

Cyberbullying: relationship with developmental variables and cyber victimization[■]

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Abstract

Background and objective: Cyberbullying is increasingly turning into a significant problem for children and adolescents due to its adverse psychological and academic outcomes. In the present study, the protective and risk factors for cyberbullying has been investigated. One of the aims of the study was to examine the relationship between peer relations, negative emotion regulation strategies, and cyberbullying. The successful identity development process is thought to influence both cyberbullying behaviors as well as adolescents' peer relations and emotion regulation. Also, cyber victimization is seen as a risk factor for cyberbullying. The second aim of the study is to investigate the causal relationship between cyber victimization and cyberbullying.

Method: The study is a descriptive research in which both cross-sectional and longitudinal data were used. In the cross-sectional part of the study, 1,151 adolescents have participated, and the data of the second wave was obtained from 322 of them four months later. Data were analyzed through structural equation modeling (SEM) and hierarchical regression analyses.

Results and conclusion: According to the results of SEM, good peer relations predicted less cyberbullying. The expressive repression explained the cyberbullying through peer relationships. For identity development, contrary to expectations, commitment dimension of identity seemed to be positively related to more cyberbullying and so did higher reconsideration of commitment. Cross-lagged panel analyses revealed that Time 1 cyber victimization predicted Time 2 cyberbullying. Given the pattern of cross-lagged relationships, it was tentatively inferred that cyber victimization was the temporal precursor to cyberbullying. The results of the study have implications for the prevention of cyberbullying.

Keywords: cyber victimization; cyberbullying; identity development; peer relations; expressive repression; cross-lagged panel design.

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Introduction

The technology is gradually having an important impact on adolescents, as online communication becomes a significant part of their social life (1). At the same time, bullying, that is aggressive repetitive behaviors against a defenseless victim (2), has found a new medium, online environments. Cyberbullying is defined as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and overtime against a victim who cannot easily defend him or herself" (3). In other words, cyberbullying is the act of bullying

others while cyber victimization is being subjected to others' bullying acts. Since it has adverse psychological consequences (4-7), academic outcomes (8-10), and increasing rates (11) more research is needed to understand the causal factors for cyberbullying.

One of the most critical psychosocial and developmental characteristics of adolescents is identity development. According to Erikson (12), identity brings in adolescents "purpose and direction" in life, and provides a sense of "inner sameness and continuity" over time and place.

Although many researchers (13, 14) investigated this concept, the research recently has been focusing on the process by which identity develops. One of the process-oriented identity models was the three-dimensional identity model of identity formation (15). It focuses on three processes in ideological (i.e. education) and interpersonal (i.e. relationship with best friend) area. The first process, commitment, refers to making permanent choices in life and the sense of confidence in these choices. In-depth exploration, the second process, refers to the more detailed examination of choices adolescents made, questioning them, and striving for more in-depth information about the choices. The last process, which is the reconsideration of commitment, means that adolescents are not happy with their choices and look for alternatives. As a result of these processes, adolescents dynamically form their identity and discover who they are.

The identity formation process, which is intensive during the adolescence period, makes adolescents more vulnerable to online risks. Valkenburg and Peter (16) emphasized that adolescents could face cyberbullying and unwanted sexual demands. Intense interest in sexuality during this period could result in being subjected to sexting, a kind of cyberbullying (17). Finally, identity exploration in online environments was found to be related to cyberbullying (18). Especially adolescents with "identity fluidity", i.e. assuming different online identities, had higher rates of cyberbullying. In short, the process of identity development confronts adolescents with higher online risks. On the other hand, a well-developed identity that is making commitments and exploring them protect them from risky behaviors (19-21). No study so far has investigated the protective effect of identity development on cyberbullying. On basis of the literature findings which revealed the protective role of a well-developed identity in different kinds of risky behaviors, it may be possible that adolescents with higher commitment and in-depth exploration would engage in less cyberbullying behaviors.

It is essential to find out the cause of cyberbullying. One of the theories of cyberbullying, general strain theory (GST), states that strain factors cause cyberbullying and there are three primary sources of strain in negative relationships with others (22). These are the prevention of someone from achieving positively valued goals, removing or threatening to remove positively valued stimuli, and present or threaten to present someone with dangerous or negatively valued stimuli. For example, adolescents who think that they cannot achieve the deserved success, who lost one of their friends in an accident or who have to move to another city, could experience strain. Anger and similar negative

emotions, which result from a negative relationship with others, lead to aggressive behaviors in adolescents. In social media, being a cyber victim is also a source of strain. An adolescent who is excluded from a group in social media, threatened to post personal information online or denigrated experiences strains.

The strains cause negative emotions of which anger has particular importance for GST since it arouses revenge and activates the person. In a study in three different European countries, anger was found to be the most expressed emotion when the emotional effects of varying bullying behaviors were examined (23).

In the case of cyberbullying, GST identified many causes for cyberbullying behaviors. Traditional victimization, for example, was found to be an essential source of strain in terms of cyberbullying (24). Adolescents who were subjected to traditional victimization engaged in more cyberbullying behavior than those who were not, which meant that they acted out their anger online. This study also found that other sources of stress, such as parental stress (conflicts between parents and adolescents), studying for the university entrance exam, and financial burdens (insufficient pocket money) caused cyberbullying behaviors. Similarly, Lianos and McGrath (25) investigated the effects of being a cyber victim, perceived social support, academic stress, and financial stress. They found that participants, who experienced more of these strains, felt more anger and which in turn lead to more cyberbullying behaviors. Parental relationships, peer relationships, peer rejection, school, and homework stress were investigated as the causes of strains for adolescents in another study (26). The results revealed that these strain factors significantly predicted cyberbullying behaviors.

Peer relations are one of the strain factors proposed by GST. During the adolescence period, the importance of parents increasingly declines (27), while the time spent with peers shows a sharp increment (28). They strive for independence from the family and support from their friends (29). When the relationship between peer relations and cyberbullying examined, adolescents who perceived their friends as reliable, supportive, and caring were less likely to engage in cyberbullying behaviors (1). Besides, adolescents who had low social support from peers (30), who had a lesser attachment to their peers (31) and who perceived less help and support from them (32), were found to engage in more cyberbullying behaviors. The patterns of peer relationships, quality of friendship, and behavioral adjustment in real life predicted peer relations in online environments (33). Peer relations also have a

buffering role in the victimization of cyberbullying (34).

Anger is an important motivator for many aggressive behaviors and cyberbullying. Yet not all adolescents who experience strains engage in cyberbullying. The reason why some better cope with their negative emotions could be related to emotion regulation strategies. Emotion regulation is an internal or external process that includes monitoring, evaluating, and changing the intensity, timing and emotional responses to reach a goal (35). It determines which emotions people will have, how will they experience and express them (36). There are mainly two types of emotion regulation strategies (37). In cognitive reappraisal, the person tries to reevaluate the emotional impact or meaning of the situation, which arouses the emotion. It is carried out during the production phase of emotions. In expressive suppression, the person actively and consciously tries to suppress or inhibit the behavioral expression of emotions. It is achieved after the production of emotion. The former is associated with positive well-being, more positive emotions, less negative emotions and better interpersonal relationships, whereas the latter is associated with depression, negative mood (38-40), less positive emotions and more negative emotions (36). In other words, while the cognitive reappraisal is accepted as a better strategy for emotion regulation, the expressive repression is recognized as a more negative strategy.

The research on the relationship between emotion regulation and cyberbullying is usually derived from the research on traditional bullying. It has been known that emotion regulation is related to aggressive behaviors and traditional bullying (41, 42). Both bullies and victims have deficiencies in their emotion regulation strategies (43). There are fewer

studies on the relationship between cyberbullying and emotion regulation. It was reported that cyberbullies and cyberbully/cyber victims were not successful at expressing their emotions and they experience their negative emotions more intensively when compared to those who were unrelated to bullying or who were cyber victims (44). Moreover, adolescents who had deficiencies in positive emotion regulation strategies like cognitive reappraisal did more cyberbullying (45). Emotion regulation strategies influence not only cyberbullying but also cyber victimization behaviors. Adolescents with non-adaptive emotion regulation strategies, such as self-blame, other-blame, rumination and catastrophizing, were found to engage in more cyberbullying behaviors longitudinally than those with adaptive emotion regulation strategies (46). Also, cyber victims who use positive emotion regulation strategies (i.e. such as putting into perspective, positive refocusing, positive reappraisal, acceptance and refocusing on planning) improved better than those using negative ones (47). Eventually, emotion regulation strategies, particularly negative ones like expressive repression, are expected to be related to positively with cyberbullying.

To sum up, based on the literature, peer relations are expected to be related to cyberbullying behaviors. In the presence of poor relationships with peers and expressive repression, one of the negative emotion regulation strategies, adolescents would have difficulty in managing negative emotions and are expected to engage in more cyberbullying. In this context, identity development in the interpersonal relationship area is a broader concept influencing peer relations, emotion regulation strategies and cyberbullying. Figure 1 depicts the proposed model about the relationship between these variables.

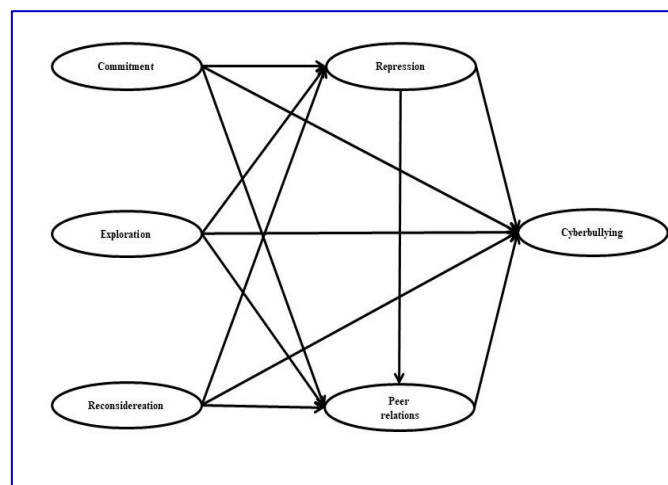


FIGURE 1. Proposed Cross-Sectional Model about the Relationship between Dimensions of Identity Development, Peer Relations, Emotion Regulation Strategies and Cyberbullying

Based on the research on aggressive behaviors, exposure to aggressive behaviors is associated with performing similar acts later (48). Most of the theories which help to the understanding of cyberbullying, concentrate on the importance of exposure to cyberbullying behaviors. General aggression theory, based on social learning and social cognitive theories, was proposed to explain the relationship between aggressive behaviors and violence in media (49). When applied to cyberbully, exposure to cyberbullying is accepted as one of the factors for the emergence of similar behaviors (50). Similarly, the Barlett and Gentile cyberbullying model (51) explain how cyberbullies continue to be cyberbullies. The theory emphasizes the importance of learning in the maintenance of these behaviors. Cyberbullying experiences lead to the beliefs of anonymity. The cyberbully eventually learns that the harmful act can be done anonymously and develop a positive attitude. The theory is thought to be incomplete in the sense that it did not take into account that the same learning is likely for cyber victims. In other words, cyber victims just as cyberbullies, could learn that the act of cyberbullying often goes undetected. Hence, they are more likely to engage in similar cyberbullying behaviors.

The relationship between cyberbullying and cyber victimization is clearly demonstrated in many cross-sectional studies (52-57). Some studies reported the co-occurrence of cyberbullying and cyber victimization as high as 80% (58, 59), whereas others did not report such a relationship (60). Li (61) founded that the best predictor of cyber victimization was cyberbullying behavior. Besides, the transition between being a cyberbully and the cyber victim is thought to be easy due to the nature of the online environment (62). The longitudinal relationship has been investigated in fewer studies. Barlett and Gentile (51) investigated the cross-lagged relationship between two variables with two months interval. They reported that there was a strong relationship between two variables, both cross-sectionally and longitudinally. Another study also said that being a cyber victim was significantly associated with being a cyberbully six months later yet it did not significantly predict the cyberbullying behaviors (63). Still, another study tested if cyber victims turns out to be cyberbullies (57). The results revealed that cyberbullying behaviors were not significantly predicted from three months earlier cyber victimization, despite the significant correlation between them. Similar results were obtained in a study with a one-year interval (64). In short, the cyber victimization and cyberbullying were

longitudinally associated with each other despite the lack of any causal evidence.

The ambiguity regarding the causal relationship between cyber victimization and cyberbullying involvement can be overcome with cross-lagged panel models that allow describing reciprocal relationships between variables (65-68). In these models, measurement of the same variables has taken at two or more points in time. Both the directional influences of variables (cross-lags) and the stability of each variable over time can be estimated. Thus, identification of cross-lagged effects between cyberbullying and cyber victimization will elucidate the relationship between these variables. Also, it will reveal whether cyber victims learn to cyberbully through exposure.

Thus, the present study has two aims. First, it aims to investigate the relationship between peer relations, emotion regulation and cyberbullying cross-sectionally, and to examine the role of identity development on cyberbullying and other variables. A cross-sectional model (Figure 1) will test the relationship between expressive repression, peer relations and cyberbullying. The direct relationship between identity development and cyberbullying, in addition to the indirect relationship through peer relations and expressive repression will also be revealed in this model. Second, the study aims to explain the causal relationship between cyberbullying and cyber victimization. A cross-lagged panel model will be applied to reveal the causal precedence of them, in addition to the stability of them across two waves. The cross-lagged relationship from Time 1 (T1) cyber victimization to Time 2 (T2) cyberbullying would be larger than the cross-lagged relationship from T1 cyberbullying to T2 cyber victimization.

Method

Procedure

The investigation was conducted using a standardized survey during class hours, with permission from the Ethical Committee (Ankara University), Ministry of National Education and informed consent from parents and students. Students were informed about the opportunity to refuse participation, although none of them declined. Before giving the questionnaires, the students were told to write the school numbers if they would like to participate in the second part of the study. Data were collected from the same sample twice with four months interval.

Participants

Total 1,389 high school students between the ages of 13-20, attending different types of high schools (9th-

12th grades) in Ankara in the 2017-2018 educational year participated in the first wave of the study. Of the sample, 155 cases were not included in the sample because of the missing data or response pattern (same response to all questions). The remaining cases were examined in terms of missing cases and multivariate outliers, 55 cases with more than 5% missing, and 28 univariate/multivariate outliers were removed from the sample. The final sample consisted of 1,151 adolescents (648 [6.3%] female) from various types of high schools (28.8% Academic High School, 18% Social Sciences School, 48.5% Vocational High School and 4.7% vocational education center). The mean age was 15.23 (SD = 1.08).

Data for the second wave were obtained at the end of the second semester. Only 500 students from the first sample were reached because of the high absenteeism. Data for 156 cases were not paired due to the lack of school numbers. After the analysis of missing cases and outliers, a total of 344 students (232 [72%] female) took part in the second wave of the study. Students had an average age of 15.25 years (SD=1.11).

Independent samples *t*-test indicated that participants who provided data for both waves did not differ from those who provided data only for the first wave in terms of initial cyber victimizations scores ($t_{(1,109)} = 1.04, p > 0.05$) and mean age ($t_{(1,098)} = -0.76, p > 0.05$). However, cyberbullying scores of those who attend the both wave ($M = 13.05, SD = 4.38$) are significantly higher ($t_{(1,110)} = 3.09, p < 0.05$) than those who attend only the first wave ($M = 12.20, SD = 3.42$). This should be taken into account when interpreting the current findings. χ^2 tests indicated that participants who attend the second wave were significantly more likely to be female ($\chi^2_{(1, N=1,206)} = 54.44, p < 0.05$). However, the gender difference was not expected to distort the results since no analyses focused on the effect of gender.

Measures

Revised cyberbullying inventory-II (RCBI-II)

Cyberbullying were measured through RCBI-II. It is a 10-item questionnaire, was developed by Erdur-Baker and Kavşut (69) and revised by Topcu and Erdur-Baker (70). It assessed frequencies of participants' cyberbullying and cyber victimization behaviors on a four-point Likert scale (never, once, two-three times, more than three times) ($\alpha = 0.69$). The cyber victimization refers to the total scores of the cyber victimization section of the inventory ("It happened to me" column). The cyberbullying refers to the total scores of cyberbullying section ("I did it" column).

Utrecht-management of identity commitments scale (U-MICS)
It was developed (14) to measure adolescents' identity development process and adapted into Turkish (71). It consisted of 26 items, three dimensions, commitment ($\alpha = 0.90$), in-depth exploration ($\alpha = 0.77$), and reconsideration of commitment ($\alpha = 0.82$) in two areas; education and interpersonal relations. The items are designed using a five-point Likert scale ranging from completely untrue (1), to completely true (5). For the present study, the relational part of the scale (13 items) was employed.

Friendship qualities scale

It examined the friendship qualities of adolescents (72) and adapted to the Turkish (73). It has 22 items and five dimensions, help ($\alpha = 0.89$) companionship ($\alpha = 0.68$), conflict ($\alpha = 0.69$), security ($\alpha = 0.72$) and closeness ($\alpha = 0.87$). The respondents are asked to think about one of their close friends and answer the questions using a five-point Likert scale ranging from completely untrue (1) to completely true (5). The Cronbach's α for the whole scale was 0.87.

Emotion regulation scale

The scale, initially developed by Gross and John (74) and adapted into Turkish (75), aimed to measure the individual differences in emotion regulation using ten items rated on a six-point Likert type scale from completely true to completely untrue. It has two dimensions, cognitive reappraisal ($\alpha = 0.64$) and emotional repression ($\alpha = 0.70$). The latter was used to measure repressive emotion in the present study.

Analyses

The proposed model was analyzed by the structural equation modeling (SEM) in LISREL 8.71. Before the analysis, the data were examined for the assumptions of SEM. The two-stage approach in which the measurement and the structural models are tested separately was preferred in SEM (76). Sample size, missing values, outliers, multicollinearity, linearity and homoscedasticity assumptions were met. Since the data did not meet the assumptions of normality, robust maximum likelihood with asymptotic covariance matrices was preferred as suggested by Jöreskog, Olsson and Wallentin, (77). Model-data fit were evaluated by using Satorra-Bentler χ^2/df , root mean square error of approximation (RMSEA), standardized root mean square residual (SRMSR), comparative fit index (CFI) and Tucker Lewis index (TLI). The acceptable fit values are less than 5 for Satorra-Bentler χ^2/df , less than 0.08 for RMSEA, less than 0.05 for SRMSR, greater than 0.90 for CFI and TLI (78).

To compute the standard coefficients of the relationships in the cross-lagged panel model, two

hierarchical regression analyses were employed (SPSS 24.0). Before the analysis, data were checked for the assumptions of the regression analysis. In each regression analysis, time one measures of predicted variables were controlled by being entered in the first block of analysis.

TABLE 1. The descriptive statistics and correlations between variables

	1	2	3	4	5	6	7
1. Cyberbullying							
2. Cyber victimization	0.58**						
3. Peer relations	0.10**	-0.11**					
4. Expressive repression	-0.06*	0.03	0.02				
5. Commitment	-0.03	-0.03	-0.54**	-0.02			
6. In-depth exploration	0.06**	0.07*	0.34**	-0.09**	0.43**		
7. Reconsideration of commitment	0.00	0.01	-0.16**	0.13**	-0.13**	0.26**	
Sample mean	12.66	13.26	3.63	14.88	3.79	3.11	2.27
Standard deviation	3.56	3.99	0.58	4.84	0.96	0.85	1.05

Notes. N = 1,151. *p < 0.05; **p < 0.01

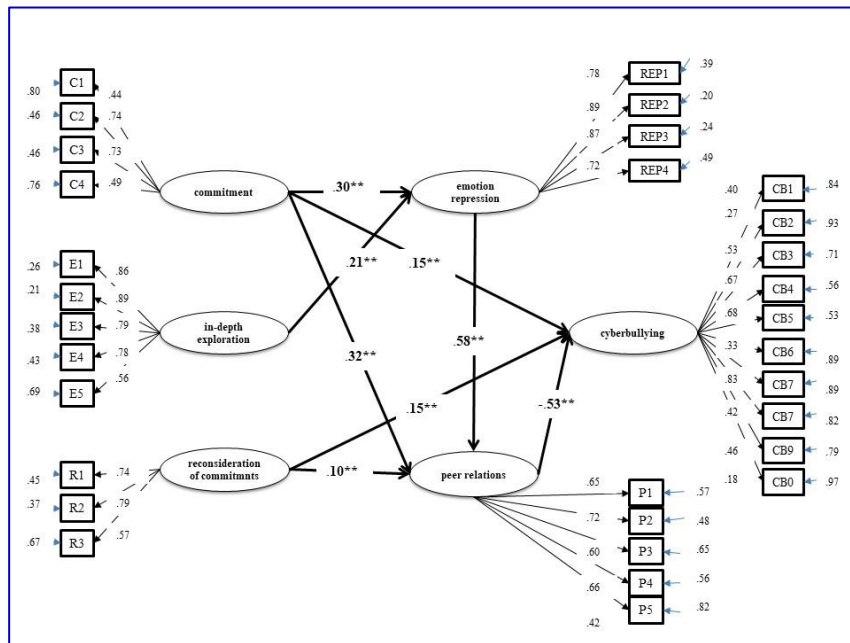


FIGURE 2. Standardized Coefficient of Cross-Sectional Model of Cyberbullying ($p > 0.05$)

Results

Test of the cross-sectional model of cyberbullying

Correlations between the variables in the study, mean and standard deviations are presented in Table 1. According to the table, the variables of the study has small to medium correlations with each other.

First of all a measurement model was tested using six latent variables (cyberbullying, emotional repression, peer relations, and three dimensions of interpersonal identity) and 31 observed variables. An

acceptable model fit was obtained (SB $\chi^2 = 1,646.64$, $df = 419$, SB $\chi^2/df = 3.92$, RMSEA = 0.05, SRMR = 0.059, TLI = 0.94, CFI = 0.94). Then, the proposed structural model was tested. The non-significant paths between in-depth exploration-cyberbullying ($t = -0.50$, $\beta = -0.02$); in-depth exploration-peer relations ($t = -0.22$, $\beta = -0.01$); reconsideration of commitment-emotional repression ($t = -1.94$, $\beta = -0.09$) and emotional repression-cyberbullying ($t = 1.49$, $\beta = 0.10$) were removed from the model. The

resulting model produced acceptable fit values (SB $\chi^2 = 1,651.21$, $df = 423$, SB $\chi^2/df = 390$, RMSEA = 0.50, SRMR = 0.058, TLI = 0.94, CFI = 0.95). The standard coefficients of the tested cross-sectional model were presented in Figure 2.

According to the model, the most critical variable affecting cyberbullying was peer relations ($\beta = -0.53$, $t = -9.08$, $p < 0.001$). There was a negative relationship between peer relations and cyberbullying behaviors. In other words, in the presence of good peer relations, adolescents engaged in less cyberbullying.

The expressive repression explained the cyberbullying through peer relationships. The relationship between expressive repression and peer relations was positive ($\beta = 0.58$, $t = -9.08$, $p < 0.001$). Adolescents who repressed their emotions more reported better relationships with their friends than those who did not.

The second aim was to observe the effects of identity development directly on cyberbullying and indirectly through peer relations and expressive repression. According to the structural model, of the three dimensions of identity development, commitment ($\beta = 0.21$, $t = 3.92$, $p < 0.01$) and reconsideration of commitment ($\beta = 0.15$, $t = 3.59$, $p < 0.05$) had positive effects on cyberbullying. Contrary to expectations, adolescents with higher commitments who made their permanent choices in the relational area seemed to do more cyberbullying. Those with reconsidering their commitments and unhappy with their relations were, as expected, more likely to do cyberbullying acts. Commitment also had positive effects on expressive repression ($\beta = 0.30$, $t = 7.71$, $p < 0.01$) and peer relations ($\beta = 0.32$, $t = 8.07$, $p < 0.05$). Adolescents with higher commitments used a repressive strategy to regulate their emotions and they had better friendship quality. In-depth

exploration was found to be related to expressive repression ($\beta = 0.15$, $t = 4.37$, $p < 0.01$) which meant that adolescents who deeply examined their choices, just like those with higher commitments, repressed their emotions more. Finally, by contrast with expectations, adolescents who were reconsidering their commitments, seemed to have better relations with their friends ($\beta = 0.10$, $t = 2.95$, $p < 0.05$).

Test of the cross-lagged panel model

In terms of descriptive statistics, the mean scores for cyber victimization at Time 1 ($\bar{x} = 13.26$, $SD = 3.99$) and at Time 2 ($\bar{x} = 13.24$, $SD = 3.84$) were found to be higher than cyberbullying at Time 1 ($\bar{x} = 12.66$, $SD = 3.56$) and at Time 2 ($\bar{x} = 12.49$, $SD = 3.72$). There were significant positive moderate correlations between the variables of the study. The descriptive statistics and correlations are presented in Table 2.

In order to understand the longitudinal relationship between cyberbullying and cyber victimization, cross-lagged panel design analyses were conducted. Two hierarchical regression analyses were conducted to compute the standard coefficients between the cross-lagged relationships between T1 and T2 measures of cyber victimization and cyberbullying. First, the assumptions of the regression were tested. Data with more than 5% missing cases (12 cases) and multivariate outliers (16 cases) were omitted. The analyses were performed with the remaining 322 cases, which is a large enough sample size (79). The medium correlations between variables, tolerance (0.71), variance inflation factor (1.41) and condition index (11.80) ensured multicollinearity, residual, and scatter plots indicated the assumptions of normality (79). The results are presented in Table 3. The findings of the cross-lagged panel design were presented in Figure 3.

TABLE 2. The descriptive statistics and correlations between variables

	Cyberbullying T1	Cyber victimization T1	Cyberbullying T2	Cyber victimization T2
Cyberbullying T1	1			
Cyber victimization T1	0.58**	1		
Cyberbullying T2	0.56**	0.42**	1	
Cyber victimization T2	0.41**	0.55**	0.64**	1
M	12.66	13.26	12.49	13.24
SD	3.56	3.99	3.72	3.84

Notes. $N = 322$. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

TABLE 3. The hierarchic regression analysis results

Predicted variables	Predictor variables	B	SEr	β	
CV (T2)	Model 1	Constant	5.58	0.69	
	Model 2	CV(T1)	0.57	0.05	0.52**
CB (T2)	Model 1	Constant	5.41	0.87	
	Model 2	CV (T1)	0.55	0.06	0.51**
	Model 2	CB (T1)	0.02	0.08	0.02
Note: For Model 1 $R^2 = 0.27$ ($p < 0.001$); for Model 2 $\Delta R^2 = 0.00$ ($p > 0.001$)					
CV (T2)	Model 1	Constant	6.00	0.64	
	Model 2	CB (T1)	0.51	0.05	0.48**
CB (T2)	Model 1	Constant	5.11	0.66	
	Model 2	CB(T1)	0.37	0.06	0.35**
	Model 2	CV (T1)	0.20	0.05	0.24**
Note: For Model 1 $R^2 = 0.23$ ($p < 0.001$); for Model 2 $\Delta R^2 = 0.04$ ($p < 0.001$)					

Notes. $N = 322$. ** $p < 0.00$ CV (T1): Cyber victimization at Time 1; CV (T2): Cyber victimization at Time 2; CB (T1): Cyberbullying at Time 1; CB (T2): Cyberbullying at Time 2

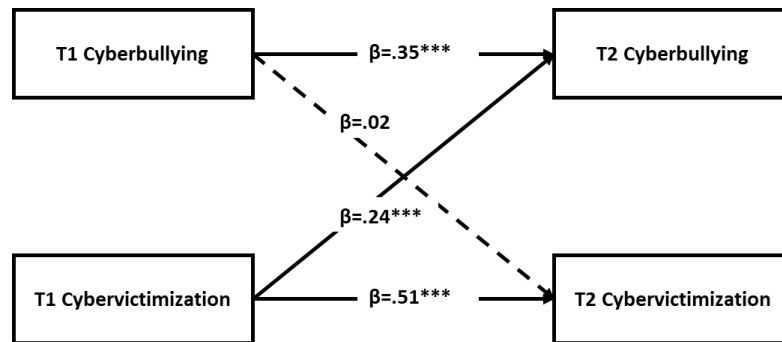


FIGURE 3. The cross-lagged panel model of cyber victimization and cyberbullying with four months interval. Non-significant paths are dotted. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the first analysis, after controlling for T1 cyber victimization ($\beta = 0.51^{**}$, $t = 8.98$, $R^2 = 0.27$, $p < 0.001$), T1 cyberbullying did not significantly predicted T2 cyber victimization ($\beta = 0.02$, $t = 0.34$, $\Delta R^2 = 0.00$, $p > 0.001$). Being a cyber victim was predicted from four months earlier cyber victimization but not from cyberbullying. In the second hierarchical regression analysis, the effects of T1 cyberbullying and T1 cyber victimization on T2 cyberbullying behaviors were analyzed. This time after controlling for T1 cyberbullying ($\beta = 0.35$, $t = 6.07$, $R^2 = 0.23$, $p < 0.001$), T1 cyber victimization significantly predicted T2 cyberbullying behaviors ($\beta = 0.24$, $t = 4.16$, $\Delta R^2 = 0.04$, $p < 0.001$).

Moreover, the results of the analysis also revealed that both cyberbullying and cyber victimization were stable across time (0.35 and 0.51, respectively). The pattern of significant (T1 cyber victimization to T2 cyberbullying of 0.24) and non-significant (T1

cyberbullying to T2 cyber victimization of 0.02) standard coefficients of cross-lagged paths allows the inference of temporal precedence of cyber victimization to cyberbullying.

Discussion

The study aimed to reveal the cross-sectional relationship between the developmental variables and cyberbullying, in addition to finding out the cross-lagged relationship between cyberbullying and cyber victimization. The results showed that having good peer relations were related to less cyberbullying behavior. Expressive repression, as a negative emotion regulation strategy, is positively associated with peer relations. In other words, adolescents who repressed their emotions more had better relationships with their peers, and those with better peer relations did less cyberbullying. Surprisingly, adolescents with higher identity commitment

(successful identity) and adolescents with higher reconsidering their commitment (unsuccessful identity) did more cyberbullying. Thus contrary to expectations, a successful identity process did not protect adolescents from engaging cyberbullying behaviors. Another aim was to look at the causal relationship between cyberbullying and cyber victimization. The results supported that cyber victims turned out to cyberbullies with time by showing that being a cyber victim was related to cyberbullying four months later.

One of the aims of the study was to test the relationship between peer relations, expressive repression and cyberbullying. Peer relations were found to have a negative relationship with cyberbullying. This finding is consistent with the expectation of GST, which accepts peer relationships as a source of strain. Peer relations, by itself, were seen as a reason for cyberbullying (80). Moreover, patterns of a face-to-face relationship with peers were repeated in online environments (33). The finding that adolescents who were excluded by their friends were more likely to engage in externalizing behaviors (81), also explains that those with better friendship involved in less cyberbullying.

Since expressive repression is a negative emotion regulation strategy, it was expected to correlate with cyberbullying positively. The results showed that it has an indirect effect on cyberbullying through peer relationships. Once again, it stressed the importance of peer relations. In spite of using negative emotion regulation, they had good relationships with peers that, in turn, protected them from misbehaving in online environments. Expressive repression was found to be correlated with peer relations positively, contrary to the literature. Actually, this strategy was connected to problems in interpersonal relations (82). But the finding differed according to culture. In Asian cultures, repressing emotions were not perceived as unfavorable as in European cultures. Turkish culture might be more alike in Asian cultures in terms of emotional expression. Especially in terms of negative emotions, repression rather than the expression of emotion seemed preferable for a better interpersonal relationship.

Another aim was to explore the relationship between the dimensions of identity development and cyberbullying. As expected, the reconsideration of commitment had a weak positive correlation with cyberbullying. This dimension of identity means that the adolescent is unhappy with the present relations and in a search process. It is associated with more psychosocial problems (83, 84). Therefore, they can experience issues with their friends in online environments. Due to the cross-sectional design of this model, it could also be possible that the adolescent who engages in online cyberbullying

activities would be more likely to reconsider their current relationships and search for new friends.

On the contrary to expectations, the findings revealed a weak positive relationship between the commitment dimension of identity development and cyberbullying. It was stated no study so far seemed to investigate this relationship in the literature. However, a well-developed identity was expected to protect adolescents from cyberbullying, a kind of risky behavior (19). Adolescents tended to hide their real names, ages, or gender in online environments (85). The nature of the cyber environment does not allow the individuals to detect the identity of the bully and usually, cyberbullying is unpunished (86, 87). As a result, adolescents would calculate fewer risks online, threatening someone or spread rumors or visual materials about a friend. Thus, the protective effects of identity may not work in cyber environments. Another explanation for this finding would be related to the possibilities which the online environment presented to adolescents. The cyber environment is a place where they can communicate with others, socialize, express themselves and test different identities (17). Sexual exploration, one of the subjects attract their attention, is more accessible and perceived as less risky in online environments (16). Also, social media provide them with feedback about their identity trials (88). More engagement in online environments for identity search could result in more developed identity, i.e. more commitment and more cyberbullying behaviors.

Results indicated that T1 cyber victimization predicted T2 cyberbullying, whereas T1 cyberbullying did not predict T2 cyber victimization. Consequently, it appears that being a cyber victim precedes being a cyberbully in time. In other words, cyber victims learn to cyberbully through exposure. The finding is important in terms of explaining cyberbullying behaviors. Both General Aggression Theory and Barlett and Gentile's Cyberbullying Model posit that exposure to cyberbullying is vital in the emergence of cyberbullying behaviors, although the two theories explain the mechanism differently. The former relies on social learning principles, whereas the latter stresses the importance of anonymity beliefs. The current results provided support for both theories. However, the mechanisms through which cyber victims become cyberbullies are still vague.

In addition to cross-lagged relationships between cyber victimization and cyberbullying, the lagged relationships, as shown by significant autoregressive correlations revealed that both variables were stable over time. This finding is consistent with previous studies that reported significant longitudinal associations (51, 63). It is seen that bullying or being victimized in the cyber environment is not a one-time

event; it persists if not intervened. This result uncovers the need for prevention.

The prior longitudinal studies have provided additional support for the causal relationship between T1 cyber victimization and T2 cyberbullying, with different time intervals changing from three months to one year (57, 63, 64). These studies did not differ from the current research in terms of the sample characteristics. They reported significant correlations similar to the present study. However, in none of these studies, cyberbullying was significantly predicted from prior cyber victimization.

The results correspond to those of Den Hamer and Konjin (46), who investigated the effects of emotion regulation strategies on cyber victimization and cyberbullying relationships longitudinally. They reported that cyber victims turn into cyberbullies, especially if they are not good at regulating their emotions. The results are inconsistent with those reported by Barlett and Gentile (51), who similarly investigated cross-lagged correlations between cyberbullying and cyber victimization. They found both cross-lagged relationships significant; even the relationship from T1 cyberbullying to T2 cyber victimization was higher than the vice versa. The difference might be due to the sample, which consisted of university students. Also, the shorter time interval between waves (two months) in that study might be another factor for the difference. Unfortunately, both studies had two waves. As Kearney (67) suggested, the lag between measurements should be enough to observe the effects of variables. Thus, it would be better to include more than two waves to see the effects. The findings also revealed that both cyber victimization and cyberbullying are stable over time. The result is also consistent with prior research.

Making causal inferences as a result of cross-lagged panel analysis is a disputable subject in the literature. Some researchers argue that they cannot be accepted as causal models, but they are still powerful for starting a discussion on the causal effect of one variable on another (65). It is challenging to reveal cause-effect relationships through experimental designs in developmental researches. Tyagi and Singh (66) claim that these models can give a clue about the cause-effect relationship between the variable in cases where it is impossible to use real experimental designs. In either case, this study presents important findings on the temporal relations between cyberbullying and cyber victimization.

Given the increasing importance of cyber environments for identity search during adolescence, the present research will contribute to filling the gap in the literature on the relationship between identity development and cyberbullying. Future research

could explore a causal relationship with longitudinal models because the cross-sectional nature of the present study does not allow to make an inference about whether a well-developed identity caused more cyberbullying behaviors or not. Additionally, more research is needed, which unveils why and how cyber victims do more cyberbullying through the inclusion of possible emotions such as anger or revenge, as stated by GST.

Clinical significance

Overall, this study demonstrated the importance of peer relations and cyber victimization for cyberbullying. Adolescents with difficulty in peer relationships are more vulnerable to engage in cyberbullying, thus being a clear target for prevention programs in educational settings. Moreover, the finding that children and adolescents who experienced cyber victimization are more likely to cyberbully in the future has also implications for prevention. Preventive efforts should focus on increasing awareness on how to respond to cyber victimization. Alternative responses to cyberbullying would help them to fight against cyberbullying. The research and practice should more focus on interventions for cyber victims who are prone to be cyberbullied after some time.

Conflicts of interest

The authors declare no conflicts of interests.

References

- Williams KR, Guerra NG. Prevalence and predictors of internet bullying. *J Adolesc Health* 2007;41(Suppl 6):S14-21.
- Olweus D. Bullying at school. In: Huesmann LR (Eds.) *Aggressive behavior. The plenum series in social/clinical psychology*. Boston, MA: Springer; 1994. pp. 97-130.
- Smith PK, Mahdavi J, Carvalho M, Fisher S, Russell S, Tippett N. Cyberbullying: Its nature and impact in secondary school pupils. *J Child Psychol Psych* 2008;49(4):376-85.
- Baker ÖE, Tannkulu İ. Psychological consequences of cyber bullying experiences among Turkish secondary school children. *Procedia Soc Behav Sci* 2010;2(2):2771-6.
- Patchin JW, Hinduja S. Bullies move beyond the schoolyard: a preliminary look at cyberbullying. *Youth Violence Juv Justice* 2006;4(2):148-69.
- Litwiller BJ, Brausch AM. Cyber bullying and physical bullying in adolescent suicide: the role of violent behavior and substance use. *J Youth Adolesc* 2013;42(5):675-84.
- Van Geel M, Vedder P, Tanilon J. Relationship between peer victimization, cyberbullying, and suicide in children and adolescents: a meta-analysis. *JAMA Pediatr* 2014;168(5):435-42.
- Arslan S, Savaser S, Hallett V, Balci S. Cyberbullying among primary school students in Turkey: Self-reported prevalence and associations with home and school life. *Cyberpsychol Behav Soc Netw* 2012;15(10):527-33.

9. Betts LR, Spenser KA, Gardner SE. Adolescents' involvement in cyber bullying and perceptions of school: the importance of perceived peer acceptance for female adolescents. *Sex Roles* 2017;1-11.
10. Gardella JH, Fisher BW, Teurbe-Tolon AR. A systematic review and meta-analysis of cyber-victimization and educational outcomes for adolescents. *Rev Educ Res* 2017;87(2):283-308.
11. Rivers I, Noret N. 'I h8 u': findings from a five-year study of text and email bullying. *Br Educ Res J* 2010;36(4): 643-71.
12. Erikson EH. The problem of ego identity. *J Am Psychoanal Assoc* 1956;4(1):56-121.
13. Berzonsky MD. Identity processing style, self-construction, and personal epistemic assumptions: a social-cognitive perspective. *Eur J Dev Psychol Psychology* 2004;1(4):303-15.
14. Marcia JE. Development and validation of ego-identity status. *J Pers Soc Psychol* 1996;3(5):551-8.
15. Crocetti E, Rubini M, Meeus W. Capturing the dynamics of identity formation in various ethnic groups: development and validation of a three dimensional model. *J Adolesc* 2008;31(2):207-22.
16. Valkenburg PM, Peter J. Online communication among adolescents: an integrated model of its attraction, opportunities, and risks. *J Adolesc Health* 2011;48(2):121-7.
17. Eleuteri S, Saladino V, Verrastro V. Identity, relationships, sexuality, and risky behaviors of adolescents in the context of social media. *Sex Relation Ther* 2017;32(3-4):354-65.
18. Walrave M, Heirman W. Cyberbullying: predicting victimisation and perpetration. *Child Soc* 2011;25(1):59-72.
19. Dumas TM, Ellis WE, Wolfe DA. Identity development as a buffer of adolescent risk behaviors in the context of peer group pressure and control. *J Adolesc* 2012;35(4):917-27.
20. Jones RM, Hartmann BR. Ego identity: developmental differences and experimental substance use among adolescents. *J Adolesc* 1988;11(4):347-60.
21. Morsünbül Ü. Ergenlikte kimlik statüleri ve risk alma arasındaki ilişki [The relationship between identity status and risk taking in adolescence]. *İlköğretim Online* 2013;12(2):347-55.
22. Agnew R. Foundation for a general strain theory of crime and delinquency. *Criminology* 1992;30(1):47-88.
23. Ortega R, Elipe P, Mora-Merchán JA, Calmaestra J, Vega E. The emotional impact on victims of traditional bullying and cyberbullying: a study of Spanish adolescents. *Zeitschrift für Psychologie/J Psychology* 2009;217(4):197-204.
24. Jang H, Song J, Kim R. Does the offline bully-victimization influence cyberbullying behavior among youths? Application of general strain theory. *Comput Hum Behav* 2014;31:85-93.
25. Lianos H, McGrath A. Can the general theory of crime and general strain theory explain cyberbullying perpetration? *Crime Delinq* 2018;64(5):675-700.
26. Paez GR. Cyberbullying among adolescents: A general strain theory perspective. *J Sch Violence* 2018;17(1):74-85.
27. Meeus W, Dekovic M. Identity development, parental and peer support in adolescence: Results of a national Dutch survey. *Adolescence* 1995;30(120):931-45.
28. Fuligni AJ, Stevenson HW. Time use and mathematics achievement among American, Chinese, and Japanese high school students. *Child Dev* 1995;66(3):830-42.
29. Hong JS, Espelage DL. A review of research on bullying and peer victimization in school: An ecological system analysis. *Aggress Violent Behav* 2012;17(4):311-22.
30. Bingöl N, Tanrıku T. Siber zorba ve mağdur olma ile algılanan sosyal destek düzeyi arasındaki ilişkinin incelenmesi. [Investigating the relationship between perceived social support and cyber bullying and cyber victimization]. *Akademik Bakış Uluslararası Hakemli Sosyal Bilimler E-Dergisi* 2014;43:1-17.
31. Burton KA, Florell D, Wiygant DB. The role of peer attachment and normative beliefs about aggression on traditional bullying and cyberbullying. *Psychol Schools* 2013;50(2):103-15.
32. Cappadocia MC, Craig WM, Pepler D. Cyberbullying: prevalence, stability, and risk factors during adolescence. *Can J School Psychol* 2013;28(2):171-92.
33. Mikami AY, Szewedo DE, Allen JP, Evans MA, Hare AL. Adolescent peer relationships and behavior problems predict young adults' communication on social networking websites. *Dev Psychol* 2010;46(1):46-56.
34. Katzer C, Fetchenhauer D, Belschak F. Cyberbullying: Who are the victims? A comparison of victimization in internet chatrooms and victimization in school. *J Media Psychol* 2009;21(1):25-36.
35. Thompson RA. Emotion regulation: a theme in search of definition. *Monogr Soc Res Child* 1994; 59(2-3), 25-52.
36. Gross JJ. Antecedent-and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *J Pers Soc Psychol* 1998;74(1):224-37.
37. John OP, Gross JJ. Healthy and unhealthy emotion regulation: personality processes, individual differences, and life span development. *J Personality* 2004;72(6):1301-34.
38. Hofmann SG, Heering S, Sawyer AT, Asnaani A. How to handle anxiety: the effects of reappraisal, acceptance, and suppression strategies on anxious arousal. *Behav Res Ther* 2009;47(5):389-94.
39. Larsen JK, Vermulst AA, Eisinga R, English T, Gross JJ, Hofman E, et al. Social coping by masking? Parental support and peer victimization as mediators of the relationship between depressive symptoms and expressive suppression in adolescents. *J Youth Adolesc* 2012;41(12):1628-42.
40. Haga SM, Kraft P, Corby EK. Emotion regulation: antecedents and well-being outcomes of cognitive reappraisal and expressive suppression in cross-cultural samples. *J Happiness Stud* 2009;10(3):271-91.
41. Terranova AM, Morris AS, Boxer P. Fear reactivity and effortful control in overt and relational bullying: a six-month longitudinal study. *Aggress Behav* 2008;34(1):104-15.
42. Shields A, Cicchetti D. Parental maltreatment and emotion dysregulation as risk factors for bullying and victimization in middle childhood. *J Clin Child Psychol* 2001;30(3):349-363.
43. Cicchetti D, Ackerman BP, Izard CE. Emotions and emotion regulation in developmental psychopathology. *Dev Psychopathol* 1995;7(1):1-10.
44. Garner PW, Hinton TS. Emotional display rules and emotion self-regulation: Associations with bullying and victimization in community-based after school programs. *J Community Appl Soc Psychol* 2010;20(6):480-96.
45. Kokkinos CM, Voulgaridou I. Links between relational aggression, parenting and personality among adolescents. *Eur J Dev Psychol* 2017;14(3):249-64.
46. Den Hamer AH, Konijn EA, Keijer MG. Cyberbullying behaviors and adolescents' use of media with antisocial content: a cyclic process model. Paper presented at the International Communication

- Association (ICA) annual conference to be held in London, June 17-21, 2013.
47. Kelly BM, Schwartz D, Gorman AH, Nakamoto J. Violent victimization in the community and children's subsequent peer rejection: the mediating role of emotion dysregulation. *J Abnorm Child Psych* 2008;36(2):175-85.
 48. Anderson CA, Buckley KE, Carnagey NL. Creating your own hostile environment: a laboratory examination of trait aggressiveness and the violence escalation cycle. *Pers Soc Psychol Bull* 2008;34(4):462-73.
 49. Bushman, BJ, Anderson CA. Violent video games and hostile expectations: a test of the general aggression model. *Pers Soc Psychol Bull* 2002;28(12):1679-86.
 50. Kowalski RM, Giumetti GW, Schroeder AN, Lattanner MR. Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth. *Psychol Bull* 2014;140(4):1073-137.
 51. Barlett CP, Gentile DA. Attacking others online: The formation of cyberbullying in late adolescence. *Psychol Pop Media Cult* 2012;1(2):123-35.
 52. Accordino DB, Accordino MP. An exploratory study of face-to-face and cyberbullying in sixth grade students. *American Secondary Education* 2011;40(1):14-30.
 53. Akbulut Y, Eristi B. Cyberbullying and victimisation among Turkish university students. *Australas J Educ Tec* 2011;27(7):1155-70.
 54. Ang RP, Goh D. Cyberbullying among adolescents: the role of affective and cognitive empathy, and gender. *Child Psychiatry Hum Dev* 2010;41(4):387-97.
 55. Bauman S. Cyberbullying in a rural intermediate school: an exploratory study. *J Early Adolesc* 2010;30(6):803-33.
 56. Bauman S. Cyberbullying: What does research tell us? *Theory Pract* 2013;52(4):249-56.
 57. Del Rey R, Elipe P, Ortega-Ruiz R. Bullying and cyberbullying: overlapping and predictive value of the co-occurrence. *Psicothema* 2012;24(4):608-13.
 58. Campbell MA. Cyber bullying: an old problem in a new guise? *J Couns Psychol Sch* 2005;15(1):68-76.
 59. Juvonen J, Gross EF. Extending the school grounds? – Bullying experiences in cyberspace. *J Sch Health* 2008;78(9):496-505.
 60. Calvete E, Orue I, Estévez A, Villardón L, Padilla P. Cyberbullying in adolescents: modalities and aggressors' profile. *Comput Hum Behav* 2010;26(5):1128-35.
 61. Li Q. Bullying in the new playground: research into cyberbullying and cyber victimization. *Australas J Educ Tec* 2007;23(4):435-54.
 62. Aboujaoude E, Savage MW, Starcevic V, Salame WO. Cyberbullying: review of an old problem gone viral. *J Adolesc Health* 2015;57(1):10-18.
 63. Sticca F, Ruggieri S, Alsaker F, Perren S. Longitudinal risk factors for cyberbullying in adolescence. *J Community Appl Soc* 2013;23(1):52-67.
 64. Fanti KA, Demetriou AG, Hawa VV. A longitudinal study of cyberbullying: examining risk and protective factors. *Eur J Dev Psychol* 2012;9(2):168-81.
 65. Selig JP, Little TD. Autoregressive and cross-lagged panel analysis for longitudinal data. In: Laursen B, Little TD, Card NA (Eds.). *Handbook of developmental research methods*. New York, NY: The Guilford Press; 2012. pp. 265-278.
 66. Tyagi TK, Singh B. The application of cross-lagged panel analysis in educational research. *Facta Universitatis, Series: Philosophy, Sociology, Psychology and History* 2014;2(14):39-51.
 67. Kearney MW. Cross lagged panel analysis. In: Allen M (Eds.). *The SAGE encyclopedia of communication research methods*. Thousand Oaks, CA: Sage; 2017.
 68. Voelkle MC, Oud JH, Davidov E, Schmidt P. A SEM approach to continuous time modeling of panel data: relating authoritarianism and anomia. *Psychol Methods* 2012;17(2):176-92.
 69. Erdur-Baker Ö, Kavşut F. The new face of peer bullying: cyberbullying. *Eurasian J Educ Res* 2007;27(27):31-42.
 70. Topcu Ç, Erdur-Baker Ö. RCBI-II: The second revision of the revised cyber bullying inventory. *Meas Eval Couns Dev* 2018;51(1):32-41.
 71. Morsünbül U, Crocetti E, Cok F, Meeus W. Brief report: The Utrecht-Management of Identity Commitments Scale (U-MICS): gender and age measurement invariance and convergent validity of the Turkish version. *J Adolesc* 2014;37(6):799-805.
 72. Bukowski WM, Hoza B, Boivin M. Measuring friendship quality during pre-and early adolescence: the development and psychometric properties of the Friendship Qualities Scale. *J Soc Pers Relat* 1994;11(3):471-84.
 73. Atik ZE, Çoban AE, Çok F, Doğan T, Karaman NG. The Turkish adaptation of the friendship qualities scale: a validity and reliability study. *Educ Sci Theory Pract* 2014;14(2):433-46.
 74. Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *J Pers Soc Psychol* 2003;85(2):348-62.
 75. Özgüle ETU. Mediating role of self-regulation between parenting, Attachment, and adjustment in middle adolescence, [Unpublished Doctoral Dissertation]. Middle East Technical University, Ankara; 2011.
 76. Anderson JC, Gerbing DW. Structural equation modelling in practice: a review and recommended two-step approach. *Psychol Bull* 1988;103(3):411-23.
 77. Jöreskog KG, Olsson UH, Wallentin FY. *Multivariate analysis with lisrel*. Basel:Springer; 2016.
 78. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance + structure analysis: conventional criteria versus new alternatives. *Struct Equ Modeling* 1999;6(1):1-55.
 79. Tabachnick BG, Fidell LS. *Using multivariate analysis*. New York, NY: Harper Collins; 2001.
 80. Hoff DL, Mitchell SN. Cyberbullying: causes, effects, and remedies. *J Educ Admin* 2001;47(5):652-65.
 81. Janssens A, Van Den Noortgate W, Goossens L, Verschueren K, Colpin H, De Laet S, et al. Externalizing problem behavior in adolescence: Dopaminergic genes in interaction with peer acceptance and rejection. *J Youth Adolesc* 2015;44(7):1441-56.
 82. Butler EA, Egloff B, Wilhelm FH, Smith NC, Erickson EA, Gross JJ. The social consequences of expressive suppression. *Emotion* 2003;3(1):48-67.
 83. Crocetti E, Klimstra TA, Hale WW, Koot HM, Meeus W. Impact of early adolescent externalizing problem behaviors on identity development in middle to late adolescence: a prospective 7-year longitudinal study. *J Youth Adolesc* 2013;42(11):1745-58.
 84. Crocetti E, Rubini M, Luyckx K, Meeus W. Identity formation in early and middle adolescents from various ethnic groups: from three dimensions to five statuses. *J Youth Adolesc* 2008;37(8):983-96.

85. Çetin AB, Ceyhan AA. Ergenlerin İnternet'te kimlik denemeleri ve problemleri İnternet kullanım davranışları [Adolescents' online identity trials and problematic internet usage]. *The Turkish J Addict* 2014;1(2):5-46.
86. Menesini E. Cyberbullying: The right value of the phenomenon. Comments on the paper "Cyberbullying: an overrated phenomenon?". *Eur J Dev Psychol* 2012;9(5):544-52.
87. Subrahmanyam K, Šmahel D. Constructing identity online: Identity exploration and self-presentation. In: Subrahmanyam K, Šmahel D (Eds.). *Digital youth. The role of media in development*. New York, NY:Springer; 2011. pp. 59-80
88. Monago A. Identity development in the digital age: The case of social networking sites. In: McLean KC, Syed M (Eds.). *The Oxford handbook of identity development*. New York, NY: Oxford Library of Psychology; 2015. pp. 508-524.