



## An Examination of the Relationship between Students Involved and not Involved in Cyberbullying Incidents and Self-Esteem and Extroversion

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### Abstract

Youngsters are individuals who follow the developments in information and communication technologies closely and have the skills to use the technological devices on a high level. As a result of the misuse of such technological devices for hurting other youngsters, cases of cyberbullying have started to occur at schools as a different version of bullying. Cyberbullying can be defined as the misuse of information and communication technologies to harm other people intentionally and on purpose. It is aimed in this research to examine the relationship between students who are cyberbullies, cyber victims, cyberbullies/victims, and neutral and self-esteem and extraversion. The study sample is composed of 519 students who study at different high schools in Sakarya in 2014-2015 academic year. 274 (52.8%) of the students are males, 245 (47.2%) of them are females. It was seen that the relationship between cyber victims and self-esteem was on the mid-level; the relationship between cyberbullying and self-esteem on a positively low level; the relationship between cyberbully/victim students and self-esteem on a negatively low level; and the relationship between neutral students and self-esteem on the mid-level. It was also found that the relationship between cyber victims and extraversion was on a negatively mid-level; the relationship between cyberbullying and extraversion on a negatively low level; the relationship between cyberbully/victim students and extraversion on a negatively low level; and the relationship between neutral students and extraversion on a positively mid-level.

### Keywords

Cyberbully  
Cyber victim  
Cyberbullis / Cyber victim  
Neutral  
Self-esteem  
Extraversion

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### Introduction

Making changes in all walks of life, technological developments also have brought about changes in education. Students have been provided with the opportunity access all kinds of information in a short time via the internet. In any period of the educational history, it has not been possible to access so much information in such a short time. Individuals who misuse the technology that provides them with such opportunity to hurt each other have caused that cases of cyberbullying occurs at schools as a new type of aggression. (Ayas & Horzum, 2012).

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As far as the literature is concerned, there are different definitions of cyberbullying. Willard (2005) defined cyberbullying as a misuse of digital media or materials such as the internet to harm victims. Patchin and Hinduja (2006) considered cyberbullying as hurting victims via the internet intentionally and constantly. Belsey (2007) defined cyberbullying as people's actions to misuse of technological tools to harm other people. Cyberbullying is defined as the action of hurting others on purpose and repetitively by using the internet or other digital technologies (Agatston, Kowalski, & Limber, 2007; Belsey, 2007; Patchin & Hinduja, 2006; Strom & Strom, 2005; Willard, 2005). As for these definitions, cyberbullying can be defined as the purpose of information and communication tools to harm other people.

Nowadays, technology is effectively used by everyone and in all areas in everyday life. In this period, the technological tools which we the people use most are internet and mobile phones. Such that, 42.3% of the world population, 87% of America, 70.5% of Europe, 34.7% of Asia, and 26.5% of Africa use the internet according to data of 2014 (IWS, 2014). The rate of households having the internet access across Turkey has reached 60.2% 2014. This rate was 49.1% in 2013 (TUIK, 2014). In the light of these data, it is seen that the rate of using information and communication technologies have been increasing day by day. Misuse of information and communication technologies may cause an increase in the incidences of cyberbullying. Cases of cyberbullying cause different several negative experiences for individuals.

Although cyberbullying causes no physical damage to the victim, the victim is psychologically affected in a negative way as a result of such cases. It was seen in researchs about cyberbullying on cyber victims that serious problems such as sorrow and sadness (Beran & Li, 2005), disappointment, psychosomatic symptoms, and low level of self-esteem (Cenat et al., 2014), absence at school (Kirby, 2008), psychosocial problems (Ybarra & Mitchell, 2004), academic failure (Nishina, Juvonen, & Witkow, 2005; Schwartz, Gorman, Nakamoto, & Toblin, 2005; Raskauskas, Rubiano, Offen, & Wayland, 2015), loneliness, anxiety, depression, (Hawker & Boulton, 2000) and suicide (Gini & Espelage, 2014) are observed in those who have been cyber-victimized. Cyberbullying causes several problems in individuals. Dredge, Gleeson, and Garcia (2014) stated in their study that 68% of those who were cyber-victimized experienced social and behavioral problems. In a study by Schneider, O'Donnell, Stueve, and Coulter (2012), it was determined that 34% of those who were cyber-victimized exhibited depressive symptoms, 18% of them considered committing suicide, 24% of them hurt themselves, and 9% of them made a suicide attempt. Wong, Chan, and Cheng (2014) found that cases of cyberbullying negatively affected the psychological health of teenagers who were cyber-victimized and decreased their levels of commitment to the school. Sampasa-Kanyinga, Roumeliotis, and Xu (2014) expressed in their study that victimization by cyberbullying significantly increases the possibility of suicidal considerations. In the study by Batmaz and Ayas (2013), it was determined that there is a positive correlation between cyberbullying level and psychological symptoms of anger hostility, depression, interpersonal sensitivity and psychoticism. In the study by Ayas (2014), it was found that there is a positive relationship between levels of cyber victimization and depression and anxiety.

There have been studies which found that the self-esteem levels of cyber victims decreased (Campfield, 2008; Cenat et al., 2014; Hoff & Mitchell, 2009; Meadows et al.; 2005; Patchin & Hinduja, 2010; Raskauskas & Stoltz, 2007; Ybarra & Mitchell, 2007). In the research by Pişkin and Ayas (2005) about traditional bullying, the group with the lowest self-esteem level was determined "victims" among "bully", "victim", "bully-victim", and "neutral" students. It was determined that victim students' self-esteem levels were found to be significantly lower than those of both "neutral" and "bully" students. It was seen that the self-esteem level of "bully-victim" group was lower than "neutral" students' level as well as being higher than other groups'. In the study by Kandemir and Özbay (2009), it was found that there is no relationship the interaction between perceived empathic atmosphere and self-esteem with bullying.

For the studies conducted domestically and abroad, it is seen that there are limited studies concerning cyberbullying and personality traits. In the studies concerning the cyberbullying cases of extrovert individuals, it was seen that students who did not participate in a bullying event were more extrovert (Connolly & O'Moore, 2003). It was determined in the study by Pişkin and Ayas (2005) that bully students' levels of extraversion were higher than victim students'. In a study by Çelik, Atak, and Erguzen (2012), it was found that cyber victimization had a significant relationship with being extrovert and tender-minded, and neuroticism was the basic predictor of cyberbullying. Eroğlu (2014) stated that extraversion is a risk factor for cyberbullying. When one examines certain studies, it is seen that there is no statistically significant relationship between the level of extraversion and the categories of cyberbullying (Corcoran, Connolly, & O'Moore, 2012; Özden & İçellioglu, 2014).

It can be seen that there are studies on cyberbullying based on different variables in Turkey. In a study by Peker, Eroğlu, and Ada (2011), it was found that rate of cyber victimization increased as the rate of cyberbullying did so among teenagers. In addition, it was discovered that incidence of cyberbullying and victimization decreased when the empathic tendencies of teenagers increased. In a study conducted by Pamuk and Bavlı (2003), males were found to be cyberbullying much more while teenagers' levels of cyberbullying did not differ according to self-understanding and the class levels. In another research, a positive relationship on a low level was found between cyberbullying and submissive behaviors (Çetin, Peker, Eroğlu, and Çitemel, 2012). Studies on cyberbullying have found cyberbullying to be related to the place from where one accesses the internet, the frequency of visiting an internet cafe, teenagers' perceptions on their families' computer skills, and intended uses of the internet (Akbulut & Erişti, 2011; Akbulut, Şahin, & Erişti, 2010). In another study, it was determined that cyber victimization had a relationship with the gender, mother's perception about internet skills, frequency of visiting an internet cafe, daily using time to social media, the risk of internet addiction, using the internet for playing online games and monthly salary of the family. In another study, it was determined that cyber victimization had a relationship with the frequency of visiting an internet cafe, teenagers' perceptions on their mothers' computer skills, using the internet for playing online games most, and the risk of internet addiction (Eroğlu, Aktepe, Akbaba, Işık, & Özkorumak, 2015). In the study by Peker (2015), it was found that parents supervising to usage of internet prevents the individuals to cyberbullying, shows increased cyberbullying, often during unsupervised times.

Since there are few studies on the relationship with the personality factors of self-esteem and extraversion and cyberbullying, and there are certain differences among previous research, the need for such a study has been felt.

## Method

### *Model*

This research was planned and carried out in accordance with survey model. In the survey model; different variables belonging to event of interest, unit such as group and situation are attempted to be described. In this model, instant situation determinations can be identified (Karasar, 2006). This model provides an advantage in terms of offering an opportunity to make predictions about population values in the light of data obtained from the sample (Büyüköztürk et al., 2010). Cyberbullying, cyber victimization, cyberbullying/cyber victimization and neutrality, and the personality traits of self-esteem and extraversion were instantaneously measured in the cross sectional survey model. In this study to make generalizations to universe the sample which was taken from high school students, cross-sectional survey was used in the research which was based to instant data collection and analysing it.

### ***Participants***

The study sample is composed of 519 students who study at different high schools in the city center in Sakarya in 2014-2015 academic year. The schools and students studying there were neutral-randomly determined for the research. 274 (52.8%) of the students are males, 245 (47.2%) of them are females. 232 (44.7%) of the students are attending the ninth grade, 169 (32.6%) are attending the tenth grade and 118 (22.7%) are attending the eleventh grade. Since the twelfth-grade students attended the school scarcely due to the university entry exam during the data collection, they were not included in the research.

### ***Instruments***

“Cyber Bullying/Victim Questionnaire” developed by Ayas (2011) was used to determine students' cyberbully/cyber victimization, and neutrality. The questionnaire is composed of two sections to determine cyber victim and cyberbully. The information is given about cyberbullying and cyber victimization in the entrance of the survey. The section of cyber victim in the questionnaire includes the different questions such as “Have you ever been cyberbullied?”, “What gender was the person who cyberbullied you?”, “Via what technological media were you cyberbullied?”, “Did you know the person who cyberbullied you?” “Where did you get cyber-bullied?”, “How did you put an end to the cyberbullying?”, “How did you feel when you exposed to these events?”, and “Whom did you tell you were cyberbullied?” In the section of cyberbully, the questions were as follows: “Have you ever cyberbullied anyone?”, “What gender was the person who you cyberbullied?”, “Via what technological media did you cyberbully that person?”, and “How did you feel after you had cyberbullied that person?” In addition, the question “Have you ever witnessed someone being cyberbullied?” concerning the considerations about cyberbullying generally was included in the questionnaire.

### ***Self-esteem Inventory***

“Coopersmith Self-Esteem Inventory” was used to determine students' levels of self-esteem in the research. The inventory is composed of 58 items. Total score for self-esteem and scores for five subdimensions can be obtained from the inventory. These subdimensions are “general self-esteem (26 items)”, “social self-esteem (8 items)”, “school/academic self-esteem (8 items)”, “home-parent self-esteem (8 items)”, and “lie (8 items)”. While obtaining the total score from the inventory, “lie” is excluded. In addition, the inventories of those who have answered “yes” to five or more items of lie are left out of assessment because items of lie do not measure the self-esteem; they are for determining to what extent the individuals assume a defensive attitude. Items of lie in the inventory don't measure self-esteem level of individual; these items are for determining to what extent individuals are defensive (Pişkin, 1997).

The responding format of the inventory is yes-no. The answers regarded as the indicator of high self-esteem are rewarded with two points; there are no points for wrong answers. For example, while a person who gave the answer “no” to the item “I find it very hard to talk in front of the class”, the person who gave the answer “no” to the same item is not rewarded with any points. It clear that maximum self-esteem score that can be obtained from the this inventory is 100. An increasing score shows that students have a high level of self-esteem (Pişkin, 1997).

Pişkin (1996) summarized the foreign studies on the reliability and validity of the inventory as follows: Coopersmith (1959) found the test-retest reliability coefficient of the measuring tool to be 0.88 through application with an interval of 5 week, 0.70 through application with an interval of 3 years. Coopersmith (1967) also stated that Kuder-Richardson reliability coefficient was 0.91 for girls, and 0.80 for boys. In the study by Kimball (1973) in which Kuder-Richardson-20 formulation was used to find the internal consistency coefficient of the tool, reliability coefficients were found to be 0.92 for fourth grade students, 0.89 for seventh grade students. In another study by Johnson et al. (1983), Alpha internal consistency coefficient was found to be 0.86. These findings show that Coopersmith Self-esteem Inventory is a reliable and valid tool.

Pişkin (1996) examined the reliability of the tool both with KR-20 and split-half methods. The results the reliability coefficient calculated with KR-20 method were found 0.81 for the inventory. The reliability coefficients of the subinventories were determined that differed between 0.45 and 0.78. In the split-half method, the items were divided into first half-second half and single-multiple items. The first half-second half reliability was found to be 0.82 for the whole inventory, 0.76 for the short form. The reliability coefficients of the subinventories differed between 0.45 and 0.77. When separated as single-multiple items, the reliability coefficient was found to be 0.86 for the whole inventory, 0.81 for the short form. The reliability coefficients of the subinventories were found to differ between 0.45 and 0.80.

In the study by Başkara (2002) with first and third grade high school students, KR-20 reliability coefficient was found to be 0.82, the split-half reliability coefficient 0.80, and test-retest reliability coefficient obtained through application with an interval of two weeks was found to be 0.77.

#### *Eysenck Personality Inventory-Extraversion Subscale*

In order to measure the extraversion levels of the located students in the study group, "Extraversion Subscale of Eysenck Personality Inventory" developed by Eysenck and Eysenck in 1964 was used. The inventory was basically developed to determine normal behaviors rather than pathological symptoms. There are total 101 items in the inventory; 90 of which are original, 11 of which are substitute belonging to four subscales: Extraversion, Psychoticism, Neuroticism and Lie. Having 21 items for its Extraversion subscale, the inventory has a simple language and can be applied both to individuals and groups. The scoring of the inventory which has no time limitation is so easy and does not require specialization. The subscale requires a forced-choice responding in the form of yes-no, and a higher score to be obtained from the subscale indicates extraversion; a lower score indicates introversion. Dewaele and Furnham state that the tool has a high level of reliability and validity (Pişkin, 2004).

Extroversion dimension of EKE used in this study was adopted into Turkish by Topçu (1982) and as a result of the study it was reported that the reliability coefficient of the dimension is 0.90.

#### *Collection and Analysis of the Data*

The inventories used in the research was applied to the students who study in the 9th, 10th, 11th, and 12th grades of several high school in the city center in Sakarya province. For the analysis of the data, a regression analysis was performed, in which factors of self-esteem and extraversion are considered as dependent variables; cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality as predictive variables. The data were analyzed with SPSS 20.0, and the significance level was accepted as being .05.

### **Findings**

The predictive variables of self-esteem and extraversion were examined respectively in the research. The results of the regression analysis are accordingly given below.

**Table 1.** The Relationship Between The Cyberbully, Cyber Victim, Cyberbully/Cyber Victim and Neutral Variables and Self-Esteem-Extroversion

	<b>Bully</b>	<b>Victim</b>	<b>Bully/Victim</b>	<b>Neutral</b>
Self-esteem	-.122**	-.254**	-.174**	-.226**
Extraversion	.042	-.041	-.025	.018
Bully	-	.270**	.770**	.484**
Victim		-	.420**	.783**
Bully/Victim			-	.357**
Neutral				-

According to the results in the table, 1 the correlation between self-esteem and the cyberbully, cyber victim, cyberbully/cyber victim and neutral variables is negative and significant on low-level. There is a lowly positive relationship between cyberbully and cyber victim variables, a moderately positive relationship with the neutral variable and a highly positive relationship with the cyberbully/cyber victim variable. A moderately positive relationship was found between the cyber victim and cyberbully/cyber victim variables and a highly positive relationship with the neutral variable. It is seen in the table that there is a positive and moderately relationship between the cyberbully/cyber victim and neutral variables. No significant relationship was found between extroversion and the cyberbully, cyber victim, cyberbully/cyber victim and neutral variables.

**Table 2.** The Results of Multiple Regression Analysis on The Prediction of Self-Esteem

	<b>B</b>	<b>S.H.</b>	<b><math>\beta</math></b>	<b>t</b>	<b>P</b>	<b>Dual r</b>	<b>Partial r</b>
<b>Constant</b>	34.57	2.44		14.17	,00		
Cyber Victim	-3.48	2.53	-.18	-1.38	.17	-.48	-.06
Cyber Bully	4.96	2.90	.12	1.17	.09	.03	.08
Cyber Bully/Victim	2.86	2.73	.09	1.05	.29	-.03	.05
<b>Neutral</b>	<b>5.95</b>	<b>2.46</b>	<b>.36</b>	<b>2.42</b>	<b>,02</b>	<b>.44</b>	<b>.11</b>

R= .496

R2= .246

F(4-514)= 41.93

p.= .00

In Table 2, the dual and partial correlation results were examined between the self-esteem variable and the predictive variables cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality. It is seen that there is a negative and mid-level dual relation ( $r = .48$ ) between self-esteem and cyber victimization; however, as for other variables, the partial correlation level between the two variables is negative and lower ( $r = .06$ ). There is a positive and low-level dual relation ( $r = .03$ ) between self-esteem and cyberbullying, and as for other variables, the partial correlation level between the two variables is positive and lower ( $r = .08$ ). There is a negative and low-level dual relation ( $r = .03$ ) between self-esteem and cyberbullying/cyber victimization; however, as for other variables, the partial correlation level between the two variables is positive and lower ( $r = .05$ ). There is a positive and mid-level dual relation ( $r = .44$ ) between self-esteem and neutrality but, as for other variables, the partial correlation level between the two variables is positive and lower ( $r = .11$ ).

When the variables cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality are considered together, there appears a positive, mid-level and significant relation between self-esteem and cyberbullying ( $R = .50$ ,  $p < .01$ ). The variables cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality together explain 35% of total variance of self-esteem. According to the standardized regression coefficient ( $\beta$ ), the relative order of the predictive variables on self-esteem is neutrality, cyberbullying, cyber victimization, and cyberbullying/cyber victimization.

As for the t-test results concerning the significance of the regression coefficients, it is seen that the neutrality variable is a significant predictor of the self-esteem variable.

According to the results of the regression analysis, the regression equality for the variables self-esteem and cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality was found to be

SELF-ESTEEM= +34.57 -3.47 CYBER VICTIMIZATION + 4.96 CYBERBULLYING +2.86 CYBERBULLYING/CYBER VICTIMIZATION +5.95 NEUTRALITY.

The variables predicting extraversion was examined secondly in the research. The results of the regression analysis are given in Table 2.

**Table 3.** The Results of Multiple Regression Analysis on The Prediction of Extraversion

	<b>B</b>	<b>S.H.</b>	$\beta$	<b>t</b>	<b>p</b>	<b>Dual r</b>	<b>Partial r</b>
<b>Constant</b>	14.14	1.15		12.30	,00		
<b>Cyber Victim</b>	-2.54	1.19	-.31	-2.22	.03	-.32	-.09
Cyberbully	-.97	1.37	-.05	-.71	.48	-.03	-.03
Cyberbully/ Victim	-.82	1.29	-.58	-.64	.52	-.03	-.28
<b>Neutrality</b>	<b>.21</b>	<b>1.16</b>	<b>.03</b>	<b>.18</b>	<b>.86</b>	<b>.30</b>	<b>.01</b>

R= .33

R2= .11

F(4-514)= 15.98

p.= .00

In Table 3, the dual and partial correlation results were examined between the extraversion variable and the predictive variables cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality. It is seen that there is a negative and mid-level dual relation ( $r = .32$ ) between extraversion and cyber victimization; however, as for other variables, the partial correlation level between the two variables is negative and lower ( $r = .09$ ). There is a negative and low-level dual relation ( $r = .03$ ) between extraversion and cyberbullying, and as for other variables, the partial correlation level between the two variables is negative and lower ( $r = .03$ ). There is a negative and low-level dual relation ( $r = .03$ ) between extraversion and cyberbullying/cyber victimization, and as for other variables, the partial correlation level between the two variables is negative and lower ( $r = .02$ ). There is a positive and mid-level dual relation ( $r = .30$ ) between extraversion and neutrality but, as for other variables, the partial correlation level between the two variables is positive and lower ( $r = .08$ ).

When the variables cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality are considered together, there appears a positive, mid-level and significant relation between extraversion and cyberbullying ( $R = .33$ ,  $p < .01$ ). The variables cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality together explain 11% of total variance of extraversion. According to the standardized regression coefficient ( $\beta$ ), the relative order of the predictive variables on extraversion is cyber victimization, cyberbullying/cyber victimization, cyberbullying, and neutrality.

As for the t-test results concerning the significance of the regression coefficients, it is seen that the cyber victimization variable is a significant predictor of the extraversion variable.

According to the results of the regression analysis, the regression equality for the variables extraversion and cyberbullying, cyber victimization, cyberbullying/cyber victimization, and neutrality was found to be

EXTRAVERSION= +14.14 -2.53 CYBER VICTIMIZATION -.96 CYBERBULLYING -.82  
CYBERBULLYING/CYBER VICTIMIZATION +.21 NEUTRALITY.

## Discussion

Although studies on cyberbullying started in Turkey in the beginning of 2000s, they have revealed that such kinds of problems experienced at school are in considerable dimensions. With rapid improvements in technology and misuse of the information and communication technologies by youngsters who follow and use the technological development closely to hurt other people, cases of cyberbullying have started to be witnessed at schools. Such events at school may affect students psychologically, socially and academically in a negative way. In this study, the relationship between the self-esteem, introversion-extraversion levels of students who are cyberbullies, cyber victims, cyberbullies/cyber victims, and neutral in the research group. As a result, it is seen that neutrality (no participation in any cyberbullying case) is a significant predictor of self-esteem; cyberbullying, cyber victimization, and cyberbullying/cyber victimization are the significant predictors of self-esteem. A positive relation was found between the self-esteem level and neutrality. This shows that self-esteem levels of those who are not cyberbullies or cyber victims are high.

The self-esteem scores of students who are cyberbullies, cyber victims, cyberbullies/cyber victims, and neutral have parallel with findings in the literature (Campfield, 2008; Cenat et al., 2014; Hoff & Mitchell, 2009; Kowalski & Limber, 2007; Meadows et al., 2005; Patchin & Hinduja, 2010; Raskauskas & Stoltz, 2007; Ybarra & Mitchell, 2007). The findings of the study by Pişkin and Ayas (2005) are also in accordance with the findings of the study on traditional bullying.

Although the cases of cyberbullying do not have any physical impacts on those who are cyberbullied, victim students are psychologically affected in a negative way. It is stated in the literature that severe problems such as sorrow, disappointment, psychosomatic symptoms, absence at school, social adjustment disorder, fear of school, academic failure, loneliness, anxiety, depression, and suicide are observed in those who have been cyber-victimized (Beran & Li, 2005; Cenat et al., 2014; Gini & Espelage, 2014; Hawker & Boulton, 2000; Kirby, 2008; Nishina et al., 2005; Patchin & Hinduja, 2006; Ybarra & Mitchell, 2004). Another problem observed in the victims is having a low level of self-esteem. This has been proven in this study.

Generally, students with high levels of self-esteem may not experience much problem with their friends since they can take responsibility and establish positive relationships with others, and they have the personality traits of being open to new ideas and assertiveness. Students who have no problem with their friends may not exhibit negative behaviors towards them. This may be the reason why neutral students with high level of self-esteem have not engaged in such cases. Feeling desperate and oppressed as well as the fact that students cannot find an effective solution to their situation as a result of being cyberbullied may explain why their levels of self-esteem decreased.

Since individuals with high level of self-esteem regard themselves worthy and important, this may not affect their opinions of themselves negatively. The fact that neutral students, in other words, those who have not participated in any cyberbullying cases, regard themselves worthy and have not been influenced in a negative way shows that students should not engage in such events. Regardless of being cyberbully, cyber bully/cyber victim, and cyber victim, it is seen that participation in cyberbullying cases cause students' self-esteem levels to decrease. Supposing that cyberbullied students are more introvert, efforts should be made to increase the awareness levels of students, parents and teachers so that students do not engage in such events.



According to another finding of the research, the extraversion of students who are cyberbullies, cyber victims, cyberbullies/cyber victims and neutral, it is seen that cyber victimization is a significant predictor of extraversion. It is also seen that students who are cyberbullies, cyber victims, and cyberbullies/cyber victims have a negative relationship with extraversion, there is a positive relationship between neutral students and extraversion. Neutral students are more extravert than others. This finding has parallels with the findings of previous research (Connolly & O'Moore, 2003; Pişkin & Ayas, 2005). However, the findings of this study differ from findings of another study (Corcoran et al., 2012). The fact that previous researches have been conducted abroad may have caused such difference. As for the literature, it is difficult to come to a mutual understanding of personality traits and cyberbullying since studies on the relationship between personality traits and cyberbullying are limited and have obtained different results. Therefore, a shared opinion can be generated with increasing number of such studies.

The extroverts can be defined as a person who is more energetic, social, active, enterprising and positive. The introverts are likely to exhibit more withdrawn, shy behaviors and less active and positive feelings (Glass, Prichard, Lafortune, & Schwab, 2013), neutral students may not experience any problems with their friends whatsoever since they establish good social relationships due to being extraverts. Not having participated in any cyberbullying cases before may have brought about the fact that they have no problems with their friends. This may also ensure that these individuals stay away from virtual platforms because they can establish good relationships with their friends and they are more interested in social activities. The study "to effect of internet addiction level to personality traits of university students" by Servidio (2014) reveals extraverts spend less time on virtual platforms. Individuals spending more time on virtual platforms will be affected in their social relationships and may participate in the cases of cyberbullying. Since introverts' social relationships are not on desired levels and they cannot communicate with their friends easily, this may cause them to experience problems in their relationships. As a result of trying to compensate their problems on virtual platforms, they may have been effective in being cyberbullied. In the study by Ekşi (2012), it was stated that individuals whose social relationships deteriorated due to the internet have also broken relationships on virtual platforms.

Students' awareness should be raised so that they do not participate in the cases of cyberbullying since it is evident that individuals who somehow have engaged in such cases have lower levels of self-esteem than those who have not done so. The efforts of raising awareness should be made through their parents and schools. However, it would be more appropriate if such activities were conducted by separate informatics teachers on students and parents since parents often do not have sufficient level of knowledge on technological devices. Future studies may be performed to determine individuals' levels of participation in cyberbullying cases based on the level of awareness, and psychological symptoms of cyberbullied students.

Despite having a negative effect on mitigating the generalizability of the data obtained because the research group was chosen in one province, it can be said that the conformity of the data with the literature is a positive characteristic of the research. It would be useful to obtain data from studies to be conducted in schools in different provinces to increase the generalizability. In addition, it can be recommended to the researchers to investigate whether individuals' low levels of introversion and self-esteem cause them to become cyber victims or they become introvert and have low levels of self-esteem after having been cyberbullied.

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