consists of questions about age, gender, perception of events and feeling lonely. The initial aim in this research was to determine all investigated personality traits using valid and reliable instruments. Since the research involved the use of three instruments, we thought that completing these items would be very time-consuming and that students would be unable to answer all the items. Therefore, "perception of events" and "feeling lonely" were assessed on the basis of students' self-perception by means of a question for each tendency. Perception of events (optimistic/pessimistic) was determined by answers to the question "How do you usually perceive events in your environment?" Feeling lonely was evaluated on the basis of the question "How do you evaluate yourself in your social environment?"

### 2.3. Data collection and analysis

Data were analyzed using SPSS 15.00. Pearson's product moments correlation coefficient, multiple linear regression analysis, the independent  $t$ -test and one-way ANOVA were used for data analysis. Significance was set at a minimum of 0.05, while other significance levels (0.01 and 0.001) are also shown.

## 3. Findings

This section investigated the relationship between students' problematic internet use and interpersonal cognitive distortions and life satisfaction. We then examined whether individuals' problematic internet use varied according to the variables in the personal information form.

As shown in Table 1, a positive correlation ( $r = .33$ ,  $p < .01$ ) was determined between problematic internet use and cognitive distortions; a negative correlation ( $r = -.21$ ,  $p < .01$ ) was determined between problematic internet use and life satisfaction. As shown in Table 2, interpersonal cognitive distortions, life satisfaction and gender account for 21% of total variance ( $F_{(3413)} = 37.30$ ,  $p < .05$ ). Interpersonal cognitive distortions ( $\beta = .28$ ,  $p < .05$ ), life satisfaction ( $\beta = -.14$ ,  $p < .05$ ) and gender ( $\beta = .28$ ,  $p < .05$ ) make a significant contribution to the model. Independent  $t$ -test analysis showed that problematic internet use scores vary significantly according to gender ( $t = -6.42$ ,  $p < .05$ ) and

**Table 2**  
Multiple linear regression analysis results for problematic internet use.

Variables	B	$\beta$	t	p	R	R <sup>2</sup>	$\Delta R^2$	F
Fixed	21.28	–	2.37	.018	.46	.21	.21	37.30
ICD	.85	.28	6.38	.001				
LS	-.55	-.14	-3.11	.002				
Gender	15.28	.28	6.26	.001				

ICD, interpersonal cognitive distortions; LS, life satisfaction.

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