

Investigation of the Effects of Social Self-Confidence, Social Loneliness and Family Emotional Loneliness Variables on Internet Addiction

[1] iskender@sakarya.edu.tr
Sakarya University, Faculty of
Education, Sakarya, Turkey

Murat İskender [1]

<http://dx.doi.org/10.17220/mojet.2018.03.001>

ABSTRACT

This study aimed to investigate the relationship between internet addiction levels and social loneliness, family emotional loneliness and lack of social self-confidence levels of high school students. The study was conducted with 328 high school students. One hundred and sixty-five of the participants (50,3 %) were females and 163 (49,7 %) were males. The data were obtained with Internet Addiction Scale, Interpersonal Sensitivity Measure, and Social and Emotional Loneliness Scale. The study results showed that internet addiction and lack of social self-confidence, social loneliness and family emotional loneliness were related. As the result of stepwise regression analysis, it was found that the variable which best predicts internet addiction is the lack of social self-confidence ($R=0,649$, $R^2=0,422$), and that it was followed by social loneliness and family emotional loneliness respectively. The findings of the study were discussed in relation to the literature and some suggestions were presented.

Keywords: family emotional loneliness, high school students, internet addiction, social loneliness, social self-confidence

INTRODUCTION

The rapid developments in technology have made internet addiction an important behavioral, psychological and social health problem in recent years. The fact that social media, online games, chat, follow-up, banking, entertainment and other transactions can be done via the internet strengthens the addiction on internet. Internet, an important part of everyday life around the world, is a rapidly increasing tool for use not only among young people but also among adults and children. Besides being useful, it is known that overuse of the internet causes many health problems. Despite of being an indispensable part of everyday life for students, internet is seen as a serious problem that can result in academic failure, and negatively affects academic career and mental health (Geng, Han, Gao, Jou, Huang, 2018). Various studies have shown that excessive use of internet is particularly associated with physical and psychological problems (Greenfield, 2000; Hur, 2006), and that more importantly it leads to internet addiction (Young, 1998; Murali & George, 2007). Internet addiction is defined as a deficiency in controlling internet use which ultimately causes deterioration in psychological functions, interpersonal relations and academic performance (Young,1998; Davis,2001).

Internet addiction has many negative effects the individuals. For example, less life satisfaction (Ko, Yen, Chen, & Yen, 2005; Van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008) (Moody, 2001; Nalwa & Anand, 2003; Ang, Chong, Chye, & Huan, 2012), family relations (Armstrong, Lagos, Baiocco, Lonigro,

Capacchione, & Baumgartner, 2012), and social isolation (Shaw & Black, 2008) are just some of them. There is a linear relationship between Internet addiction and depression, social isolation, loneliness, home-school and job performance decline (Caplan, 2002).

It can be said that the time spent on the internet has a negative effect on social relationships, and that it leads a person to both as social and emotional loneliness as long as he/she is online. It is thought that the problems in social and family relations may have an effect on a person's addiction. Loneliness is the feeling of the individual's lack of personal relationships with others (Fees, Martin, & Poon, 1999; Rook, 1989), and the lack of social networking in relationships. According to Weis (1973), loneliness includes both emotional loneliness and social isolation. Emotional loneliness is that an individual feels nothing for anybody or anything. Social loneliness is the lack of one in which the individual can share his feelings, dreams, ideals and insights. Loneliness is also a multidimensional phenomenon, varying in intensity, and across causes and circumstances (Salimia, 2011). The researches show that loneliness is related to social support (Wright, 2005), lower self-esteem (Levin and Stokas, 1986; Vanhalst, Goossens, Luyckx, Scholte, Engels, 2013), family problems (Wiseman, Mayseles and Sharabany, 2005), personality traits (Saklofske and Yackulic, 1989), social skills (Ponzetti and Cate, 1988), interpersonal trust (Rotenberg, 1994), self-criticism (Wiseman, 1997) poorer academic performance (Benner, 2011), and internet addiction (Huan, Ang, Chye, 2014; Özdemir, Kuzucu, Ak, 2014).

As shown in the research results, problematic family relations, self-esteem, social support, social skills, and inadequacy in interpersonal reliance can also be regarded as sources of low social self-efficacy as well as they are associated with loneliness. Lack of social self-efficacy is one of the factors that increase interpersonal sensitivity. Interpersonal sensitivity includes unreasonable and extreme awareness and sensitivity to the behavior and thoughts of others. In addition, the sense of personal inadequacy is often formed by misinterpreting the behavior of others, avoiding interpersonal relationships, and experiencing uneasiness in environments with others (Boyce, Hickie, Parker, Mitchell, Wilhelm, & Brodaty, 1992). When the low level of social self-confidence is combined with the feeling of personal inadequacy, the person's interpersonal sensitivity increases and the probability of choosing loneliness is getting stronger. Thus, the lack of social self-confidence will turn into a situation which leads an individual to avoid environments and interpersonal relationships with others, and to spend time in internet environment where he can express himself. Considering the positive relationship between loneliness, internet addiction (Huan, Ang, Chye, 2014; Moody, 2001; Ang, Chong, Chye, & Huan, 2012) and lower social self-efficacy (Iskender, Akin, 2010), it can be said that the lack of social self-confidence may strengthen this relationship.

When literature was examined, it was found that there was no study investigating the relationship between high school students' internet addiction levels and social loneliness, family emotional loneliness and lack of social self-confidence. In addition, revealing the relationship between the presented study and the mentioned variables will make it easier to present the proposals for prevention. Besides, revealing the relationships between the aforementioned variables in this study will facilitate to offer prevention suggestions. For these reasons, it was hypothesized that social loneliness, lack of social self-confidence, and loneliness in family relationships would be associated positively with internet addiction. In addition, it was also hypothesized that internet dependence is predicted by these three variables.

METHOD

In this study, it was aimed to examine the relationship between The Internet addiction levels of high school students and social loneliness levels, family emotional loneliness and lack of social self - confidence. Hence, the study which is a quantitative study is based on a relational research design. Relational research designs are used to determine the relationship and level of relationship between two or more variables and to predict possible outcomes from these relationships (Creswell, 2012; Fraenkel, Wallen, & Hyun, 2012).

Participants

The study group of the research consisted of 328 students who study in a high school. The Distribution of participants in the survey according to gender, age and income levels are presented in Table 1.

Table 1. Distribution of students in the study group by gender, age and income level

		F	%
Gender	Female	165	50,3
	Male	163	49,7
Age	14	25	7,6
	15	167	50,9
	16	125	38,1
	17	11	3,4
Income level	Inadequate	13	4,0
	Moderate	231	70,4
	Good	84	25,6
Total		328	

When Table 1 is examined, it is seen that 165 (50.3%) of the participants are female and 163 (49.7%) are male. In addition, the age range of the participants range from 14 to 17 years and 25 (7.6%) are 14 years old, 167 (50.9%) are 15 years old, 125 (38.1%) are 16 years old, 11 years old. Participants' income levels were categorically asked and divided into categories as inadequate, and good. According to this, 4% of the respondents said that they are in the level of inadequate income, 70.4% are in the moderate level and 25.6% are in the good level.

Data Collection Tools

Internet Addiction Scale (Internet Addiction Scale)

The Internet Addiction Scale developed by Young (1996) was adapted to Turkish by Bayraktar (2001) and the Cronbach alpha internal consistency coefficient was found to be 0.91. It is a Likert type scale rated 0-5. The Internet Dependency Scale requires the marking of " Never ", " Rarely ", " sometimes ", " often ", " Very often " or " always " .

Interpersonal Sensitivity Measure

The scale was developed by Boyce and Parker (1989). The Turkish form of the scale was adapted by Dogan and Sapmaz (2012). As a result of the factor analysis, of the three factors which are different from the original five-factor scale, the first factor is called "inter-personal anxiety and addiction", the second is called "lack of social confidence", and the third is called "non-aggressive behaviours".

In this context, the Cronbach alpha internal consistency coefficient for the scale was found to be .81. In terms of sub-dimensions, the internal consistency coefficient was found to be .84 for "personal anxiety and addiction" subscale, .64 for "lack of social confidence" subscale, and .73 for "non-assertive behaviour" subscale. In this study, the lack of social self-confidence subscale was used for the interpersonal sensitivity scale.

Social and Emotional Loneliness Scale

The original scale consisting of fifteen items was developed by Ditommaso, Brannen, and Best (2004), and its adaptation to Turkish was held by Chechen (2007). Social and Emotional Loneliness Scale consists of three sub-dimensions: loneliness in family relations, romantic relationships, and social relations. The scale consists of 7 Likert scale grading (1: strongly disagree, 7: strongly agree). When the reliability coefficients of the scale are examined, loneliness sub-dimension is found to be .76 for the family relations, .84 for romantic relations, and .74 for social relations (Çeçen, 2007).

Data Analysis

From the data obtained from the study, a simple correlation analysis was conducted in the analysis of the relationship between the internet addiction levels of students, social loneliness levels, family emotional loneliness, and lack of social self-confidence. Multilinear regression analysis was carried out to examine whether internet addiction could be predicted by social loneliness levels, family emotional loneliness, and lack of social self-confidence based on the relationship obtained. In regression analysis, in order to determine the best predictor of internet dependency stepwise regression analysis was carried out.

FINDINGS

The relationship between the internet addiction levels of 328 high school students participating in the study and their social loneliness levels, family emotional loneliness, and lack of social self-confidence was examined by simple correlation analysis. The descriptive statistics of correlated variables and the correlation values of the variables are presented in Table 2.

Table 2. Descriptive statistics and correlation values of internet addiction levels, social loneliness levels,

	\bar{X}	SS	IA	1	2	3
Internet Addiction (IA)	32,9573	20,30949				
Predictive variables						
1.Lack of social self-confidence	20,3049	5,60567	0,649**			
2.Social Loneliness	13,0213	6,33877	0,577**	0,410**		
3.Family emotional loneliness	20,2561	6,58199	0,394**	0,334**	0,559**	

family emotional loneliness, and lack of social self-confidence scores.

**p<0,01

Table 2 shows that there is a statistically significant relationship between the Internet addiction and social loneliness, family emotional loneliness, and lack of social self-confidence. It has been found out that the internet addiction is positively and moderately related ($r = 0.394$, $p < 0.01$) to lack of social confidence ($r = 0.649$, $p < 0.01$), social loneliness ($r = 0.577$; $p < 0.01$), and family emotional loneliness. When the relationship levels are examined, the highest relationship is seen between the internet addiction and lack of social self-confidence. It is followed by social loneliness and family emotional loneliness respectively.

Multiple linear regression analysis was used to examine whether the internet dependence was predicted by these variables which have a relationship as shown above. For the applicability of the regression analysis, the correlation between the independent variables and the dependent variable should be meaningful and the relation between the independent variables should not be higher than 0.80 (Büyüköztürk, 2006). The correlation values obtained in Table 2 show the suitability of these variables for multiple regression analysis. In addition, the Variance Increase Factor (VIF), Tolerance Value, and Condition index (CI) values are examined to check the multiple connection hypotheses from the basic assumptions of the multiple regression analysis. The results obtained are given in Table 3.

Table 1. Coefficient Table for Multiple Connection Assumption.

	Tolerance value	Variance Increase Factor (VIF)	Condition Index (CI)
Stable			1,000
Lack of social self-confidence	0,816	1,225	5,582
Social loneliness	0,631	1,584	8,885
Family emotional loneliness.	0,674	1,484	10,831

It is expected that the Tolerance value examined for the multiple link assumption is higher than 0.10, the Variance Increase Factor (VIF) value is less than 10, and the Condition Index (CI= Condition Index) is less than 30 (Hair, Black, Babin, Anderson & Tatham, 2006; Tabachnick, Fidell, & Osterlind, 2001; Uyanik and Güler, 2013). When examined in terms of all these boundaries, it is seen that there is no multiple connection problems in the data set used in the study and the data are suitable for multiple linear regression analysis.

Internet addiction of high school students; lack of social self-confidence, social loneliness levels and family emotional loneliness were used to examine the effect of predictive variables on internet addiction using multiple regression analysis using stepwise regression technique. By taking account of the relationship between the independent variables and the internet addiction in the stepwise regression, the predictive variables were included in the model and the results are given in Table 4.

Table 2. The level of predicting internet addiction of the lack of social self-confidence, social loneliness and family emotional loneliness variables.

Model	Predictive Variables	B	Standard Error	β	t
1	Stable	5,866	1,954		3,003**
	Lack of social self-confidence	2,080	0,135	0,649	15,416**
		R=0,649	R ² =0,422	F=237,664	p=.000
2	Stable	-11,123	2,565		-4,336**
	Lack of social self-confidence	1,589	0,132	0,496	12,004**
	Social Loneliness	1,154	0,128	0,374	9,053**
		R= 0,734	R ² = 0,538	F=189,325	p=.000
3	Stable	-12,160	3,069		-3,962**
	Lack of social self-confidence	1,578	0,134	0,493	11,792**
	Social Loneliness	1,110	0,147	0,360	7,573**
	Family emotional loneliness	0,103	0,167	0,028	1,617*
		R= 0,751	R ² =0,564	F=126,103	p=.000

The Dependent Variable: Internet addiction, *p<0.05; **p<0.01

When the findings in Table 4 are examined, it is seen that the regression model created to determine the total internet dependency power of the independent variables is statistically significant [F = 126,103, p <0.01]. According to the results of stepwise regression analysis, 3 steps were included in the multiple regression analysis.

In the first step of the stepwise regression, the predicted lack of social confidence analysis may explain 42% of the total variance related to internet dependence (R = 0.649, R² = 0.422). In this step, Beta coefficient

of lack of social self-confidence was 0.649 and t value was statistically significant ($t = 15,416$, $p < 0,01$).

In the second step of the stepwise regression analysis, the social loneliness variable has been included in the model along with the lack of social self-confidence. Lack of social self-confidence and social loneliness variables together can explain 54% of the Internet addiction ($R = 0,734$, $R^2 = 0,538$). In this case, it can be said that the social loneliness variable contributes 12% to the equivalence. In the second model, Beta coefficient of lack social variable is 0,496; Beta coefficient for the variable of social loneliness was calculated as 0,374. The t values for both variables were statistically significant ($t = 12,004$, $t = 9,053$, $p < 0,01$, respectively).

In the third step of the stepwise regression analysis, family emotional loneliness variables were included in the model as well as the lack of social self-confidence and social loneliness variables. Three of the variables of social self-confidence, social loneliness and family emotional loneliness together can explain 56% of total variance related to the internet dependence ($R = 0.75$, $R^2 = 0.564$). Accordingly, it can be said that the variable of the family emotional loneliness contributed 2% to the regression equation. In this step, the Beta coefficient for the variable of lack of social self-confidence was calculated as 0,493, Beta coefficient for the social loneliness variable was 0,360 and Beta coefficient for the family emotional loneliness variable was calculated as 0,028. The t values of all three variables were found to be statistically significant ($t = 11,792$, $t = 7,573$, $p < 0,01$; $t = 1,617$, $p < 0,05$, respectively).

When the values of Beta and R^2 were examined in terms of social self - confidence, social loneliness and family emotional loneliness variables, it was found that the internet addiction of the high school students was statistically significant in that lack of social self – confidence comes first, social loneliness comes second and family emotional loneliness comes in the third place. According to the results of the multiple regression analysis, the regression equation for predicting students' internet dependence is as follows:

$$\begin{aligned} \text{Internet addiction} = & -12,160 + 1,578 * (\text{lack of social self-confidence}) + 1,110 * (\text{social loneliness}) \\ & + 0,103 * (\text{family emotional loneliness}) \end{aligned}$$

DISCUSSION

In this study, it was aimed to investigate the relationship between the high school students' internet addiction levels and social loneliness, family emotional loneliness and lack of social self - confidence. As the result of the study, internet addiction and lack of social self-confidence, social loneliness and family emotional loneliness were found to be related. The stepwise regression analysis showed that the variable which best predicts internet addiction was the lack of social self-confidence, and that it was followed by social loneliness and family emotional loneliness respectively.

Firstly, results of this study demonstrated that lower social self-confidence, social loneliness, and family emotional loneliness were related positively to internet addiction. This result overlaps with the literature. It can be said that young people who have low self-esteem and inadequacy feel shy in friendship relations and have less relationship with their friends (Wadell, 1984), and therefore low self-confidence leads to loneliness. Considering the fact that social self-confidence is influenced by social skills, it can be said that individuals with low social skills receive less social support than those with high social skills (Argyle, 1992), especially the support that can not be obtained from family and friends directs an individual to loneliness and internet. At this point, The individual may now be someone who avoids interpersonal relationships and is experiencing discomfort in environments with others (Boyce et al., 1992). There is a linear relationship between internet addiction and loneliness (Nalwa & Anand, 2003; Ang et al., 2012), family relations (Lo Cascio et al., 2013; Laghi et al., 2012), social isolation (Caplan, 2002; Shaw & Black, 2008), and decrease in home-school performance (Caplan, 2002).

Secondly, it was found that the variables which predict internet addiction were lack of social self-confidence, social loneliness and family emotional loneliness respectively. In addition to the lack of social self-confidence, that social loneliness and family emotional loneliness predict Internet addiction supports literature. The researches shows that Loneliness is related to social support (Wright, 2005), family problems (Wiseman et al. 2005), social skills (Ponzetti and Cate, 1988), interpersonal trust (Rotenberg, 1994), poorer academic performance (Benner, 2011), personality traits (Saklofske and Yackulic, 1989), and internet addiction (Moody, 2001; Nalwa & Anand, 2003; Ang et al., 2012; Huan, Ang, Chye, 2014; Özdemir, Kuzucu, Ak, 2014).

In conclusion, it can be considered that some contributions can be made to the literature with this study. Primarily, this study is important because it examines internet addiction, lack of social self-confidence, social loneliness and family emotional loneliness together. That the study group consisted of the high school students may be the limitation of this study. The researchers can achieve this limitation by working with more extensive groups. In addition, only variables of social self-efficacy, social loneliness and family emotional loneliness were used to predict internet addiction. This study can be done with different variables by taking advantage of the field.

REFERENCES

- Ang, R. P., Chong, W. H., Chye, S., & Huan, V. S. (2012). Loneliness and generalized problematic Internet use: Parents' perceived knowledge of adolescents' on-line activities as a moderator. *Computers in Human Behavior*, 28(4), 1342-1347.
- Argyle, M. (1992). Benefits produced by supportive relationships. In *The Meaning and Measurement of Social Support: The Series in Clinical and Community Psychology*, H. O. F. Veiel and U. Baumann, et al. (Eds). New York, NY, U.S.A.: Hemisphere Publishing Corp., pp. 13-32.
- Armstrong, L., Phillips, J., & Saling, L. (2000). Potential determinants of heavier internet usage. *International Journal of Human-Computer Studies*, 53, 537-550.
- Bayraktar F. Ergenlik döneminde internet kullanımının rolü. Yayınlanmamış Yüksek Lisans Tezi, İzmir, Ege Üniversitesi, Sosyal Bilimler Enstitüsü, 2001.
- Benner, A.D. (2011). Latino adolescents' loneliness, academic performance, and the buffering nature of friendships. *Journal of Youth and Adolescence*, 40(5), 556-567.
- Boyce, P. & Parker, G. (1989). Development of a scale to measure interpersonal sensitivity. *Australian and New Zealand Journal of Psychiatry*, 23, 341-351.
- Boyce, P., Hickie, I., Parker, G., Mitchell, P., Wilhelm, K. & Brodaty, H. (1992). Interpersonal sensitivity and the one-year outcome of a depressive episode. *Australian and New Zealand Journal of Psychiatry*, 26, 156-161.
- Büyüköztürk, Ş. (2006). *Sosyal Bilimleri İçin Veri Analizi El Kitabı İstatistik Araştırma Deseni-SPSS Uygulamaları ve Yorum*, Pegem Yayıncılık, Ankara.
- Creswell, J. W.(2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*, 4.

- Caplan, S. E. (2005). A social skill account of problematic internet use. *The Journal of Communication*, 55(4): 721-736.
- Çeçen, A.R. (2007). The Turkish version of the social and emotional loneliness scale for adults (SELSAS): Initial development and validation. *Social Behaviour and Personality*, 35(6), 717-734.
- Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers and Human Behaviour*, 17(2),187–195.
- DiTommaso, E., Brannen, C., & Best, L. A. (2004). Measurement and validity characteristics of the short version of the Social and Emotional Loneliness Scale for Adults. *Educational and Psychological Measurement*, 64, 99-119.
- Doğan, T., Sapmaz, S. (2012). Psychometric analysis of the interpersonal sensitivity measure (IPSM) among Turkish undergraduate students. *Kuramsal Eğitim Bilim Dergisi*, 5(2), 143-155.
- Dykstra, P. A., & Fokkema, T. (2007). Social and Emotional Loneliness Among Divorced and Married Men and Women: Comparing the Deficit and Cognitive Perspectives. *Basic And Applied Social Psychology*, 29(1), 1–12.
- Fees, B. S., Martin, P., & Poon, L. W. (1999). A model of loneliness in older adults. *Journal of Gerontology, Psychological Sciences*, 54B, 231–239.
- Fraenkel, J., Wallen, N., & Hyun, H.H. (2012). *How to design and evaluate research in education* (8th ed.). Boston: McGraw Hill.
- Geng, J., Han, L., Gao, F., Jou, M., Huang, C-C. (2018). Internet addiction and procrastination among Chinese young adults: A moderated mediation model. *Computers in Human Behavior*, 84, 320-333.
- Greenfield, D. N. (2000). Psychological characteristics of compulsive internet use: A preliminary analysis. *CyberPsychology & Behavior*, 5, 403–412.
- Hair J.F., Black W.C., Babin B. J., Anderson R.E. & Tatham R. L. (2006). *Multivariate Data Analysis* (Sixth Edition). Prentice Hall, New Jersey
- Huan, V.S., Ang, R.P., Chye, S. (2014). Loneliness and shyness in adolescent problematic internet users: the role of social anxiety. *Child & Youth Care Forum*, 43(5), 539–551.
- Hur, M. H. (2006). Demographic, habitual, and socioeconomic determinants of internet addiction disorder: An empirical study of Korean teenagers. *CyberPsychology & Behavior*, 9(5), 514–525.
- İskender, M., Akin, A. (2010). Social self-efficacy, academic locus of control, and internet addiction. *Computers & Education*, 54, 1101–1106.
- Ko, C. H., Yen, J. Y., Chen, C. C., Chen, S. H., & Yen, C. F. (2005). Gender differences and related factors affecting online gaming addiction among Taiwanese adolescents. *Journal of Nervous and Mental Disease*, 193(4), 273–277.

- Levin, I. & Stokas, J.P. (1986). An examination of the relation individual difference variables to loneliness. *Journal of Personality*, 54, 717-733.
- Lo Cascio, V., Guzzo, G., Pace, F., & Pace, U. (2013). Anxiety and self-esteem as mediators of the relation between family communication and indecisiveness in adolescence. *International Journal for Educational and Vocational Guidance*, 13(2), 135-149.
- Moody, E. J. (2001). Internet use and its relationship to loneliness. *CyberPsychology and Behavior*, 4(3), 393-401. doi:10.1089/109493101300210303.
- Murali, V., & George, S. (2007). Lost online: An overview of internet addiction. *Advanced Psychiatry Treatment*, 13, 24-30.
- Nalwa, K., & Anand, A. (2003). Internet addiction in students: A cause of concern. *CyberPsychology & Behavior*, 6(6), 653-656.
- Özdemir, Y., Kuzucu, Y., Ak, Ş. (2014). Depression, loneliness and Internet addiction: how important is low self-control? *Computers and Human Behavior*, 34, 284-290.
- Ponzetti, J. J. and Cate, R. M. (1988). The relationship of personal attributes and friendship variables in predicting loneliness. *Journal of College Student Development*, 29, 292-298.
- Rook, K. S. (1989). Towards a more differentiated view of loneliness. In S. W. Duck (Ed.), *Handbook of personal relationships: Theory, research and interventions* (pp. 571-589). New York: Wiley.
- Rotenberg, K. J. (1994). Loneliness and interpersonal trust. *Journal of Social and Clinical Psychology*, 13, 152-173.
- Saklofske, D. H. and Yackulic, R. A. (1989). Personality predictors of loneliness. *Personality and Individual Differences*, 10, 467-472.
- Salimia, A. (2011). Social-emotional loneliness and life satisfaction. *Procedia - Social and Behavioral Sciences* 29, 292 - 295.
- Shaw, M., & Black, D. W. (2008). Internet addiction: Definition, assessment, epidemiology and clinical management. *CNS Drugs*, 22(5), 353-365. doi: 10.2165/00023210-200822050-00001.
- Tabachnick, B. G., Fidell, L. S., & Osterlind, S. J. (2001). *Using multivariate statistics*. Allyn and Bacon Boston
- Uyanık, G. K., & Güler, N. (2013). A study on multiple linear regression analysis. *Procedia-Social and Behavioral Sciences*, 106, 234-240.
- Van den Eijnden, R. J., Meerkerk, G. J., Vermulst, A. A., Spijkerman, R., & Engels, R. C. (2008). Online communication, compulsive internet use, and psychosocial wellbeing among adolescents: A longitudinal study. *Developmental Psychology*, 44(3), 655-665.

- Vanhalst, J., Goossens, L., Luyckx, K., Scholte, R.H., Engels, R.C., 2013. The development of loneliness from mid-to late adolescence: trajectory classes, personality traits, and psychosocial functioning. *Journal of Adolescence*, 36(6), 1305–1312.
- Wadell, J. W. (1984). The self concept and social adaptation of hyperactive children in adolescence. *Journal of Clinical Psychology*, 13, 50–55.
- Weiss, R.S. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: MIT Press.
- Wiseman, H. (1997). Interpersonal relatedness and self-definition in the experience of loneliness during the transition to university. *Journal of Social and Personal Relationships*, 4, 285–299.
- Wright, S.L. (2005). Organizational climate, social support and loneliness in the workplace. *Research on Emotion in Organization*, 1(1), 123-142.
- Yang, L., Sun, L., Zhang, Z., Sun, Y., Wu, H., & Ye, D. (2014). Internet addiction, adolescent depression, and the mediating role of life events: Finding from a sample of Chinese adolescents. *International Journal of Psychology*, 49(5), 342e347.
- Yen, J., Ko, C., Yen, C., Wu, H., & Yang, M. (2007). The comorbid psychiatric symptoms of internet addiction: Attention deficit and hyperactivity disorder (ADHD), depression, social phobia, and hostility. *Journal of Adolescent Health*, 41, 93–98.
- Young, K. S. (1996). Internet Addiction: The emergence of a new clinical disorder. Paper presented at the 104th Annual Meeting of the American Psychological Association, Toronto, Ontario, Canada
- Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior*, 1(3), 237–244.