

The Role of Personality Traits in Predicting Cyber-Bullying among Second-Year High School Students

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Abstract

The objective of the current study was to investigate the role of personality traits in predicting cyber-bullying among second year high school students in Zanjan. This was a descriptive correlational study. The statistical population included all male and female high school students in Zanjan. Considering the 15500 students in the population, the sample size turned out to be 384 ones based on Krejcie and Morgan formula. The sample was selected through convenience sampling method using virtual social networks. To collect data, NEO Five-Factor Inventory (NEO-FFI) (McCrae & Costa, 2004) and Cyber-Bullying/ Victimization Experiences Questionnaire (CBVEQ) (Antoniadou, Kokkinos, & Markos, 2016) were used. Data analysis was performed through Pearson correlation and stepwise multiple regression using SPSS software (version 25). The results showed that the relationship of neuroticism and openness to experience with cyber-bullying and cyber-victimization was significant and positive. In addition, the relationship of agreeableness with cyber-bullying and cyber-victimization was significant and positive. Furthermore, among personality traits, neuroticism and agreeableness could predict cyber bullying ($\beta=0.110$); and neuroticism could also predict cyber victimization ($\beta=0.117$). In general, the results indicated that when neuroticism and agreeableness increased, cyber-bullying and cyber-victimization also increased. This finding can be a guide for counselors and psychologists to prevent and reduce cyber-bullying and cyber-victimization.

Keywords: Personality Traits, Cyber-Bullying, Adolescent

Introduction

In recent decades, the use of different forms of information and communication technology (e.g., cell phone, tablet, and computer) has increased among adolescents and youths. Moreover, the rapid development of electrical devices and communicational applications has changed the sociability of youths. The use of communicational applications is more prevalent among youths in the developed countries. Although these applications are advantageous regarding creating new friendly relationships or maintaining the current family or friendly relationships, they have potential risks (Basharpour & Zardi, 2019). Some adolescents mainly abuse these applications to bull, bother or damage other adolescents. In fact, the term cyber-bullying refers to these types of behaviors (Smith, 2012).

Bullying is defined as an intentionally aggressive behavior which is repetitive and involves an observed or perceived power imbalance between a victim and a perpetrator (Gladden, Vivolo-Kantor, Hamburger, Lumpkin, 2014). Researchers have differentiated the two distinct forms of traditional bullying and cyber-bullying victimization (Chu, Fan, Lian, & Zhou 2019; Zhong, Huang, Huebner & Tian, 2021). Traditional bullying typically occurs face to face and may involve physical acts, verbal taunting, ridicule, social exclusion, relational aggression, or other behaviors (Saniel, Opeña, Balondo, Bunda, & Tambis, 2021). In addition to traditional bullying, cyber-bullying becomes visible as a relatively new form of bullying victimization which involves individuals or groups' aggressive behaviors through electronic or digital media (Kowalski, Giumetti, Schroeder, Lattanner, 2014). It sometimes differs from traditional forms of bullying in that the perpetrators remain anonymous (Pichel, Foody, O'Higgins Norman, Feijóo, Varela, & Rial, 2021), which may result in more increased psychological stress and provides the perpetrators with the benefit of the lack of face-to-face contact (Sampasa-Kanyinga, Roumeliotis, & Xu, 2014; Llorent, Diaz-Chaves, Zych, Twardowska-Staszek, & Marín-López, 2021). The individuals may be involved by being a victim, perpetrator, or victim-perpetrator. Traditional school bullying, which has potentially serious consequences for victims and families, is an old and persistent phenomenon. It has been defined as any aggressive behavior which comprises intentional harm, repetition, and power imbalance between the victim and the perpetrator in school settings (Gladden et al., 2014; Salmon, Turner, Taillieu, Fortier, & Afifi, 2018). More recently, a great amount of attention has been paid to cyber-bullying. Both forms of bullying are a significant problem worldwide and have negative consequences for individuals involved. Although the growing worldwide initiatives tended to decline bullying through prevention programs, particularly in school properties (Ttofi & Farrington, 2011), the prevalence of bullying involvement varies considerably, and studies report that approximately 10-30% of adolescents are involved as bullies, victims, or both (Smith, 2012, Eyuboglu, & et al, 2021).

These varied results may be influenced by factors such as the definition of bullying, sample size, reference time interval, and the way it was measured (Salmon et al., 2018). A recent, large-scale study which conducted among adolescents revealed that 15.9% of adolescents reported having been a victim of bullying (Craig et al., 2009). Another meta-

analysis of 80 studies which considered different bullying subtypes showed that the prevalence of traditional bullying and cyber-bullying in adolescents were 36% and 15%, respectively (Modecki, Minchin, Harbaugh, Guerra, Runions, 2014). In addition, Eyuboglu et al. (2021) investigated 6202 high school students and showed that the prevalence of traditional bullying in schools was 4.22%, and that of cyber-bullying was 10.4%.

Studies have shown that bullying behaviors may differ across cultures (Kanetsuna, Smith, Morita, 2006; Xu, Macrynikola, Waseem, & Miranda, 2020). It is still unclear if bullying experiences differ in terms of location (Salmon et al., 2018). There is also no consensus on genders as the victim of bullying. Some studies showed that boys are more likely to be victimized than girls (Bouffard & Koepfel, 2017), and other studies suggested opposed findings (Merrill & Hanson, 2016). However, it is commonly suggested that boys are more likely to experience the physical type of bullying, whereas girls are more likely to encounter psychological or relational victimization (Boel-Studt & Renner, 2013). Moreover, studies showed that traditional bullying victimization rate is lower in older schools, but the association between cyber-bullying and school grade comprise some inconsistent findings (Merrill & Hanson, 2016). In various studies, it has been reported that a substantially high prevalence of bullying involvement occurs in middle school students, particularly in grades six through eight (Nansel et al., 2001). Nevertheless, less is known about gender differences and school grades on all forms of bullying involvement, and there is a need to carry out more longitudinal studies.

Bullying and cyber-bullying are widely recognized as major psychosocial problems with substantial negative consequences. Studies reported the associations between bullying, self-harm behavior, and suicide among adolescents (Brunstein Klomek et al., 2010). Furthermore, victims of bullying are at an increased risk for social outcomes such as social competence deficit, feeling of powerlessness, and peer rejection (Humeira, Asniar, & Susanti, 2021). It has also been shown that bullying victimization is independently associated with higher psychological distress and decreased emotional well-being (Thomas et al., 2016). The existing literature indicates that extended exposure to bullying victimization is also associated with increased mental health problems (Evans et al., 2014). In other words, there is a dose-response relationship between bullying and mental health. It is also important to note that both victims and perpetrators can experience these psychosocial consequences (Conway, Høgh, Balducci & Ebbesen 2021).

In Eyuboglu et al.'s (2021) study, the experience of bullying as a victim and as a perpetrator was associated with anxiety, depression, psychosocial problems, and self-harming behaviors. It was found that girls were more affected than boys considering mental health. There was also a significant relationship between bullying victimization and negative mental health consequences. Cyber-bullying can stem from a variety of social and psychological factors, including personality traits (Khorsand Khatibani, Khosrow Javid, & Abolghasemi 2020).

Being consistent over time and in different cultures, personality traits determine how people interact (McCrae & Costa, 2008). The five characteristics of this model include neuroticism, extraversion, and openness to experience, agreeableness, and conscientiousness (Matthews, Deary, & Whiteman, 2003). Neuroticism refers to the

tendency to experience anxiety, stress, self-centeredness, hostility, impulsivity, shyness, irrational thinking, depression, and low self-esteem. Extraversion is the tendency to experience positive emotions, stimulation, kindness, and sociability (Ringwald, 2021). Openness to experience is the tendency to be curious, imaginative, aesthetic, rational, intellectual, and innovative (Rothstein & Jackson, 2021). Agreeableness refers to the desire for forgiveness, kindness, generosity, trust, empathy, obedience, sacrifice and loyalty. Finally, conscientiousness is the tendency towards organization, order, virtue, efficiency, reliability, self-control, progressivism, logic, and contemplation (McCrae & Costa, 2008).

The relationship between bullying and personality has been measured through different personality models, and is related to many personality structures (Volk, Provenzano, Farrell, A. Dane, & Shulman., 2021). For instance, research on the six-factor model of personality and bullying showed that honesty and humility were usually the best predictors of bullying behavior in adolescents (Reknes, Notelaers, Iliescu, & Einarsen, 2021). In addition, Diepenhorst (2014) found that bullies had a lower level of agreeableness than other groups. Mitsopoulou and Giovazolias (2015) also showed that lower levels of conscientiousness and agreeableness and higher levels of neuroticism and extraversion were associated with bullying and victimization. Furthermore, Ebrahimi Bejdani and Beni Si (2020) conducted a study in the context of Iran. They showed that personality traits, emotional intelligence and spiritual intelligence were significantly associated with cyber-bullying. As previously stated, cyber-bullying can be influenced by culture. Thus, it is necessary to conduct a study in Turkish culture, despite the fact that little research has been done in this field. Accordingly, the following questions are raised in the current study: What is the relationship between personality traits and cyber-bullying? To what extent can personality traits predict cyber-bullying?

Methods

This research study was applied regarding the objective, field study regarding the method of data collection, and correlational regarding the nature of research. The statistical population included all high school students (i.e., 15,500 students) in Zanjan in the academic year of 2019-2020. Based on Krejcie and Morgan's (1977) sampling formula, 384 students were selected through convenience sampling method (i.e., snowball sampling method).

The inclusion criteria included studying in the high school level and being willingness to participate in the study. Furthermore, the exclusion criteria included a defect in the returned questionnaires.

Due to the prevalence of Covid-19 and the closure of face-to-face classes, online questionnaires were used to collect data. Shad Virtual Social Network (affiliated to Iran educational System), Telegram, and WhatsApp were the main platforms for distributing the questionnaires. Some of the questionnaires were also distributed through the participants' sharing of the relevant link with their friends in the form of snowball sampling. After collecting the questionnaires, the data of 62 students was excluded due to the deficiencies in the returned questionnaires; data analysis was performed with 322

samples. Data analysis was conducted through Pearson correlation and stepwise multiple regression using SPSS software (version 25).

Included Research instruments

1. Demographic Information Questionnaire: This researcher-made questionnaire comprises demographic information, including gender, age, level of education and parents' occupation.

NEO Five-Factor Inventory, which includes 185 items, was developed by McCrae and Costa in 1985. Having conducted surveys, they developed 240 and 60 item forms to measure individuals' personality traits. In fact, this inventory has two versions, including the short form (S) and the revised form (R). The Short Form Five-Factor Inventory includes 60 items which are used for personal reports. The Revised NEO Personality Inventory includes 240 items. It is used for the sake of observers' evaluation. It can be used either independently to evaluate personality traits or accompanied by the short form to deliver detailed information or validity measures. In the present study, the Short Form NEO Five-Factor Inventory was used (McCrae & Costa, 2004).

This instrument measures the main five personality factors, including neuroticism through 12 items (i.e., 56, 51, 45, 41, 36, 31, 26, 21), extraversion through 12 items (i.e., 57, 52, 47, 42, 37, 32, 27, 22, 12, 7, 2), openness to experience through 12 items (i.e., 58, 53, 48, 43, 38, 33, 28, 23, 18, 13, 8, 3), agreeableness through 12 items (i.e., 59, 54, 49, 44, 39, 34, 29, 24, 19, 14, 9, 4, 2, 19, 14, 9, 4) and conscientiousness through 12 items (i.e., 60, 55, 50, 45, 40, 35, 30, 25, 20, 15, 10, 5). The score on each of the factors was between zero and 48. The items were scored using the 5-point Likert scale, which ranged from zero (strongly disagree) to four (strongly agree). Some of the items were inverted. In fact, each factor was measured through 12 items, and each factor's score was obtained by summing the score of its constituent items. A higher score on a factor indicated the higher level of that specific personality trait. Finally, the score of the inventory ranged from zero to 240 (McCrae & Costa, 2004).

The criterion validity of NEO Five-Factor Inventory was examined considering 208 American students, and it turned out to be 0.68. Test-retest reliability coefficients (at 3-month intervals) of the five factors of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness were reported as 0.86, 0.80, 0.75, 0.69, 0.79, respectively. Honda et al. (2012) confirmed the concurrent validity of Neo Five-Factor Inventory with Counterproductive Labor Behavior among 178 hotel staff in Malaysia. The correlations between Counterproductive Labor Behavior and the factors of extraversion, agreeableness, neuroticism and openness to experience were 0.19, 0.46, 0.26 and 0.21, respectively. Moreover, the internal consistency of the inventory was calculated through Cronbach's alpha coefficient in the sample considering the factors of neuroticism, extroversion, openness to experience, agreeableness and conscientiousness. They turned out to be 0.89, 0.81, 0.79, 0.83 and 0.88, respectively.

In Iran, NEO Five-Factor Inventory was translated to Persian and standardized by Grossi Farshi, Mehryarand Gazi Tabatabai, (2001). In order to examine the differential validity of the inventory, the correlation between the two types of personal report (S) and observer evaluation (R) was used considering 2000 Iranian students. The correlation was

0.66 considering extraversion; it was 0.45 considering agreeableness. The internal consistency reliability calculated through Cronbach's alpha coefficient in the above sample was between 0.56 and 0.87. Atash Rooz, Pakdaman & Asgari (2008) investigated the construct validity of the inventory on 98 students of Khuzestan province through factor analysis. The results showed that all the factors (except for extroversion) had a factor load higher than 0.40. In addition, the internal consistency calculated through Cronbach's alpha coefficient in the above sample considering the five factors were between 0.61 and 0.84.

Cyber-Bullying/Victimization Experiences Questionnaire (CBVEQ): This questionnaire was developed and validated by Antoniadou et al. (2016). It investigates the experience of cyber-bullying or cyber victimization among adolescents. It is scored in the form of a 5-point Likert scale, which range from zero (never) to five (often). This questionnaire considers two factors of cyber victimization and cyber-bullying; each factor is examined through 12 items. This questionnaire also measures bullying and cyber victimization directly and indirectly. Items 1, 6, 8, 10, and 12 measure cyber-victimization directly. They include factors such as destruction and misuse of property, verbal cyber-bullying, and intimidation. Furthermore, items 2, 3, 5, 7, and 9 measures cyber-bullying indirectly. They consider factors such as social deprivation, defamation and pretense. Antoniadou et al. (2016) showed that this questionnaire had a proper validity (CFI=.97, TLI= .97, and RMSEA=.031). They also showed that this questionnaire had an appropriate reliability. The Cronbach's alpha coefficients were .89 and .80 for cyber-bullying and cyber victimization, respectively.

Having examined 420 students in Iran, Basharpour and Zardi (2019) standardized this questionnaire. The results of factor analysis showed that this questionnaire had a good construct validity (CFI=.92, NFI= .91 and RMSEA=.071). Basharpour and Zardi (2019) estimated the reliability of this questionnaire; the Cronbach's alpha coefficients for cyber-bullying, cyber victimization and cyber-bullying-victimization were reported as .75, .78, and .79, respectively. In the present study, the reliability of this questionnaire was calculated using Cronbach's alpha coefficient. It turned out to be .75 for cyber bullying, .78 for cyber victimization, and .79 for cyber-bullying-victimization

Results

Table 1 presents the demographic characteristics of the participants.

Table 1. Demographic characteristics of the participants

Demographic	frequency	Percent
Gender		
Girls	260	80.2
Boys	64	19.8
Age		
16	54	16.7
17	93	28.7
18	99	30.6

19	50	15.4
The level of education		
Tenth grade	113	35.09
Eleventh grade	88	27.32
Twelfth grade	121	37.57
Father's educational level		
Below diploma	93	28.7
Diploma	101	31.2
A.A.	29	9
B.A.	41	12.7
M.A.	60	18.5
Mother's educational level		
Below diploma	119	36.7
Diploma	113	34.9
A.A.	8	2.5
B.A.	66	20.4
M.A.	18	5.6

As it is evident in Table 1, most of the students were girls (80.2%). Moreover, 16.7% were 16 years old, 28.7% were 17 years old, 30.6% were 18 years old and 15.4% were 19 years old. In addition, 35.09% studied in the tenth grade, 27.32% in the eleventh grade, and 37.57% in the twelfth grade. Furthermore, the educational level of most of the students' parents was diploma and lower.

Table 2. Minimum, maximum, mean, standard deviation, skewness and kurtosis of the variables

Variables	Min	Max	M	Std. D	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Neuroticism	16	54	36.22	7.75	.025	.135	-.214	.270
Extraversion	30	54	41.36	4.47	.401	.135	.144	.270
Openness	28	54	38.79	4.30	.418	.135	1.010	.270
Agreeableness	30	49	39.09	4.42	-.032	.135	-.805	.270
Conscientiousness	31	54	43.29	3.96	-.043	.135	.124	.270
Cyber-Bullying	12	36	14.09	3.60	3.408	.135	14.183	.270
Cyber-Victimization	12	49	17.40	6.21	2.463	.135	8.145	.270

Table 2 illustrates that from among personality traits, extraversion had the highest mean. Furthermore, cyber victimization was higher in students than cyber-bullying.

Table 3. Correlation between personality traits and cyber-bullying-victimization

Variables	1	2	3	4	5	6	7
1. Neuroticism	1						
2. Extraversion	.118*	1					
3. Openness	.237**	.383**	1				
4. Agreeableness	.399**	.265**	.401**	1			
5. Conscientiousness	.072	.446**	.360**	.373**	1		
6. Cyber-Bullying	.197**	.074	.137*	.192**	.041	1	
7. Cyber-Victimization	.146**	.036	.057	.127*	.091	.448**	1

N=, E=, O= to Experience, A=, C=, CB=, CV=. Note. * p <.05; ** p <.01

Table 3 illustrates that the relationship of neuroticism and openness to experience with cyber-bullying and cyber victimization was significant and positive. Moreover, the relation of agreeableness with cyber-bullying and cyber victimization was significant and positive.

Table 4. Stepwise multiple regression to predict cyber-bullying based on personality traits

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.77	.940		11.46	.0001
Neuroticism	.092	.025	.197	3.60	.0001
2 (Constant)	7.39	1.75		4.20	.0001
Neuroticism	.067	.027	.143	2.42	.016
Agreeableness	.11	.048	.135	2.27	.024

Note. ** p <.01. F=9.18**, Adjusted R Square=.048.

Table 4 reveals that from among personality traits, neuroticism and agreeableness could predict cyber-bullying ($\beta = .11$).

Table 5. Stepwise regression to predict cyber-bullying based on personality traits

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.176	1.638		8.045	.0001
Neuroticism	.12	.044	.146	2.643	.009

as it is evident in Table 5, from among personality traits, neuroticism could predict cyber victimization ($\beta = .12$).

Discussion

This study attempted to investigate the role of personality traits in predicting cyber-bullying among high school students in Zanjan. The results showed that the relationship of neuroticism and openness to experience with cyber-bullying and cyber-victimization was significant and positive. In addition, the relationship of agreeableness with cyber-bullying and cyber-victimization was significant and positive. Furthermore, among personality traits, neuroticism and agreeableness could predict cyber bullying; and neuroticism could also predict cyber victimization.

These findings are consistent with those of Wolk et al.'s (2018) study, which showed that honesty and humility were usually the best predictors of bullying behaviors in adolescents, Diepenhorst's (2014) study which showed that bullies had lower agreeableness than other groups, Mitsopoulou and Giovazolias's (2015) study which showed that lower levels of conscientiousness and agreeableness and higher levels of neuroticism and extroversion were associated with bullying and victimization, and Ebrahimi Bejdani and Beni Si's (2020) study which showed that cyber-bullying was significantly related to personality traits, emotional intelligence and spiritual intelligence.

Regarding the role of agreeableness in predicting cyber-bullying, it can be pointed out that people with low score on this feature have less forgiveness, kindness, flexibility and tolerance. They also have a low tolerance threshold and make harsh judgments about others.

Moreover, according to the results, the relationship between bullying and agreeableness can be explained through Low Self-control theory. In fact, people with low self-control seek immediate pleasure and lack empathy for others. Bullies have low self-control due to greater neuroticism and the lack of agreeableness (Moon et al., 2011). This group of students seems to have low flexibility in their interpersonal relationships and look for the fastest way to express their emotions.

Regarding the possible explanation of cyber-bullying prediction through neuroticism, it can be stated that the neurotics tend to experience psychological distress in the form of anxiety, depression, embarrassment, hatred, and a range of negative emotions. They have irrational emotions, inability to control impulsive behaviors, weakness in coping with problems, shyness and vulnerability (Bowden-Green et al., 2021). Therefore, considering these features, neuroticism can be considered a negative and significant predictor of cyber-bullying.

Conclusion

This study's findings should be considered in light of some limitations. First, since the present study is cross-sectional, and it was not possible to control all the intervening variables, the participants may have been affected by conditions beyond the researchers' control. Thus, findings should be generalized with caution. Therefore, it is suggested that in future research studies, data can be collected non-virtually so that in addition to increasing the attention level of respondents, the researcher observes the process of completing the questionnaires and interacts with the participants to guide and encourage them to respond more accurately. Second, since data was collected virtually due to the

prevalence of COVID-19, the use of random sampling method was limited. Third, the current study examined high school students in Zanjan. Thus, this study can be replicated in other cities and other samples. Their results can be compared with that of the present study.

The findings indicated that out of personality traits, agreeableness and neuroticism played an important role in explaining cyber-bullying. Hence, school counselors and clinical psychologists can reduce cyber-bullying by focusing on these traits.

Disclosure Statements

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