Relationship between High School Students' Facebook Addiction and Loneliness Status

Turgut Karakose
Dumlupinar University, Faculty of Education, TURKEY
Ramazan Yirci
Kahramanmaras Sutcu Imam University, TURKEY
Harun Uygun
Mersus Group, TURKEY
Tuncay Yavuz Ozdemir
Firat University, TURKEY

This study was conducted in order to analyze the relation between high school students' Facebook addiction and loneliness levels. The study was conducted with the relational screening model. The sample of the study consists of 712 randomly selected high school students. The data was collected using the Bergen Facebook Addiction Scale (BFAS) to analyze the students' Facebook tendencies and with the UCLA Loneliness Scale to analyze the students' levels of loneliness. Data was analyzed with descriptive statistic instruments along with t-test, ANOVA test, LSD test, and Correlation Analysis. Research findings suggest that the Facebook addiction levels of the high school students in the sample are rather low. Analyses conducted regarding the gender variable indicate that there is no relationship between Facebook addiction levels and the time spent on Facebook. Findings show that students most commonly share photographs and videos. This suggests that students use Facebook as a leisure pastime. Also, analyses indicate that there is a statistical significant relationship between the time participants spend on Facebook and their Facebook addiction scores. Findings of the study suggest that both male and female students' loneliness scores are low. In addition, the Correlation Analysis conducted to determine participants' Facebook addiction and loneliness levels was examined and no statistical significant relationships were found. According to the findings, it can be asserted that the participants of this study are not in the risk group regarding their Facebook addiction and loneliness levels.

Keywords: facebook addiction, loneliness, internet, high school students, social media.

Correspondence: Turgut Karakose,
Dumlupinar University, Faculty of Education, TURKEY.
E-mail: tkarakose@yahoo.com

INTRODUCTION

When we look at the explorations of the information era, it can be said that the Internet is one of the most effective tools in our social lives. Following the development of information technologies, the Internet entered modern life and has since become an indispensable part of our lives. As Internet usage became widespread, so did social networking websites and people began to spend more time sharing information, news, photos, videos and opinions on social networking websites such as Facebook. Accordingly, in modern life people started to experience an increasing level of loneliness. This led to questions such as, is it Internet and social media that's pushing people to loneliness, or is it because people feel lonely that they seek out and use tools like these? No matter what the answer, the important point here is that in this era of information we are living, the number of people experiencing a feeling of loneliness seems to be increasing day by day. Under th ese circumstances, teenagers and youngsters can be considered in a degree of danger.

By removing limits of distance and time, the Internet has instigated a revolution in the area of communication (Harris & Rae, 2009). Social networks sourced by the Internet are a crucial element of this revolution. Social media can be defined as the activities and behaviors that result from the information and opinions shared online from a group of users through web-based media tools or software; also referred to as virtual communities (Kaplan & Haenlein, 2010; Kuss & Griffiths, 2011). Today, people have started to spend more time on social networks. According to the statistics available and studies conducted in Turkey, Facebook is considered to be one of the social networks most commonly used by teenagers. The reason for this is because the highest internet and computer usage rates are for those aged between 16 and 24 (Eksi, Erden, Erdogan, & Yilmaz, 2013; Savci & Aysan, 2016; TUIK, 2015). According to IWS data, by December 31, 2012, throughout Turkey 32,131,260 people are users of Facebook (Internet World Stats, 2012). This number is equal to more than one third of the entire population of Turkey. The widespread usage of Facebook is surprising when we consider that the mission of Facebook, which was created in 2004, was to enable people to share things and keep in contact with each other. This has enabled people to express their ideas, get in touch with family and friends, and to discover what has been going on all around the world. According to December 2014 data, Facebook has 1,390,000,000 active users each month (Facebook, 2015).

The general increase in Internet usage and the specific increase in social media and Facebook usage has brought about some problems too. The breakdowns that have emerged in the individuals' life standards, work, family and education, loneliness and addiction can be listed as some of these troubles (Young, 1998; Kraut et al., 1998; Morahan-Martin, 1999; Engelberg & Sjöberg, 2004; Shieh & Demirkol, 2014; Park, Kee, & Valenzuela, 2009; Ryan & Xenos, 2011; Durak-Batigun & Hasta, 2010; Oktan,

State of the literature

- People enjoy using the tools of the modern information era. Internet and social media have become an important part of people's lives in this era. More and more people start to use social media with different purposes.
- Facebook is one of the most popular social media tool not only for adults but also for teenagers and students.
- Loneliness is an important psychological problem that more people suffer in this modern era although there are a lot of tools which enables them to become more sociable.

Contribution of this paper to the literature

- Turkey is one of the leading countries in terms of social media use especially Facebook use among teenagers and students. It is important to find out the Facebook addiction levels of the students.
- Loneliness is another undesired modern life suffering which causes negative effects on students. Defining the relationship between the students' Facebook addiction and loneliness levels may help policy makers in education to take precautions in order to protect them.

2014; Bevan, Gomez, & Sparks, 2014, Eren, Celik, & Akturk, 2014). Some resources define Internet and social media addiction as excessive or uncontrolled usage of the Internet (Griffiths, 2012). Facebook addiction, which can be regarded as troubled Internet use, becomes are more crucial when teenagers are involved. Teenagers have to be protected from Facebook addiction in order to maintain healthy personality development and to have healthy face-to-face social relationships in their daily lives. Otherwise, teenagers will be pushed into a feeling of loneliness before even entering adulthood.

Many communication tools that enable people to sustain their lives as social beings been brought about through innovations of information technologies. However, according to studies, people are also feeling much lonelier on a day-to-day basis, despite the opportunities on hand to help us become more sociable. Loneliness, which is referred to as one of the problems most evident in relations between individuals, can emerge as a psychological problem at every stage in life. Loneliness is an undesired and irritating condition, and modernization, individualistic city life, increase in computer and Internet usage have all been attributed as causes of increased loneliness regarding its quantitative and qualitative dimensions (Kocak, 2003).

Loneliness is the response of an individual with a lack of social relationships, or a lack of closeness, sincerity and emotionality in relationships, even though the individual has various social relationships (Ozben, 2014). The feeling of loneliness can emerge when there is a gap between what the individual desires and their reality (Cacioppo, Hawkley, & Berntson, 2003). Research indicates that loneliness has negative effects on human health too (Cacioppo & Hawkley, 2009). People who feel lonely can lose their harmony with the environment and this can cause hard times in their lives. Lonely individuals steer clear from entering relationships with others because they see themselves as inadequate for such social intercourse (Yasar, 2007). When loneliness becomes chronic, this can lead to both physical and mental exhaustion.

According to Tarhan (2009), many behavioral addictions push people into loneliness. For example, eating, exercising, playing games of chance, shopping, working, housework, sexual activities, using technology too much, Internet addiction, and many other behaviors beside, can push people into loneliness. Internet addiction, which is regarded as one of the behavioral addictions, and Facebook addiction, which is part of the same category, is an addiction that has recently emerged. The fact that this addiction is more common among youngsters and teenagers brings about the need to conduct more research in this area. The purpose of this study is to examine Facebook addiction and loneliness levels of high school students, and to put forward suggestions in accordance with the findings. The relationship between Facebook addiction levels and loneliness levels of students should be identified in order for the necessary support to be provided to those experiencing problems during the teenager period.

METHODOLOGY

Sample of Research

This study was conducted with 712 high school students studying in Kutahya city center, Turkey. Of the participants, 296 are male (41.6%) and 416 female (58.4%). The participants were all aged from 14 to 18. Their class grade had a balanced distribution, with 30.3% of the participants in (year one of high school), 24.2% were in Grade 10 (year two), 20.0% were in Grade 11 (year three), and 25.3% were in Grade 12 (year four). For the study, which was designed with the relational screening model, simple random sampling was preferred in determining the samples in order

to increase generalizability and to ensure an equal chance of being selected (Arikan, 2004; Buyukozturk et al., 2010).

Instrument and Procedures

Bergen Facebook Addiction Scale (BFAS): Facebook usage is becoming more widespread, and Facebook addiction is now recognized as a subtype of Internet addiction. The Bergen Facebook Addiction Scale (BFAS) was developed in order to examine this situation. The scale, whose internal consistency, factor structure, reliability and validity tests were published, was considered to be an appropriate assessment instrument for this current study (Andreassen, Torsheim, Brunborg, & Pallesen, 2012). The six item scale was developed with a 5-point Likert-type scale (very rare, rarely, sometimes, often, very often). The highest score that could be recorded using the scale is 30, and the lowest is six. Andreassen et al. (2012) conducted a study with 227 female and 196 male students (total of 423 students). Participants were regarded as Facebook addicts under conditions that they recorded 16 points or over using the scale. Akin et al. (2013) adapted the scale into Turkish, and confirmatory factor analysis indicated fit values to be at acceptable levels ($\chi2 = 291.88$, df = 118, p < .001, RMSEA= .061, CFI= .95, GFI= .92, SRMR= .040).

UCLA Loneliness Scale: The second scale used in the current study was the shortened form of the UCLA (University of California, Los Angeles) Loneliness Scale. The UCLA Loneliness Scale is self-assessment scale developed with the Likert method, and which aims at determining the general loneliness level of the individual. Russell, Peplau, and Ferguson (1980) developed the initial version of the scale. The scale was later revised by Hays and DiMatteo (1987), who developed it into an eight-itemed shortened form of the original scale. Yildiz and Duy (2014) then adapted the scale into Turkish. Data was collected from 293 students between ages 14 and 19 during the adaptation process. According to the exploratory factor analysis results, the scale has a single factor structure and factor loads range between .31 and .71. The third item's (I am an extravert person) factor load was .15 and because this value was under .30 the item was excluded from the Turkish scale. According to the confirmatory factor analysis results, findings were at an acceptable level ($\chi2=27.12$, sd=14, $\chi2/df=1.94$, p=0.02; RMSEA=0.06; SRMR=0.04; GFI=0.97; AGFI=0.95; CFI=0.98). The scale was developed as a seven item Likert-type scale, with four-point options (never, rarely, sometimes, always). The highest score that could be recorded from applying the scale is 28 and the lowest score is seven. Low scores indicate low levels of loneliness, and high scores indicate high levels of loneliness feelings.

RESULTS

Reliability of the scales were examined; Cronbach Alpha Coefficient of the Bergen Facebook Addiction Scale (BFAS) was α=.84, and for the UCLA Loneliness Scale it was α=.73. These results show that both scales can be accepted as being reliable assessment instruments. The frequency distribution of how long participants have been using Facebook is shown in Table 1.

According to Table 1, most participants have been using Facebook for five years or more. This shows that the students started using Facebook before they started high school. Data indicates that Internet usage in Turkey is increasing each year, and the average age of beginning to use the Internet is decreasing. Data on the average time participants spend using Facebook each day are shown in Table 2.

When these data are examined, it is evident that the majority of participants (59.6%) spend a maximum of one hour per day using Facebook. These findings

Table 1. Frequency table regarding Facebook usage

Years usage	Frequency	%
1	144	20.2
2	52	7.3
3	72	10.1
4	124	17.4
5 or more	320	44.9
Total	712	100.0

Table 2. Average time spent on Facebook each day

Hours per day	Frequency	%
1	424	59.6
2	128	18.0
3	84	11.8
4	8	1.1
5 or more	68	9.6
Total	712	100.0

Table 3. Most common activities on Facebook

Activity	Frequency	%
Sharing Photos and Videos	420	59.0
Messaging	20	2.8
Sharing Status	272	38.2
Total	712	100.0

Table 4. T-test results regarding Facebook addiction and the gender variable

Gender	n	$\bar{X}$	SS	t	p	Levene Test	
						f	p
Male	296	1.750	.771	-0.360	.719	7.541	.007
Female	416	1.799	1.073				

Table 5. Average scores gained from the Facebook Addiction Scale

Item	n	$\bar{X}$	SS
1	712	1.88	1.18970
2	712	1.98	1.26203
3	712	1.95	1.31171
4	712	1.64	1.19554
5	712	1.75	1.29672
6	712	1.66	1.12017

suggest that students also use social media tools other than Facebook, or surf different websites. The participants were asked to state three activities that they mostly do while they are on Facebook. Findings regarding this question are shown in Table 3.

According to Table 3, the participants' most frequent activity is sharing photos and videos (59%), and the least frequent activity is messaging (2.8%). This suggests that participants primarily use Facebook as a leisure tool. Because messaging is the least preferred, it can be stated that the participants do not prefer Facebook as a means of communication. T-test was conducted in order to determine whether or not Facebook

addiction score varied according to gender as a variable, and the findings are shown in Table 4.

According to Table 4, there is no statistically significant difference between Facebook addiction with regards to gender (p=0.719>0.05). Facebook addiction levels of participants do not vary according to their gender. Similarly, the t-test results, which was conducted to determine whether the time participants spend on Facebook and the activities they do varies according to gender, were not statistically significant (p>0.05). The descriptive statistics of the average scores the participants received from the Facebook Addiction Scale are shown in Table 5.

According to Table 5, the average scores of the participants are all below 2.0 According to the scale, in order to claim Facebook addiction, the participants should record scores of 16 or over from the scale. The total scores gained from the Facebook Addiction Scale indicate that the participants in the study group are not considered to be Facebook addicts (M=10.86 <16). A One Way Variance Analysis was conducted in order to determine whether or not there is a significant difference between the time spent on Facebook and Facebook addiction levels of the participants, the results of which are shown in Table 6.

Table 6. Relationship between time spent on Facebook and Facebook addiction levels

Hours per day	n	$\bar{X}$	SS	F	P	LSD
1	247	1.473	.784			a<b
2	128	2.214	.877			b>a
3	104	2.119	.782	8.894	.000	c>a
4	117	1.333	.236			-
5 or more	116	2.500	1.453			e>a
Total	712	1.779	.957			

Table 7. Average scores gained from the UCLA Loneliness Scale

Item	n	$\bar{X}$	SS
1	712	1.39	.83182
2	712	1.37	77943
3	712	1.34	.78753
4	712	1.38	.78841
5	712	1.87	1.12688
6	712	1.43	.80798
7	712	1.47	.80359

Table 8. T-test results regarding loneliness levels and gender variable

Gender	n	$\bar{X}$	SS	t	p	Levene Test	
						f	p
Male	296	1.559	.614				
				1.971	.051	6.956	.009
Female	416	1.394	.451				

Table 9. Relationship between Facebook addiction and loneliness level

Variable	n	r	p
Facebook Addiction	712		
		.13	.083
Level of Loneliness	712		

According to Table 6, there is a statistical significant relationship between the time participants spend on Facebook and their addiction levels (p=0.00<0.05). LSD test was conducted in order to determine between which groups this difference occurred. Participants who spend two, three, or five or more hours on Facebook have significantly higher addiction levels than participants who spend one hour or less on Facebook. Facebook addiction score averages of participants who spend five or more hours on Facebook are higher than the other participants ($\bar{x}$=2.500). Descriptive statistics average scores that the students gained from the UCLA Loneliness Scale are shown in Table 7.

According to Table 7, the score averages from the Loneliness Scale were below 2.0 for all of the participants. The total scores gained from the UCLA Loneliness Scale indicate that participants in the study group have rather low levels of loneliness (M=10.25). The low scores gained from the UCLA Loneliness Scale, with a total of 28 points, suggests that the feeling of loneliness is at a low level. A t-test was conducted in order to determine whether loneliness levels of the participants differed significantly according to their gender, and the results of this test are shown in Table 8.

Findings of Table 8 suggest that there is no significant difference between loneliness level scores and the gender variable. Although loneliness level scores of males ($\bar{x}$=1.559) were higher than for females ($\bar{x}$=1.394), this difference was not found to be statistically significant (p=0.051>0.05). Both male and female participant scores indicate that they have low levels of loneliness feelings. The reason for this may be because over 67% of the participants have two or more siblings. The relationship between Facebook addiction levels and loneliness levels of the participants was examined. Correlation Analysis results are shown in Table 9.

According to Table 9, there is no significant relationship between Facebook addiction and the loneliness levels of participants (p=0.083>0.05). The reason for this may be because the Facebook addiction levels and loneliness levels of the participants are rather low.

DISCUSSION AND CONCLUSIONS

This study, which aimed at determining the relationship between Facebook addiction and loneliness levels of high school students, was conducted with the relational screening model. One of the most important research findings suggest that the Facebook addiction levels of the participants that are in the sample are rather low. This finding is in line with other research results which analyze Internet addictions (Bayraktar & Gun, 2007; Durak-Batigun & Hasta, 2010; Teke, 2011; Gokcearslan & Gunbatar, 2012). When other research on this issue are examined, we can see that Facebook and Internet addiction levels of students are high (Alabi, 2013; Fox & Moreland, 2014; Marcial, 2013). These differences can occur due to cultural variables and also due to the characteristics of the groups that are included in the sample.
Research findings suggest that there are no relationships between Facebook addiction levels and the time spent on Facebook according to the gender variable. This finding is in line with the study results of Hargittai (2008), Lewis, Kaufman, Gonzalez, Wimmer, and Christakis (2008), Taydas (2012), and Hark Soylemez (2013). However, some studies on this issue (Acar, 2008; Sirakaya, 2011; Doner, 2011; Cam & Isbulan, 2012; Oktan, 2014; Seferoglu & Yildiz, 2013; Bilge, 2012; McAndrew & Jeong, 2012; Bonds-Raacke & Raacke, 2010; Pempek, Yermolayeva, & Calvert, 2009) indicate that there is a significant relationship between time spent on Facebook and the gender variable.

Findings show that sharing photographs and videos are among the students most commonly used Facebook activities. Analysis shows no differences according to the gender variable between the activities of participants on Facebook. This shows that

both males and females have similar tendencies in using Facebook and mostly spend time using it for fun. This correlates with findings of Ellison, Steinfield, and Lampe (2006) and Hark Soylemez (2013) which both state that Facebook users mostly spend time on Facebook to have fun.

Also, analyses indicate a significant relationship between the time participants spent using Facebook and their Facebook addiction scores. Facebook addiction score averages of participants who spend five or more hours (per day) on Facebook are higher than the other participants. When Facebook addiction levels, and accordingly the time spent on Facebook, increases, negative outcomes for users will emerge. Shaw, Timpano, Tran, and Joormann (2015) and Fox and Moreland (2015) claim that excessive use of Facebook and other social networks can increase anxiety and stress levels of users.

According to the loneliness level findings of the study, both female and male participants have low levels of loneliness. Although the literature indicates (Alpaslan, Avci, Soylu, & Guzel, 2015; Chen & Chung, 2007; Taydas, 2012; Ingvadóttir, 2014; Amil & Bozgeyikli, 2015) that males have more feelings of loneliness than females, the results of this study were different. Low levels of loneliness and Facebook addiction can be related to the school degrees of the participants. All of the participants in the sample are teenagers studying at high school. High school education in Turkey is obligatory, whether or not students want, they have to attend schools and the social relationships there are often intense. Thus, they spend plenty of time with their peers and this can reduce the feeling of loneliness.

Finally, the Correlation Analysis conducted to determine participants' Facebook addiction and loneliness levels was examined and no statistical significant relationships were found. In addition, there are many contradictory findings in the literature regarding Facebook and loneliness. For example; while some studies on this issue (Ryan & Xenos, 2001; Burke, Marlow, & Lento, 2010; Taydas, 2012; Ozdemir, Ozan Boydak, & Aydogan, 2013; Rauch, Strobel, Bella, Odachowski, & Bloom, 2014) indicated that Facebook use increases loneliness feeling levels; other studies states that using Facebook reduces the feeling of loneliness, facilitated making contact with the surroundings and made the users happy (Tandoc, Ferrucci, & Duffy, 2015). The research that Ingvadóttir (2014) conducted on Facebook use and loneliness levels indicated that there are no significant relationships between Facebook use and loneliness levels of university students. Ingvadóttir (2014) explained this as because university students make contact with their family and friends, they prevent emergent feelings of loneliness.

Finally, according to the findings, it can be asserted that the participants of this study are not in the risk group regarding their Facebook addiction and loneliness levels. This can be regarded as a positive result. In addition, in our time where social networks and Internet usage is becoming more widespread, precautions should be taken to ensure that teenagers make face-to-face contact at places outside of school and their social environment. With this respect, it will be beneficial to open youth centers where students can spend their time outside of school more effectively, and sports and cultural activities that will appeal to teenagers should be planned and implemented.

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