

Available online at www.sciencedirect.com**ScienceDirect**

Procedia - Social and Behavioral Sciences 103 (2013) 606 – 611

Procedia
Social and Behavioral Sciences13th International Educational Technology Conference**LONELINESS AND MOBILE PHONE**Çetin TAN^{a*}, Mustafa PAMUK^b, Ayşenur DÖNDER^c^a *Siirt University, Faculty of Education, "Siirt", Turkey*^b *Firat University, Faculty of Education, "Elazığ", Turkey*^c *Firat University, Faculty of Education, "Elazığ", Turkey***Abstract**

The aim of this study is to analyse loneliness of university students according to mobile phone addiction, daily phone use time and gender. Survey model is used for this research. To collect data; personal information form, problematic mobile phone use scale, and UCLA-loneliness scale were applied for 527 students who are from different Departments of Faculty of Education at Firat University. To analyse these data; correlation, t test, one way variance (ANOVA) analysis and Scheffe test were used. Results revealed that loneliness was significantly associated with problematic mobile phone use ($r=.35$) Furthermore, there were significant differences between loneliness and independent variables (gender, mobile phone addiction and daily phone use time). The results of the study were discussed together with the results of different studies and suggestions were made.

© 2013 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](http://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and peer-review under responsibility of The Association of Science, Education and Technology-TASET, Sakarya Universitesi, Turkey.

Keywords: loneliness, mobile phone, mobile phone addiction

1. INTRODUCTION

Loneliness is one of the most common feelings that individuals could experience in their lives. Loneliness is a negative emotion that comes about through a discrepancy between desired and achieved levels of social contact (Perlman & Peplau, 1981). According to Lopata (1969), loneliness is an emotion experienced by an individual who wishes for a level of contact unlike from the one currently encountered. The multiplicity of social relations does not matter but the quality of them is important. However, having more social relations may not always derive individuals a profit in social life. According to Masi, Chen, Hawkley, & Cacioppo (2011), an individual may be lonely in a crowd or socially contented while alone. When studies are analysed on loneliness, it is seen that loneliness is associated with some variables. Loneliness is related to the variables of depression (Anderson, & Arnoult, 1985; Brage, Meredith, & Woodward, 1993; Ceyhan, & Ceyhan, 2011; Nangle,

* Corresponding author. Tel.: +90 424 237 00 00/ 4927

E-mail address: cettan889@hotmail.com

Erdley, Newman, Mason, & Carpenter, 2003; Rotenberg, & Flood, 1999; Ünal, & Bilge, 2005; Wang, Yuen, & Slaney, 2009; Wei, Russell, & Zakalik, 2005; Yaacob, Juhari, Talib, & Uba, 2009), stress (Yaacob, Juhari, Talib, & Uba, 2009), internet addiction (Durak-Batıgün, & Hasta, 2010; Esen, & Siyez, 2011), shyness (Anderson, & Arnoult, 1985; Erözkan, 2009; Baş, 2010), alexithymia (Koçak, 2003; Özdemir, Güreş, & Güreş, 2011; Qualter, Quinton, Wagner, & Brown, 2009), self-esteem (Brage, Meredith, & Woodward, 1993; Güloğlu, & Kararımak, 2010; Sübaşı, 2007; Yaacob, Juhari, Talib, & Uba, 2009), hopelessness (Chang, Sanna, Hirsch, & Jeglic, 2010; Kırmoğlu, Filazoğlu-Çokluk, & Yıldırım, 2010; Pehlivan, Ovayolu, Ovayolu, Sevinç, & Camci, 2012; Ruchkin, Eisemann, & Häggglöf, 1999), social anxiety (Johnson, Lavoie, & Mahoney, 2001; Sübaşı, 2007). In recent years, the other variable which has studied together with loneliness is mobile phone addiction. (Jin, & Park, 2012; Reid, & Reid, 2007; Şar, 2013; Takao, Takahashi, & Kitamura, 2009; Wei, & Lo, 2006).

In addition to being a means of communication and having rapidly spreading use around the world, mobile phones, in particular the new generation of smart mobile phones, are technological tools due to offering many functions, such as providing short message service (SMS) to users, taking photos, playing games, using the Internet, connecting to social networks, providing navigation services, having a video player functionality, watching TV and shopping. Arslan and Unal (2013) indicated in their study that Faculty of Education students have widely used their mobile phones for the purpose of talking, messages, MP3/music, game, photo / camera and the Internet. They also remarked that students have taken quite a lot of time to use their mobile phones. Considering the facilities that a mobile phone provides to individuals as mentioned above, these facilities can be handled at the same time as the needs of individuals. While normal use of mobile phones is to restrict individuals' use of mobile phones in accordance with their needs, problematic use of mobile phones occurs due to the fact that individuals aren't able to restrict their use in accordance with the needs. The findings of some studies have indicated that problematic use of mobile phones has negative effects.. Ha, Chin, Park, Ryu ve Yu (2008) found that the excessive user group experienced more depressive symptoms, difficulty in expression of emotion than the comparison group did. Furthermore, excessive user group had higher interpersonal anxiety, lower self-esteem, higher score on the Internet Addiction Scale (IAS) than the comparison group. In Şar's (2013) study, the problematic phone use increases as talking time increases, however increase of talking time decreases loneliness level in teenagers. Jin and Park (2012) found that more face-to-face interactions were associated with lower levels of loneliness; however, more cell phone calling was associated with greater loneliness. Reid and Reid (2007) revealed that lonely people preferred calls and rated text such as short message service (SMS, or text messaging) as a less intimate method of contact. According to Takao, et al. (2009) it is conceivable that lonely people are eager to maintain contact with their peers through frequent calls so as to fulfill their loneliness. We therefore would expect that higher or problematic phone use is predicted by loneliness.

Mobile phones offer many possibilities presented by the Internet and computers. While computers and the Internet may cause loneliness of individuals, may mobile phone cause loneliness of individuals? In this context the purpose of the study is to examine loneliness of university students in terms of daily use of mobile phone, mobile phone addiction and gender.

2. METHOD

2.1. Participants

The sample group of this study is 527 students from different Departments of Faculty of Education at Firat University. 372 (%70,5) of the students are female, 155 (%29,5) of them are male, average age of students is 20,8 (Sd:2,8). All of participants had mobile phone (%100).

2.2. Instruments

UCLA Loneliness Scale (UCLA-LS): UCLA Loneliness Scale was developed by Russell, Peplau and Cutrona (1980); the validity and reliability of its adapted version is tested by Demir (1989). The scale measures the overall feelings of loneliness

in individuals through a self-report Likert-type scale comprised of 20 items. 10 of these items are positive statements and the rest are negative statements. The scale reports range from 20 to 80 where higher scores mean a higher degree of feelings of loneliness. Reliability of the scale is reported as .96. In the present study, the internal consistency coefficient of the scale was computed as .85.

Problematic Mobile Phone Use Scale (PMPUS): The Problematic Mobile Phone Use Scale developed by Bianchi and Phillips (2005) was adapted to Turkish by Şar and Işıklar (2012). In the frame of adaptation works, the scale items were primarily translated into Turkish and then the opinions of nine specialists were taken, and the translation was improved in line with those opinions. The English and Turkish forms generated were filled out by 30 undergraduate students having a good command of English with 2-week intervals. The correlation value between English and Turkish forms was calculated as 0,78 and both scales were accepted equal. The scale was applied to 300 students for validity – reliability studies. For Turkish form of the scale, Cronbach Alpha coefficient for internal consistency was calculated as 0,94 and reliability co-efficient as 0,88. As a result of these values obtained, Turkish form of the scale was accepted as reliable and valid. The scores that may be gotten over a 5-point likert type scale with 27 questions vary between 27 and 135. As the scores that are gotten over the scale get higher, the mobile phone addiction increases.

2.3. Procedure

Survey model is used for this research and to collect data; personal information form, PMPUS, and UCLA-LS were applied to 527 students from different Departments of Faculty of Education at Fırat University. PMPUS was categorised by using mean and standard deviation as addiction group (M+1Sd) and non addiction group (M-1Sd). Correlation test, t test and one way variance (ANOVA) were used in this study. Furthermore, to find out the differences among groups, Scheffé test was used.

3.FINDINGS

Table 1. Means, standard deviations, correlations, and alpha reliabilities for variables.

	1	2	Cronbach's Alpha
1. UCLA-LS	1		.85
2. MPA	.35*	1	.95
Mean	37,2	59,2	
Standart Deviation	9,7	21,6	

*p<.01

As seen in Table-1, the results indicated that there is a positive moderately relationship between mobile phone addiction and loneliness ($r=.35$).

Table 2. Means, standart deviations and t values of loneliness of university students according to gender

	Gender				t	p
	Female (n=372)		Male (n=155)			
	\bar{X}	Sd	\bar{X}	Sd		
UCLA-LS	35,8	9,4	40,6	9,4	-5,311	.000*

*p<.05

As seen in Table-2, there is a significant difference between males and females in relation to loneliness ($t(525)=-5,311$; $p<.05$). When these results analysed, it is seen that loneliness of men ($\bar{X} = 40,6$, $Sd=9,4$) is higher than the women ($\bar{X} = 35,8$, $Sd=9,4$).

Table 3. Means, standart deviations and F values of loneliness of university students according to daily phone use time

	Daily use					F	p	Differences
	<1 hour ^A	1-3 ^B	4-6 ^C	7-9 ^D	10 ^{≥E}			
	n=139	n=245	n=97	n=22	n=24			

UCLA-LS	\bar{X}	Sd	\bar{X}	Sd	\bar{X}	Sd	\bar{X}	Sd	\bar{X}	Sd	4,072	.003*	E>A, D>A C>A, B>A
	34,9	9,3	37,2	9,7	39,1	10,1	39,6	10,2	40,9	7,3			

*p<.05

As seen in Table-3, the result showed that significant difference was found between loneliness and daily phone use time(F(4-522)= 4,072; p<.05). Scheffe test was performed to determine the groups which caused difference. According to this significant difference, students who have mobile phone use 10 or over ten hours, 7-9 hours, 4-6 hours and 1-3 hours were found to have more loneliness score than those who have mobile phone use less than 1 hour per day.

Table 4. Means, standart deviations and t values of loneliness of university students according to addiction group and non addiction group

UCLA-LS	Mobile Phone Addiction				t	p
	Addictin group (n=93; %17,6)		Non addiction group (n=77; %14,6)			
	\bar{X}	Sd	\bar{X}	Sd		
	39,5	9,1	35,7	11,4	-2,399	.018*

*p<.05

As seen in Table-4, there is a significant difference between addict and non addict in relation to loneliness (t(168)=-2,399; p<.05). When these results analysed, it is seen that loneliness of addicted students (\bar{x} = 39,5, Sd=9,1) is higher than the non addicted (\bar{x} =35,7, Sd=11,4).

4. Discussion

Loneliness of university students was examined in the current study in terms of mobile phone addiction, daily use of mobile phone and gender. When literature is analysed, the literature has revealed that studies on mobile phone addiction do not have too much background. In addition, studies on mobile phone addiction related to loneliness are quite a few. In this context, this study may be important for the literature.

When loneliness of university students was examined according to gender, loneliness scores of male(\bar{x} =40,6, Sd=9,4) students were found higher than the scores of female (\bar{x} =35,8, Sd=9,4) students. The results of some studies are similar to the results obtained from this study (Erözkan, 2004; Karaoğlu, Avşaroğlu, & Deniz, 2009; Wiseman, Guttfreund, & Lurie, 1995). In addition, some studies revealed that loneliness scores of female students were higher than the scores of male students (Kutlu, 2005). Some studies also indicated that there were no significant differences between the loneliness scores of male and female students (Baş, 2010; Gürsoy, & Bıçakçı, 2006; Sezer, Tekin, & Aldemir, 2011).

According to another finding of the study, there was a significant difference between loneliness of university students and daily use of mobile phone (F(4-522)= 4,072, p<.05). According to this significant difference, students who have mobile phone use 10 or over ten hours, 7-9 hours, 4-6 hours and 1-3 hours were found to have more loneliness score than those who have mobile phone use less than 1 hour per day. Şar (2013) found that there was a significant difference between daily phone use time and loneliness. According to Şar's (2013) study, the issue of problematic phone use increases in parallel with increasing time of speaking on the phone, but the loneliness decreases. In another study, Jin and Park (2012) found that more cell phone calling was associated with greater loneliness. Pierce (2009) found that On average, 35–40% of teens reported using cell phones/text messaging and online social sites between 1 and 4 h daily, 24% reported using IMs 1–4 h daily and only 8% reported using email between 1 and 4 h daily. Females tended to use cell phones/text messaging and online social sites more so than did males. Hong, Chiu and Huang (2012) found that there was medium positive correlation between mobile phone addiction and mobile phone usage behavior.

According to the results obtained from the study, 17.6% of university students participated in the research is addicted to mobile phone. There was a significant difference between loneliness of university students and mobile phone addiction ($t(168)=-2,399$; $p<.05$). Loneliness scores of students who have been addicted to mobile phone ($\bar{X}=39,5$, $Sd=9,1$) were found to be higher than those of non-addicts ($\bar{X}=35,7$, $Sd=11,4$). This result supported Kraut and his colleagues' claim. Kraut et al. (1998) had claimed that pathological use of the new technologies reduces the individual's social implication in the real world and, as a consequence, his or her psychological well-being, because it produces the kind of isolation, loneliness and depression the individual wants to ease by connecting to the Internet. Chen's (2006) result indicated heavy mobile phone users meet their friends less. Ha et al., (2008) found that the excessive user group experienced difficulty in expression of emotion than the comparison group did. Furthermore, excessive user group had higher interpersonal anxiety than the comparison group.

Considering the features of mobile phones, especially smart mobile phones, recently introduced, it is seen that these kinds of mobile phones are not only manufactured to provide communication. These mobile phones include many features presented by the Internet and computers. In this context mobile phones offer a great opportunity, especially for young people who use the Internet. Individuals who have such a great opportunity can interact with mobile phones almost everywhere (at home, at school, on the bus, on the street, in the café, in the canteen, in bed, or even in the toilet). Individuals who have engaged in mobile phones constantly may be exposed to a decrease in the time allocated to other social relations, especially relations based on face-to-face interaction. This situation may also make individuals lonely. Although mobile phones and the Internet are used as communication tools, excessive use of these technological tools causes individuals to become addicted. Even communication tools may cause non-communication situations. Individuals who are under these circumstances can be supported to receive the help of individual or group counseling in order to make use of such technological tools in accordance with their needs.

References

- Anderson, C. A., & Arnoult, L. H. (1985). Attributional style and everyday problems in living: Depression, loneliness, and shyness. *Social Cognition*, 3(1), 16-35.
- Arslan, A., & Ünal, A.T. (2013). Examination of cell phone usage habits and purposes of education faculty students. *International Journal of Human Sciences*, 10(1), 182-201.
- Baş, G. (2010). An Investigation of the relationship between shyness and loneliness levels of elementary students in a Turkish sample. *International Online Journal of Educational Sciences*, 2 (2), 419-440.
- Bianchi, A., & Phillips, J.G. (2005). Psychological predictors of problem mobile phone use. *Cyberpsychology & Behavior*, 8(1), 39-51
- Brage, D., Meredith, W., & Woodward, J. (1993). Correlates of loneliness among midwestern adolescents. *Adolescence*, 28(111), 685.
- Ceyhan, E., & Ceyhan, A. A. (2011). Üniversite psikolojik danışma merkezine başvuran öğrencilerin yalnızlık ve depresyon düzeyleri. *Eğitim ve Bilim*, 36(160), 81-92.
- Chang, E. C., Sanna, L. J., Hirsch, J. K. and Jeglic, E. L. (2010), Loneliness and negative life events as predictors of hopelessness and suicidal behaviors in hispanics: Evidence for a diathesis-stress model. *J. Clin. Psychol.*, 66, 1242–1253.
- Demir, A. (1989). UCLA yalnızlık ölçeğinin geçerlik ve güvenilirliği. *Psikoloji Dergisi*, 7(23), 14-18.
- Durak-Batıgün, A., & Hasta, D. (2010). İnternet bağımlılığı: Yalnızlık ve kişilerarası ilişki tarzları açısından bir değerlendirme. *Anadolu Psikiyatri Dergisi*, 11, 213-219.
- Erözkan, A. (2004). Lise öğrencilerinin bağlanma stilleri ve yalnızlık düzeylerinin bazı değişkenlere göre incelenmesi. *Sosyal Bilimler Enstitüsü Dergisi/Journal of Graduate School of Social Sciences*, 4(2), 155-175.
- Erözkan, A. (2009). The predictors of loneliness in adolescents. *Elementary Education Online*, 8(3), 809-819.
- Esen, E. & Siyez, D.M. (2011). Ergenlerde internet bağımlılığını yordayan psiko-sosyal değişkenlerin incelenmesi. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 4 (36), 127-138.
- Güloğlu, B., & Kararımak, Ö. (2010). Üniversite öğrencilerinde yalnızlığın yordayıcısı olarak benlik saygısı ve psikolojik sağlamlık. *Ege Eğitim Dergisi*, (11) 2: 73–88.
- Gürsoy, F., & Bıçakçı, M. Y. (2006). A Study on loneliness level of adolescents. *Journal of Qafqaz*, 18, 140-146.
- Ha, J. H., Chin, B., Park, D. H., Ryu, S. H., & Yu, J. (2008). Characteristics of excessive cellular phone use in Korean adolescents. *CyberPsychology & Behavior*, 11(6), 783-784.
- Hong, F. Y., Chiu, S. I., & Huang, D. H. (2012). A model of the relationship between psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese university female students. *Computers in Human Behavior*. 28(6), 2152–2159.
- Jin, B., & Park, N. (2012). Mobile voice communication and loneliness: Cell phone use and the social skills deficit hypothesis. *New Media & Society*. 0(0) 1–18.

- Johnson, H. D., Lavoie, J. C., & Mahoney, M. (2001). Interparental conflict and family cohesion predictors of loneliness, social anxiety, and social avoidance in late adolescence. *Journal of Adolescent Research*, 16(3), 304-318.
- Karaoğlu, N., Avşaroğlu, S., & Deniz, M. E. (2009). Yalnız mısın? Selçuk üniversitesi öğrencilerinde yalnızlık düzeyi ile ilgili bir çalışma. *Marmara Medical Journal*, 22(1), 019-026
- Kırmoğlu, H., Filazoğlu-Çokluk, G., & Yıldırım, Y. (2010). Yatılı ilköğretim bölge okulu 6. 7. ve 8. sınıf öğrencilerinin spor yapma durumlarına göre yalnızlık ve umutsuzluk düzeylerinin incelenmesi (Hatay ili örneği). *SPORMETRE Beden Eğitimi ve Spor Bilimleri Dergisi*, VIII (3) 101-108.
- Koçak, R. (2003). Üniversite öğrencilerinde aleksitimi ve yalnızlığın bazı değişkenler açısından karşılaştırılması. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 2(19), 15-24.
- Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V. & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues*, 58, 49–74.
- Kutlu, M.(2005). Yetiştirme yurdu yasantısı geçiren lise öğrencilerinin yalnızlık düzeyleri. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3,24, 89-109.
- Lopata, H. Z. (1969). Loneliness: Forms and components. *Social Problems*, 17, 248-262
- Masi, C. M., Chen, H. Y., Hawkey, L. C., & Cacioppo, J. T. (2011). A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review*, 15(3), 219-266.
- Nangle, D. W., Erdley, C. A., Newman, J. E., Mason, C. A., & Carpenter, E. M. (2003). Popularity, friendship quantity, and friendship quality: Interactive influences on children's loneliness and depression. *Journal of Clinical Child and Adolescent Psychology*, 32(4), 546-555.
- Nie, N. H., & Erbring, L. (2000). Internet and society. *Stanford Institute for the Quantitative Study of Society*.
- Özdemir, N., Güreş, A., & Güreş, Ş. (2011). Oryantring sporcularında aleksitimi ve yalnızlık düzeyinin çeşitli değişkenler açısından incelenmesi. *Atatürk Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 13(3):27-34.
- Pehlivan, S., Ovayolu, O., Ovayolu, N., Sevinc, A., & Camci, C. (2012). Relationship between hopelessness, loneliness, and perceived social support from family in Turkish patients with cancer. *Supportive Care in Cancer*, 20(4), 733-739.
- Perlman, D., & Peplau, L. A. (1981). *Toward a social psychology of loneliness*. In S. Duck & R. Gilmour (Eds.). *Personal relationships* (Vol. 3, pp. 31–56). New York: Academic Press.
- Pierce, T., (2009). Social anxiety and technology: Faceto- face communication versus technological communication among teens. *Comp. Hum. Behav.*, 25(6): 1367-1372.
- Qualter, P., Quinton, S. J., Wagner, H. and Brown, S. (2009), Loneliness, interpersonal distrust, and alexithymia in university students. *Journal of Applied Social Psychology*, 39: 1461–1479.
- Reid ,DJ, & Reid, FJM.(2007). Text or talk? Social anxiety, loneliness, and divergent preferences for cell phone use. *CyberPsychology& Behavior*, 10, 424–35.
- Rotenberg, K. J., & Flood, D. (1999), Loneliness, dysphoria, dietary restraint, and eating behavior. *Int. J. Eat. Disord.*, 25 55–64.
- Ruchkin, V. V., Eisemann, M., & Hägglöf, B. (1999). Hopelessness, loneliness, self-esteem, and personality in Russian male delinquent adolescents versus controls. *Journal of Adolescent Research*, 14(4), 466-477.
- Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39, 472-480.
- Sezer, Ö., Tekin, G., & Aldemir, J. (8-10 Eylül, 2011). Üniversite öğrencilerinin atılganlık, yalnızlık ve umutsuzluk düzeyleri. 20.Ulusal Eğitim Bilimleri Kurultayında sözlü bildiri olarak sunulmuştur.
- Sübaşı, G. (2007). Üniversite öğrencilerinde sosyal kaygıyı yordayıcı bazı değişkenler. *Eğitim ve Bilim*, 32, 144, 3-15.
- Şar, A.H. (2013). Examination of loneliness and mobile phone addiction problem observed in teenagers from the some variables. *The Journal of Academic Social Science Studies*, 6(2), 1207-1220.
- Şar, A. H., & Işıklar, A. (2012). Adaptation of problem mobile phone use scale to Turkish. *International Journal of Human Sciences*, 9(2), 264-275.
- Ünal, G., & Bilge, A.(2005). İleri yaş grubunda yalnızlık, depresyon ve kognitif fonksiyonların incelenmesi. *Turkish Journal of Geriatrics*, 8 (2): 89-93.
- Takao, M., Takahashi, S., & Kitamura, M. (2009). Addictive personality and problematic mobile phone use. *CyberPsychology & Behavior*, 12(5), 501-507.
- Wang, K. T., Yuen, M., & Slaney, R. B. (2009). Perfectionism, depression, loneliness, and life satisfaction a study of high school Students in Hong Kong. *The Counseling Psychologist*, 37(2), 249-274.
- Wei R., & Lo V.H. (2006) Staying connected while on the move: Mobile phone use and social connectedness. *New Media & Society*, 8: 53–72.
- Wei, M., Russell, D. W., & Zakalik, R. A. (2005). Adult attachment, social self-efficacy, self-disclosure, loneliness, and subsequent depression for freshman college students: A longitudinal study. *Journal of Counseling Psychology*, 52(4), 602.
- Wiseman, H., Gutfreund, D. G., & Lurie, I. (1995). Gender differences in loneliness and depression of university students seeking counselling. *British Journal of Guidance and Counselling*, 23(2), 231-243.
- Yaacob, S., Juhari, R., Talib, M., & Uba, I. (2009). Loneliness, stress, self esteem and depression among Malaysian adolescents. *Jurnal Kemusiaan Bil. 14, Dis.* 85-95.