

## Internet Addiction in Adolescence: Evaluation from Mother, Father and Peer Relationship Perspectives<sup>1</sup>

*Ergenlerdeki İnternet Bağımlılığı: Anne, Baba ve Akran İlişkileri Açısından Bir Değerlendirme*

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### Abstract

In this study, the purpose is to analyse internet addiction in adolescence from mother-father-adolescent relationships and peer adolescence. This study is a quantitative study conducted with a relational survey model. The study universe consists of 592 high school students. In data analysis, gender, age, having a computer, internet addiction of participants based on internet usage frequency and duration, whether total scores of mother, father and peer scale is related with socio-demographical factors are analysed with single-way multi-variable variance analysis. When multi-variable basic effect is significant and number of groups are more than two, a Scheffe test was applied as post-hoc test. Among variables considered under the scope of this study, correlation analysis and simple linear regression analysis is conducted to determine relationship between mother, father and peer attachment total scores and internet addiction levels respectively. Based on internet usage frequency variable, it is determined that internet addiction and peer relationship significant differed for internet usage frequency. It is determined that internet addiction scores had low level negative relationship with mother and father relationship scores, internet addiction scores had low level positive relationship with peer relationship scores. It is found that mother relationship and control perception score of female students is significantly higher than male students. However, it is determined that internet addiction, father relationships and control perception and peer relationship levels are similar for gender. Study results are compared with related literature and recommendations are provided.

**Keywords:** Internet, İnternet addiction, Adolescence, Mother- father and adolescence relationship, Peer relationship

### Özet

*Bu araştırmada, ergenlerin internet bağımlılığının anne-baba ergen ilişkisi ve akran ilişkisi açısından incelenmesi amaçlanmıştır. Araştırma ilişkisel tarama modelinin kullanıldığı betimsel bir çalışmadır. Araştırmanın örneklemini, 592 lise öğrencisi oluşturmaktadır. Verilerin analizinde cinsiyet, yaş, bilgisayarı olup olmama durumu, internet kullanım sıklığı ve süresine göre katılımcıların internet bağımlılığı, anneye, babaya ve akrana bağlanma ölçeği toplam puanlarının sosyodemografik faktörlerle ilişkili olup olmadığı bir dizi Tek Yönlü Çok Değişkenli Varyans Analizi aracılığıyla incelenmiştir. Çok değişkenli temel etki anlamlı olduğunda ve grup sayısı ikiden fazla olduğunda İşlem Sonrası (Post-Hoc) testi olarak Scheffe testi kullanılmıştır. Araştırma kapsamında ele alınan değişkenlerden sırasıyla anneye, babaya ve akrana bağlanma ölçeği toplam puanlarının internet bağımlılığı düzeyleriyle ilişkisini belirleyebilmek amacıyla korelasyon analizi ve basit doğrusal regresyon analizi gerçekleştirilmiştir. İnternet kullanım sıklığı değişkenine göre internet bağımlılığının ve akran ilişkisinin internet kullanım sıklığına göre anlamlı farklılık gösterdiği saptanmıştır. İnternet bağımlılığı puanları, anneye ve babayla ilişkiler puanları ile düşük düzeyde negatif yönde ilişkiliyken, akran ilişkileri puanlarıyla düşük düzeyde pozitif yönde ilişkili olduğu tespit edilmiştir. Kadın öğrencilerin anneye ilişkileri ve kontrol algısı erkek öğrencilerden anlamlı bir şekilde daha yüksek olduğu bulunmuştur. Ancak cinsiyete göre internet bağımlılığı, babayla ilişkileri ve kontrol algısı ve akran ilişkileri düzeyleri benzer olduğu saptanmıştır. Araştırma sonuçları ilgili literatür doğrultusunda tartışılarak önerilerde bulunulmuştur.*

**Anahtar Kelimeler:** İnternet, İnternet bağımlılığı, Ergen, Anne-baba ve Ergen ilişkisi, Akran ilişkisi

## 1. Introduction

The internet is source group formed between two or more local or wide area network to enable millions of subnetworks to communicate under a common protocol and share sources (Koç, 2011). Fast and easy internet access, homework

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assignments and school practices on internet popularised internet use by adolescents. It is possible that adolescents with weak social skills can form healthy relationships with their surroundings. Communication over the internet acts as a platform where adolescents can be themselves (Köse, 2016). Internet offers various opportunities to adolescents that try to form identities. In addition to gaining knowledge to form their own identity, the internet provides a communication network to adolescents where they can get feedback (Morsünbül, 2014). Additionally, a generation that played on streets with their friends is now replaced by computer games and chatrooms. It is believed that such change occurred due to increased urbanisation, decreased playgrounds and children and adolescents spending more time at home.

Young people in the adolescence period tend to direct to peer groups to overcome or eliminate their problems and, in this period, using internet is considered as popular activity. This causes young people to use the internet excessively (Lin & Tsai, 2002; Demir & Kutlu, 2018). On the other hand, the rapid development of the internet caused certain problems in many societies and during integration of this technology with cultural structure and values (Kuzu, 2011; Demir & Kutlu, 2017). Internet addiction is one of these problems. Internet addiction is a type of technology addiction and this topic is considered under behavioural addictions (pathological gambling etc.). Internet addictions refers to pathological, repetitive and persistent internet use (Ögel, 2017; Tarhan & Nurmedov, 2013).

Family communication and relationship between family members plays an important role in how personality of develops (Ekşi & Ümmet, 2013). It is accepted that healthy relationships between individuals in adolescence and their family helps adolescents to have an easier adolescence period. It can be seen that adolescents with problematic behaviour also have problems in their relationship with their families. The tendency of adolescents towards various addictions is known as undesired behaviour during development period. Excessive internet use i.e. internet addiction that has become a problem in adolescence life due to uncontrolled increase in usage affects mother-father adolescence relationship. In literature, whether negativities in mother-father adolescence relationship caused adolescence to turn to internet or adolescence that turns to internet starts experiencing problems with family is investigated (Altıntaş & Öztapak, 2016; Çevik & Çelikkaleli, 2010; Kayri, Tanhan, & Tanriverdi, 2014). On the other hand, peaceful family environment is a protective factor for preventing adolescence to tend towards risky behaviour as positive communication and emotions between family members can easily be transferred to other members. Adolescents who do not experience love, intimacy and affection from family have higher tendency to show anomalous behaviour (Ateş & Akbaş, 2012). As it is understood from these explanations, it is believed that adolescents with positive mother-father relations will not have a tendency for internet addiction. In a study, it was shown that adolescents that perceived parent attitude as "disinterested" tend to have higher internet addiction compared to adolescence that perceived parent attitude as "protective", "authoritarian" and "democratic". It was stated that higher internet addiction in children of disinterested families is caused by insufficient interest of families to children, lack of healthy communication with children and they do not know how much time adolescence spends time in front of computer or internet (Çevik & Çelikkaleli, 2010). Ayas and Hortum (2013) found that children of parents with negligent behaviour had higher internet addiction level that children of parents with tolerant and democratic behaviour. Similarly, it was found that adolescents that have trust towards their parents showed more efficient coping (Morsünbül & Çok, 2011) and this trust decreased internet addiction risk of adolescence however obsessive and disinterested behaviour increased internet addiction risk (Savcı & Aysan, 2016).

Warm and trust-based relationship of adolescents with their families form the basis of their relationship with peers. Attitude and behaviours of parents affect peer relationship of adolescence. Intense but short-time relationships in adolescence period is common, therefore, not every relationship might be full-attachment relationship. Primary attachment objects are characterised as long-term, intimate and support-based objects while other relationships are characterised as secondary attachment objects. Accordingly, peers are secondary attachment objects (Çevik & Atıcı, 2008; Çevik & Çelikkaleli, 2010; Demir & Kutlu, 2016). Çevik and Çelikkaleli (2010) stated that adolescents with high internet use had high peer attachment or adolescents with high peer attachment had higher internet use. Tsai and Lin (2003) stated that acceptance and approval in communication via internet is easier than physical communication, therefore, forming and sustaining friendship in online environment had become popular among adolescents. Based on this result, it can be stated that internet friendship may cause internet addiction. Çevik and Çelikkaleli (2010) stated that adolescence that do not have sufficient interest and love from family tend to fill this gap with friends. In another study, it is stated that adolescence struggling to form friendship turned to internet to eliminate loneliness due to these struggles (Kayri et al., 2014). Accordingly, increased social anxiety in adolescence period increased problematic internet use (Yavuz, 2019; Zorbaz & Dost, 2014). Another study in the literature showed that importance mother, father and friend support continued in the adolescence period and both supports is related with self-respect (Çevik & Atıcı, 2008). Similarly, it is stated that adolescents with high level relationships with friends used internet more or adolescents that use internet frequently had high relationship with friends (Çevik & Çelikkaleli, 2010). In a similar study, it was found that as internet addiction level of adolescence increased, peer togetherness level of adolescents increased as well (Savcı & Aysan, 2016).

Expansion of internet use as one of the indispensable factors of everyday life and easier access to gains of virtual world dragged adolescence to uncontrolled internet use. Internet has become attractive in many aspects has caused certain negative changes in family and peer relationships of adolescence. Therefore, 15 - 18 years old adolescents are the target group of this study. It is possible to see that internet use and access is rapidly expanding among adolescence in Turkey as well as around the world. According to Household Information Technologies Usage Research of Turkish Statistics Institute, while 87.2% of 16-24 years old group used internet on 2017, internet usage in the same age group reached 90.7% in 2018 (TÜİK, 2018). Under this scope, it is believed that results of this study will help showing relationship between adolescence internet addiction and mother-father adolescence and peer relation as well as healthy internet use and internet addiction prevention studies in guidance service at schools, develop mother - father and peer relationship skills.

Related literature shows that studies related with adolescence internet addiction has increased both in Turkey and around the world (Gökçearslan & Günbatır, 2012; Günlü & Ceyhan, 2017; Sinkkonen, Puhakka & Merilainen, 2014; Taş, 2018; Waldo, 2014; Yılmaz et al., 2014). In this sense, it is believed that there is need for more research to explain unconscious use of rapidly expanding internet among adolescence in Turkey and negative impacts of this use. With introduction of internet addiction concept and when negative impacts of internet addiction of mental and physical health of individuals are considered, realising this problem at early stage and planning preventive practices are extremely important (Esen & Siyez, 2011). As it can be seen from these statements, relationships in the adolescence period are differentiating from childhood and gaining new dimension. Therefore, it is important to increase personal and social harmony of adolescence in this process and support gaining social skills. Precautions to prevent possible problems that can prevent healthy development of adolescence must be taken. Under this scope, it is believed that results of this study that analysis internet addiction and effect of internet addiction on family and peer relationship of adolescence will contribute to literature and practitioners.

The purpose of this study is to examine internet addiction in adolescence from mother-father adolescence relationship and peer adolescence.

What is the relationship between adolescent internet addiction and mother-father adolescent relationships and peer relationships? Answers for sub-problems presented under this main problem are investigated:

1. Does adolescent internet addiction and mother-father and peer relationship significantly change for gender?
2. Does adolescent internet addiction and mother-father and peer relationship significantly change for internet usage frequency?
3. Is there statistically significant relationship between adolescent internet addiction and mother-father adolescent and peer relationship?
4. Is adolescent internet addiction significant predictor of mother-father adolescent and peer relationship?

## 2. Research Method

This study conducted to analyse internet addiction in terms of mother-father, adolescent and peer relationships is a descriptive study in relational survey model. Karasar (2012) defined studies that desire to determine existence and level of difference between two or more variables as relational survey model.

### 2.1. Universe and Sample

Universe of this study consisted total of 7770 students in 18 public high schools of Konya city Ereğli province in fall term of 2016-2017 academic year. The sample of this study consisted of 592 students with 95% confidence interval and 5% error margin. The sample group was determined with random sampling method. The sample group selected from this universe that has size to represent this universe with statistical calculations and randomly selected is called random sampling method (Yıldırım & Şimşek, 2004). It was determined that students in sample group were between 15-18 years old.

### 2.2. Data Collection Tools

Internet Addiction Scale (IAS), Mother-Father Relationship Scale (AFRS), Peer Relationship Scale (MRS) and Personal Information Form were used as data collection tool of this study.

#### 2.2.1. Internet Addiction Scale (IAS)

IAS applied in this study was developed by Günüş and Kayri (2010) in Turkish language on 754 adolescence individuals. The scale has 5-point Likert type, consists of 35 items and was graded with 5-point Likert type. Cronbach Alpha internal consistency of this scale was calculated as .94. The scale consists of 4 sub-factors and total explained variance for four sub-dimensions was 47.46%. In this study, analysis was conducted on scale total score and scale was considered as single dimension. The high score from this scale indicates internet addiction (Günüş & Kayri, 2010). Cronbach Alpha internal consistency of this scale was calculated as .95 for data of this study.

#### 2.2.2. Mother-Father Adolescent Relationship Scale

Father Adolescent Relationship Scale: This scale that was developed by Kaner (2000a) measures mother father control and mother-father relationship based on adolescence statement. The first sub-dimension Mother Relationship Scale (MRS) consisted of 7 sub-scales (Close Communication, Being in Activity Together, Sensitivity, Love and Trust, Monitoring, Organising Norms and Meeting Expectations) and 30 items while second sub-dimension Father Relationship Scale (FRS) consisted of 8 sub-scales (all sub-dimensions in Mother Relationship Scale and House Rules) and 37 items. This scale was evaluated under a 5-point Likert type. The high score from this scale shows that control of mother-father on adolescence and relationship with adolescence is high. The low score from this scale shows that parent control on adolescence is low and relationship between them is decreasing. The Cronbach alpha internal consistency coefficients of this scale were identified as .92 (MRS) and .93 (FRS) respectively (Kaner, 2000a). In this study, Cronbach alpha internal consistency of MRS was calculated as .93 and Cronbach alpha internal consistency of FRS was calculated as .95.

#### 2.2.3. Peer Relationship Scale (PRS)

This scale was developed by Kaner (2000b) to determine peer relationship. Scale consists total of 18 items and 4 sub-scales. Sub-scales are devotion, trust and identification, self-disclosure and loyalty. 5-point evaluation is used for answering this scale. The high score from this scale indicates positive peer relationship. In this study, rather than sub-dimensions, total score of this scale was considered. The internal consistency coefficient of this scale was calculated as

.86, Spearman Brown test reliability was calculated as .73 and test-re-test reliability coefficient was calculated as .93 (Kaner, 2000b). For these research data, Cronbach alfa internal consistency of this scale was .88, the Spearman Brown reliability coefficient was .86.

#### 2.2.4. Personal Information Form

Personal information form with independent variables was prepared for individuals in the sample. These variables were age, gender, having a computer, internet usage frequency and time.

#### 2.3. Data Collection

To conduct this study, ethical board approval was received from Ondokuz Mayıs University Social and Human Science Ethical Board (2016/98) and written permission was received from Konya city Ereğli province District National Education Directorate. Data collection tools used in this study was applied to voluntary students in public high schools in Konya city Ereğli province in fall term of 2016-2017 academic term after researchers informed these students and having oral consent. Applications were conducted in groups after taking necessary permissions from institutions after talking before the application, in classroom environment after receiving permission from teachers and informing students about research and measurement tools. Application took approximately 30 minutes.

#### 2.4. Data Analysis

Before data analysis, the initial analysis compliant with Tabachnick and Fidell's (2012) recommendations were conducted. To determine correctness of data, frequency distributions were analysed and it was seen that all values were within acceptable range. There was no value loss in data set. Five participants in mother relationship and two participants in peer relationship scale were excluded from data set as these were single variable outliers. At the same time, multi-variable outlier Mahablonis distances were calculated and excluded from data set. Descriptive statistics were used to gain socio-demographic properties of students analysed under this research. Gender, age, having a computer, internet addiction of participants based on internet usage frequency and duration, whether total scores of mother, father and peer scale is related with socio-demographical factors are analysed with single-way multi-variable variance analysis (MANOVA). In this sense, internet addiction, mother, father and peer attachment scale total scores dependent variables were respectively analysed with gender and internet usage frequency independent variables. Wilk's Lambda is used for reporting multi-variable basic effect. When multi-variable basic effect is significant and number of groups are more than two, Scheffe test was applied as post-hoc test.

Among variables considered under the scope of this study, correlation analysis and simple linear regression analysis is conducted to determine relationship between mother, father and peer attachment total scores and internet addiction levels respectively. One-way MANOVA has assumptions to statistically test normality, variance and covariance matrix homogeneity (MANOVA). On the other hand, correlation analysis has linearity in addition to normality and regression analysis has error variance normality, co-variance and multicollinearity assumptions in addition to normality assumption (Pituch & Stevens, 2016). Skewness and kurtosis values were controlled based on normality assumption sample size. As skewness and kurtosis values were between -2 and +2, this shows that data had almost normal distribution (George & Mallery, 2016; Pituch & Stevens, 2016). It was seen that skewness of internet addiction, mother, father and peer attachment scale total score values were .53, -.94, .76 and .65 respectively. It was seen that kurtosis of internet addiction, mother, father and peer attachment scale total score values were .09, .30, .17 and .01 respectively. These findings indicated that data has almost normal distribution. Homogeneity of covariance matrix was analysed with Box-M, homogeneity of variance was analysed with Leven test and it was seen that all analysis was met (Ho, 2013; Tabachnick & Fidell, 2012). Therefore, as post-processing test, Scheffe test was applied as number of groups is more than two. In addition to normality assumption of correlation analysis, there is linearity assumption, in addition to normality assumption of regression analysis, there are linearity, error variance normality, covariance and multicollinearity assumptions. All of these assumptions were investigated before analysis and it was seen that these assumptions were met. Significance level in all statistical analysis was accepted as .05.

### 3. Results

55.9% ( $n=331$ ) of participant students were female and 44.1% ( $n=261$ ) were male. Age of students ranged between 15-18 years old, 30.4% were ( $n=30.4$ ) 15, 26.7% were ( $n=158$ ) 16, 23.8% were ( $n=141$ ) 17 and 19.1% were ( $n=113$ ) 19 years old. Almost half of students didn't have a personal computer (%47.3,  $n=280$ ). A limited number of students (%6.9,  $n=41$ ) connected to internet for 10 days or longer. Lastly, daily internet use of majority of students changed between 0-2 hours.

#### Findings for Internet Addiction, Mother-Father and Peer Relationship of Adolescence for Gender

**Table 1:** Average and standard deviation for gender variable

Variables	IAS		MRS		FRS		PRS	
	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd

Female	78.88	26.01	124.74	19.78	133.99	29.95	68.10	12.89
Male	81.31	24.31	117.69	20.84	133.94	27.59	67.61	12.67

IAS: Internet Addiction Scale, MRS: Mother Relationship Scale, FRS: Father Relationship Scale, PRS: Peer Relationship Scale, there was statistically significant difference:  $a > b$ .

Based on gender variable, average scores and standard deviation values for internet addiction, mother relationship, father relationship and peer relationship are shown on Table 1. In terms of gender, One Way MANOVA was applied to determine whether there was significant difference for average scores of internet addiction, mother relationship, father relationship and peer relationship scale. Based on One Way MANOVA test results, it was seen that multi-variable basic effect of internet addiction, mother relationship, father relationship and peer relationship scale scores were significant for gender variable (Wilk's  $\Lambda = .96$ ,  $F(4, 587) = 6.47$ ,  $p < .001$ , partial  $\eta^2 = .042$ ). These findings showed that internet addiction, mother relationship, father relationship and peer relationship scale scores and multi-variable basic effect for gender variable and there might be significant difference between groups for at least one. One-way variance analysis (ANOVA) results conducted to determine cause of this difference is given in Table 2.

**Table 2:** One way ANOVA results for gender variable

Variance Caused	Sd1, Sd2	F	p	Partial $\eta^2$
IAS	1.590	1.35	.246	.002
MRS	1.590	17.61	.001*	.029
FRS	1.590	.00	.984	.000
PRS	1.590	.22	.643	.000

IAS: Internet Addiction Scale, MRS: Mother Relationship Scale, FRS: Father Relationship Scale, PRS: Peer Relationship Scale,  $p < .001^*$ ,  $\eta^2 =$  Effect size.

As seen from Table 2, while mother relationship scale score ( $F(1, 509) = 17.61$ ,  $p < .001$ , partial  $\eta^2 = .029$ ) had significant difference for gender variable, internet addiction ( $F(1, 509) = 1.35$ ,  $p < .05$ , partial  $\eta^2 = .002$ ) father relationship ( $F(1, 509) = 12$ ,  $p > .05$ , partial  $\eta^2 = .000$ ) and peer relationship ( $F(1, 509) = 22$ ,  $p > .05$ , partial  $\eta^2 = .000$ ) scale scores showed no significant difference. As seen from Table 1, mother relationship and control perception of female students were significantly higher than male students. However, internet addiction, father relationship and control perception and peer relationship levels are similar for gender.

### Findings Regarding Internet Addiction, Mother Relationship, Father Relationship and Peer Relationship for Internet Usage Frequency

**Table 3:** Average and standard deviation for internet usage frequency variable

Variables	IAS		MRS		FRS		PRS	
	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd	$\bar{x}$	sd
Everyday	84.35a	24.57	120.73	20.10	132.29	28.87	68.79	12.57
Once every 2 days	75.81	23.63	125.06	18.14	137.00	31.51	67.71	12.37
Once every 3-4 days	72.15	22.67	120.48	20.82	139.50	26.56	68.05	11.70
Once a week	68.04b	26.30	125.88	19.47	139.31	27.80	64.78	13.55
8 days or more	67.24b	25.19	120.24	20.43	132.83	28.08	63.12	14.30

IAS: Internet Addiction Scale, MRS: Mother Relationship Scale, FRS: Father Relationship Scale, PRS: Peer Relationship Scale, there was statistically significant difference:  $a > b$ .

Based on internet usage frequency variable, average scores and standard deviation values for internet addiction, mother relationship, father relationship and peer relationship are shown on Table 3. In terms of internet usage frequency, One Way MANOVA was applied to determine whether there was significant difference for average scores of internet addiction, mother relationship, father relationship and peer relationship scale. Based on One Way MANOVA test results, it was seen that multi-variable basic effect of internet addiction, mother relationship, father relationship and peer relationship scale scores were significant for internet usage frequency variable (Wilk's  $\Lambda = .91$ ,  $F(16, 1784.79) = 3.45$ ,

$p < .001$ , partial  $\eta^2 = .023$ ). One-way variance analysis (ANOVA) results conducted to determine cause of this difference is given in Table 4.

**Table 4:** One way anova results for internet usage frequency

Variance Caused	Sd1, Sd2	F	p	Partial $\eta^2$
IAS	4, 587	10.31	.001**	.066
MRS	4, 587	1.29	.275	.009
FRS	4, 587	1.33	.258	.009
PRS	4, 587	2.68	.031*	.018

IAS: Internet Addiction Scale, MRS: Mother Relationship Scale, FRS: Father Relationship Scale, PRS: Peer Relationship Scale,  $p < .05^*$ ,  $p < .001^{**}$ , Partial  $\eta^2 =$  Effect size.

As seen from Table 4, while internet addiction scale ( $F(4, 587) = 10.31$ ,  $p < .001$ , partial  $\eta^2 = .026$ ) and peer relation scale ( $F(4, 587) = 2.68$ ,  $p < .05$ , partial  $\eta^2 = .007$ ) scores significantly differed for internet usage frequency variable, mother relationship ( $F(4, 587) = 1.29$ ,  $p > .05$ , partial  $\eta^2 = .009$ ) and father relationship ( $F(4, 587) = 1.33$ ,  $p > .05$ , partial  $\eta^2 = .009$ ) scale scores showed no significant difference. To determine reason for this difference, a Scheffe test was applied after certain operation. Based on Scheffe test results, internet addiction level of students that use internet everyday ( $Av: 84.35$ ) were significantly higher than internet addiction of individuals that use internet once a week ( $Av: 68.04$ ) or 8 days or longer ( $Av: 67.24$ ). There was no significant difference between other groups. According to Scheffe test results conducted on peer relationship scale scores, there was no statistically significant difference between any of the groups. This shows that relationship between internet usage frequency and peer relationship are linear, in other words, as internet usage frequency increases, students had the tendency to evaluate peer relationship in more positive way, however, this score difference between groups was not at significant level to create difference between groups.

#### Findings Regarding Internet Addiction, Mother Relationship, Father Relationship and Peer Relationship

Pearson correlation analysis was conducted to investigate the relationship between internet addiction, mother-father adolescent and peer relationship. Pearson correlation analysis results are presented in Table 5.

**Table 5:** Correlation coefficients between variables, variable average and standard deviation values

	1	2	3	4
1. IAS	.95			
2. MRS	-.20**	.93		
3. FRS	-.20**	.55**	.95	
4. PRS	.09*	.18**	.13**	.88
$\bar{x}$	79.95	121.63	133.97	67.88
$\bar{s}$	25.29	21.59	28.91	12.77

IAS: Internet Addiction Scale, MRS: Mother Relationship Scale, FRS: Father Relationship Scale, PRS: Peer Relationship Scale;  $p < .05^*$ ,  $p < .01^{**}$ . Correspondence of variables were Cronbach alpha internal consistency coefficients calculated for this study.

As seen from Table 5, internet addiction scale scores had low level negative relationships between the mother relationship scale ( $r = -.20$ ,  $p < .01$ ), father relationship scale scores ( $r = -.20$ ,  $p < .01$ ) while internet addiction scale scores had low level positive relationship with peer relationship scale scores ( $r = .09$ ,  $p < .05$ ). Peer relationship scale scores had low level positive relationship with mother relationship scale ( $r = .18$ ,  $p < .01$ ) and father relationship scale scores ( $r = .13$ ,  $p < .01$ ).

### Findings Whether Internet Addiction Is a Predictor of Mother Relationship, Father Relationship and Peer Relationship

To determine at what level did internet addiction scale predicted mother relationship scale, father relationship scale and peer relationship scale scores, simple linear regression analysis was conducted. Change statistics for regression analysis is presented in Table 6 and regression analysis results are presented in Table 7.

**Table 6:** Change statistics

Model	R	R <sup>2</sup>	Straight. R <sup>2</sup>	TSH	Change Statistics					
					ΔR <sup>2</sup>	ΔF	sd <sub>1</sub>	sd <sub>2</sub>	P	
<b>MRS</b>										
Model 1	.20	.04	.04	20.21	.04	23.49	1	590	.001**	
<b>FRS</b>										
Model 1	.20	.04	.04	28.35	.04	24.48	1	590	.001**	
<b>PRS</b>										
Model 1	.09	.01	.01	12.74	.01	4.28	1	590	.038*	

IAS: Internet Addiction Scale, MRS: Mother Relationship Scale, FRS: Father Relationship Scale, PRS: Peer Relationship Scale, \* $p < .05$ , \*\* $p < .001$ , TSH: Standard Error of Estimate, sd: Degree of Freedom.

**Table 7:** Regression analysis results

Model		Non-Standardised Coefficients		Standardised Coefficients	t	P
		B	SH	β		
<b>MRS</b>						
Model 1	(Constant)	134.38	2.76		48.74	.001**
	IAS	-.16	.03	-.20	-4.85	.001**
<b>FRS</b>						
Model 1	Constant	152.22	3.87		39.36	.001**
	IAS	-.23	.05	-.20	-4.95	.001**
<b>PRS</b>						
Model 1	Stationary	64.46	1.74		37.10	.001**
	IAS	.04	.02	.09	2.07	.039*

\* $p < .05$ ; \*\* $p < .001$ .

Based on simple regression analysis, it was seen that all models are significant. While internet addiction predicted mother relationship and control ( $\beta = -.20$ ,  $t = -4.85$ ,  $p < .001$ ), father relationship and control ( $\beta = -.20$ ,  $t = -4.95$ ,  $p < .001$ ) in negative way, internet addiction level predicts peer relationship in positive way ( $\beta = .09$ ,  $t = 2.07$ ,  $p < .05$ ). In other words, in this sample students with high internet addiction had low mother relationship and control perception and father relationship and control perception. On the other hand, these students had high possibility to have positive relationships with their friends.

#### 4. Discussion

In findings of this study, while there was significant difference in mother relationship scale score for gender, there was no significant difference for internet addiction, father relationship and peer relationship scale scores. Balci and Gülnar (2009) studied with university students and found similar results. Similarly, study of Ayas and Horzum (2013) supports findings of this study. On the other hand, it was found that there are studies in the literature that show there is significant difference between internet addiction and gender (Esen & Siyes, 2011; Morahan-Martin & Schumacher, 2000; Ozmen et al., 2016; Zorbaz & Dost, 2014). It is believed that differences in these studies can be caused by sample group properties, using different internet addiction measurement tools or cultural difference of research cities.

According to findings obtained in this study, there was significant difference between mother relationship scores for gender and it was found that mother relationship and control perception of female students were significantly higher than male students. There was no significant difference in father relationship and control perception for gender. While there are supporting studies in the literature, there are also studies against these findings. Gündüz and Çok (2015) found

female adolescence were watched by their mothers more, therefore, female adolescence had higher relationship with mother compared to male adolescence. In another study on adolescence, it is stated that female adolescence opened up to mothers more than fathers (Laird, Marrero, & Sentse, 2010). Çevik and Atıcı (2008) stated that more than half of adolescence expressed intervention by family in their friendship and intervention rate in females were higher than males. Tepe and Sayıl (2012) found that both genders were under mother and father control in peer relationship but males perceived both mother and father psychological control at high level while females perceived mother and father behavioural control at high level. Therefore, when adolescence peer relationship is considered, regardless of gender, parents intervened at same level. Based on culture of the society, closeness and control of parents with female and male children might differ. It is believed that different results in studies might be caused by cultural differences.

Based on findings of this study, it was determined that there was no significant difference in peer relationship scores for gender. Literature review showed studies that support this finding. However, different from these findings, studies showed that positive peer relationship of female adolescence was higher than male adolescence (Totan & Yöndem, 2007). In another study, it was determined that there was no difference for gender when having friends from opposite genders but females had more friends than males (Çevik & Atıcı, 2008).

Findings obtained from this study found a significant difference between internet usage frequency and internet addiction of adolescents. Accordingly, it was determined that addiction level of adolescents who use internet everyday was higher than adolescence that use internet once a week or 8 or more days. Balcı and Gülnar (2009) found similar results. The group that has internet addiction risk and group that has addiction indicators had higher internet usage frequency than another group. It was determined that risky users and addicts regularly accessed internet 4-5 days per week or every day. Cengizhan (2005) found that group with high internet usage duration are fond of internet use. In another study, it was found that as internet usage duration of adolescence increased, internet addiction increased as well (Yüksel & Yılmaz, 2016). It was found that there is positive relationship between time spend on internet and internet addiction (Anderson, 2001; Kayri et al., 2014; Yang & Tung, 2007; Yüksel & Yılmaz, 2016). It is believed that internet usage time is a risk factor for internet addiction and as time spend on internet increased, this increased caused self-control problems and misuse.

Based on another finding from this study, there was no significant difference for mother father relationship scores for internet usage frequency. There was no study in the literature on this topic. This result obtained from the study can be explained as mother and father spend less time with their children as mothers are active in work life as fathers. On the other hand, it is worth to consider adolescence that spend less time with mother-fathers spend more time on internet and why this failed to show significant difference. However, it could be said that mother-fathers believe that their children spend more time on internet to study.

As a result of study findings, it was determined that peer relationship showed significant difference for internet usage frequency. Based on this result in line with findings obtained from this study, adolescence with internet addiction had more positive peer relationship scores compared to adolescence without internet addiction in this sub-dimension. It is believed that peer attachment increased as adolescence continue to communicate with peers via internet at home after spending time with their friends. However, Köse (2016) stated that adolescence that intensely use internet failed to have time to form quality and real relationship with peers and other age group or escaped from social life as a necessity of fulfilled social life.

According to finding of this study, low level negative relationship was determined between internet and mother-father relationship. Based on results of findings obtained from this study, it can be commented that as mother and father relationships increased, internet addiction levels will decrease. One of the results in the literature that is close to this finding state that as democratic mother-father attitude level increased, problematic internet use will decrease (Altıntaş & Öztapak, 2016). According to that study, as authoritarian and protective-demanding parent attitude increased, desire to use internet and internet usage frequency increases. Children with negligent and disinterested families had higher internet addiction levels compared to children with democratic and tolerant parents. It can be stated that this result is obtained as adolescence with disinterested and uncontrolled parents had higher internet addiction risk as they are more involved with internet. According to another supportive study finding, it was determined that there is significant negative relationship between internet addiction in adolescence and social support perceived in family (Esen & Siyez, 2011). It was found that students that believed their family relationships are not positive or at desired level had higher internet addiction levels (Kayri et al., 2014). Based on obtained results, it is believed that adolescents with internet addiction are adolescents that have weak family relationships or adolescents that are neglected by their families.

Another study finding is that there was low level positive relationship between internet addiction and peer relationships. There are studies that support this finding. As it is known, communication with friends is important for adolescence that share their problems with friend groups rather than families and adolescents that form such communication have higher internet usage time, at the same time, it was found that internet usage had no deep effects to form strong connections with real life compared to individuals with good family and good friend circle. Similarly, it was determined that adolescents with high internet addiction level had high peer togetherness levels (Savcı & Aysan, 2016). In another study, it was determined that adolescent friend attachment level had positive significant relationship with internet addiction level (Çevik & Çelikkaleli, 2010). Based on these results, it is striking that internet usage among adolescents is increasing every day. In this sense, it can be considered that adolescents are forming intense relationships with friends over the internet and that this situation unconsciously leads adolescents towards internet addiction. However, on the other hand,



on contrary to study findings, there was a finding in the literature that stated internet addiction increased as perceived social support from friends decreased (Kayri, et al., 2014). Similarly, Demir (2016) stated that adolescence that use internet more have lower family relationship.

Another finding obtained from this study showed that there was low level positive significant relationship between adolescence peer relationship and mother and father relationship. Totan and Yöndem (2007) stated that positive increase of adolescence relationship between mother and father positively affected peer relationship and decreased considering adolescence in bully status. Erbil, Divan and Önder (2006) found that adolescence with high anomalous behaviour showed insufficient mother and father relationship level in mother-father adolescence relationship style. As it can be seen, obtained study results showed that there is positive relationship between mother father adolescence relationship and peer relationship. It can be stated that findings of this study are supported by literature.

Based on study finding, internet addiction level of adolescence predicted mother relationship and control, father relationship and control levels in negative direction. In other words, in this sample students with high internet addiction had low mother relationship and control perception and father relationship and control perception. There are studies in the literature that support this result. According to this study, gender, loneliness, social support perceived in family and perceived academic success variables are most important predictors of internet addiction respectively (Esen & Siyez, 2011). Based on another finding from this study, internet addiction levels predict peer relationship level at positive level. In other words, students with high internet addiction has higher tendency to have positive relationships with friends. There are parallel results in the literature. Zorbaz and Dost (2014) found that problematic internet use levels of high school students predicted self-disclosure and loyalty sub-dimension of peer relationship, however, it was not significant predictor for attachment, trust and identification sub-dimensions. According to another study in the literature, it was determined that there was moderate level significant relationship between internet addiction and peer pressure. Results of the same study showed that peer pressure variable explained 33% of total variance of internet addiction scores (Satan, 2013).

## 5. Conclusion

In findings of this study, while there was significant difference in mother relationship scale score for gender, there was no significant difference for internet addiction, father relationship and peer relationship scale scores. In this study, it was found that mother relationship and control perception score of female students is significantly higher than male students. In this study, it was determined that internet addiction, mother relationship, father relationship and peer relationship scale scores had significant multi-variable basic effect for internet usage time variable. Accordingly, it was determined that addiction level of students that use internet everyday was higher than students that use internet once a week or eight or more days. As another finding of this study, it was found that internet addiction scores had low level negative relationship with mother relationship and father relationship and low-level positive relationship with peer relationship. In this study, it was found that students with high internet addiction had low mother relationship and control perception and father relationship and control perception, while these students might have high tendency to have positive relationship with peers. Based on results obtained from this study, following recommendations are provided.

- Organising training for mothers and fathers by school guidance services for effective adolescent-parent behaviour.
- Organising seminars by school guidance services to raise awareness on conscious internet use.
- Guiding students to social activities by families and school guidance services for students to socialise and spend enjoyable time together.

This study was applied on an unclassified sample in terms of internet addiction. It is recommended to work on individuals with internet addiction in future studies to obtain different results.

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## Genişletilmiş Özet

*İnternet ulaşımının kolay ve hızlı olması, okuldaki ödev ve uygulamaların internet üzerinden yapılıyor olması internetin ergenler tarafından kullanımını yaygınlaştırmaktadır. Sosyal becerileri zayıf olan ergenlerin çevreleriyle sağlıklı iletişim kuramamaları olasıdır. İnternet üzerinden kurulacak olan iletişim ergenlerin kendilerini gösterebilecekleri bir platform gibidir (Köse, 2016). Ergenlik çağındaki bireylerin aileleriyle olan ilişkisinin sağlıklı olması, ergenin daha kolay bir ergenlik geçirmesinde etkili olduğu kabul edilmektedir. Problemlerini davranış gösteren ergenlerin aileleriyle ilişkilerinde de problemler olduğu görülmektedir. Ergenlerin çeşitli bağımlılıklara yönelmesi, gelişim dönemlerinde istenmedik davranışlar olarak bilinmektedir (Altıntaş & Öztapak, 2016; Çevik & Çelikkaleli, 2010). Ayas ve Horzum'un (2013) çalışmasında ihmalkâr tutum sergileyen ebeveynlerin çocuklarının internet bağımlılık düzeyleri, müsamahakâr ve demokratik ebeveyn*

tutum sergileyen ebeveynlerin çocuklarına göre daha fazla olduğu sonucuna ulaşılmıştır. Benzer şekilde ebeveynlerine güvenli bağlanan ergenlerin daha etkili başa çıkma davranışları gösterdiği (Morsünbül & Çok, 2011) ve güvenli bağlanmanın ergenlerin internet bağımlılığı riskini azalttığını, saplantılı ve kayıtsız bağlanmanın ise internet bağımlılığı riskini artırdığı (Savcı & Aysan, 2016) sonuçlarına ulaşılmıştır.

İnternet bağımlılığı gibi bir kavramın ortaya çıkmasıyla birlikte, internet bağımlılığın bireyin ruh sağlığı ve fiziksel sağlığı üzerindeki olumsuz etkileri göz önüne alındığında bu sorunun erken dönemde fark edilmesi ve sorunun çözümü için önleme çalışmalarının planlanmasının oldukça önemlidir (Esen & Siyez, 2011). Bu açıklamalardan da anlaşılacağı üzere ergenlik döneminde ilişkiler çocukluk dönemine göre farklılaşmakta ve yeni boyut kazanmaktadır. Bu nedenle ergenleri bu süreçte kişisel ve sosyal uyum düzeylerini artırarak sosyal beceriler kazanmaları yönünde desteklemek önemlidir. Ergenlerin sağlıklı gelişimlerini engelleyebilecek olası problemlerin giderilmesine yönelik önlemlerin alınması gerekmektedir. Bu kapsamda da ergenlerde internet bağımlılığının ve bu bağımlılığın ergenin aile ve akranları ile ilişkisine etkisinin incelendiği bu çalışmanın sonuçlarının alana ve uygulayıcılara katkı sağlayacağı da düşünülmektedir. Bu açıklamalardan anlaşılacağı üzere bu çalışmada, ergenlerin internet bağımlılığının anne-baba ergen ilişkisi ve akran ilişkisi açısından incelenmesi amaçlanmaktadır.

İlişkisel tarama modelinde betimsel yöntemin kullanıldığı bu araştırmanın örneklemini 592 öğrenci oluşturmaktadır. Veriler İnternet Bağımlılığı Ölçeği (İBÖ), Anne- Baba İlişkileri Ölçeği (ABIÖ) Akran İlişkileri Ölçeği (AİÖ) ve Kişisel Bilgi Formu ile toplanmıştır. Verilerin analizinde, Tek Yönlü Çok Değişkenli Varyans Analizi (MANOVA), korelasyon analizi kullanılmıştır.

Elde edilen bulgulara göre internet bağımlılığı, anneye ilişkiler, babayla ilişkiler ve akran ilişkileri ölçeği puanlarının cinsiyet değişkenine göre çok değişkenli temel etkisinin anlamlı olduğu görülmüştür. İnternet kullanım sıklığı değişkenine göre internet bağımlılığı ölçeği ve akran ilişkileri ölçeği puanları anlamlı bir farklılık gösterirken, anneye ilişkiler ve babayla ilişkiler ölçeği puanları anlamlı bir farklılık göstermemektedir. İnternet bağımlılığı ölçeği puanları, anneye ilişkiler ölçeği, babayla ilişkiler ölçeği puanları ile düşük düzeyde negatif yönde ilişkiyken akran ilişkileri ölçeği puanlarıyla düşük düzeyde pozitif yönde ilişkilidir. Akran ilişkileri ölçeği puanları ise anneye ilişkiler ölçeği puanları ve babayla ilişkiler ölçeği puanları ile düşük düzeyde pozitif yönde ilişkilidir.

Araştırmadan elde edilen sonuçlara göre anne-babalara sağlıklı internet kullanımı ile ilgili seminerlerin verilmesi, okul rehberlik servisleri tarafından öğrencilere farkındalık oluşturmak amacıyla bilinçli internet kullanımı konusunda seminerlerin verilmesi, öğrencilerin sosyalleşmeleri ve birlikte eğlenceli vakit geçirmelerini sağlamak amacıyla aileler ve okul rehberlik servislerinin öğrencileri sosyal aktivitelere yönlendirmeleri önerilmektedir.