Ann Med Res

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Annals of Medical Research

journal page: www.annalsmedres.org

The relationship between traditional bullying/cyberbullying with resilience, anxiety and depression in adolescents

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ARTICLE INFO

Keywords:
Adolescents
Bullying
Cyberbullying
Resilience
Victimization

Received: May 18, 2022
Accepted: Sep 02, 2022
Available Online: 27.09.2022

DOI:
10.5455/annalsmedres.2022.05.170

Abstract

Aim: Both bullying and victimization are a serious negative life experience for children and adolescents and the effects are not limited to the period of bullying, but may last for a lifetime and negatively affect the mental health. In this study, we aimed to investigate the frequency of bullying and victimization of adolescents-both traditional and cyber- and to determine their relationship with resilience, anxiety and depression.

Materials and Methods: This study was carried out online with 207 adolescents. The participants filled the demographic data form, Bullying and Cyberbullying Scale for Adolescents, Adolescent Psychological Resilience Scale (APRS), DSM-5 Anxiety Scale-Child, DSM-5 Depression Scale-Child.

Results: The traditional bully, traditional victim, cyberbully and cyber victims or non-victims were compared, no statistically significant difference was found between demographic characteristics. When the effect of being a victim or a bully on DSM-5 Depression, DSM-5 Anxiety and APRS total scores were analyzed by linear logistic regression analysis, it was determined that being a traditional victim is a potential risk factor for increasing depression and anxiety and decreasing in resilience.

Conclusion: Bullying exposure predicts psychiatric morbidity in the already difficult adolescence; therefore, prevention of this situation should be a priority in preventive public health.

Introduction

Bullying has been defined as the exposure, repeatedly and over time, to negative actions by a person or a group, which occurs under the law of silence and a dominance submission scheme [1]. Participants in adolescence bullying take up one of three roles: the victim, the bully (or perpetrator) or the bully–victim who is both a perpetrator and a victim of bullying [2]. The concept of victimization although not as clearly defined as the concept of bullying, it is known as the state of "being bullied". In the case of bullying and victimization by using information and communication technology, the concepts of Cyberbullying and Cyber Victimization emerge.

Bullying is recognized as a global health problem by the World Health Organization (WHO) and United Nations Educational, Scientific and Cultural Organization (UNESCO) [3,4]. Studies have shown that bullying can affect both the bully and the victim in a wide population from primary school to university [5, 6]. In an international study conducted by WHO, bullying behaviors were lowest in Wales (girls: 13%, boys: 28%), and highest in Greenland (girls: 67%, boys: 78%). In this study also the lowest rates of victims were reported in Sweden (girls: 13%, boys: 15%), and the highest in Greenland (girls: 72%, boys: 77%) In a study conducted in the USA, it was reported that 59% of young people aged 13-17 experienced cyberbullying as a bully or victim [7]. In Turkey, a large-sample study (n=1129) examining the cyberbullying experiences of adolescents showed that 65.5% of the adolescents were cyber victims, 56.6% were cyberbullies, and 76.9% were both cyber victims and cyberbullies [8].

It is accepted that bullying is a serious negative life experience for children and adolescents and the effects are not limited to the period of bullying, but may last for a lifetime and negatively affect the public health [9-11]. Problems such as depression, suicide, psychosomatic problems, low self-perception, and tendency to violence are common in both bullies and victims [12,13]. Previous studies have shown that being a bully or victim is associated with depression, suicidal ideation and suicide attempt [14-16].

In a follow-up study examining the relationship between bullying and depression in 2010, it was found that both

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being a bully or a victim were predictors of later depression in boys, and the former depression predicted latter victimization in girls [17].

One of the psychopathologies of interest in the bullying literature is "anxiety". From the perspective of both bullies and victims, it is observed that there is an increased risk of anxiety compared to those who have never been involved in bullying. Studies conducted in this context have shown that bullying and being a victim are associated with many other types of anxiety, especially social anxiety [18,19]. In 2015, in a meta-analysis examining 65 studies, it was suggested that there is a positive relationship between exposure to bullying and anxiety level [20].

Resilience can be broadly defined as the capacity of a dynamic system to adapt successfully to disturbances that threaten its functioning, viability or development [21]. It has been previously shown that resilience is a protective factor against a number of negative outcomes, including bullying [22]. However, when the literature is examined, studies evaluating the relationship between bullying and cyberbullying together with resilience, anxiety and depression in adolescents are seems to be limited Although this issue has come to the fore in recent years, considering that technological developments are increasing rapidly and it may become an increasing problem in the coming years, so current studies are important.

In this study, it was aimed to investigate the frequency of bullying and victimization of adolescents-both traditional and cyber- between the ages of 16-18 and to determine their relationship with resilience, anxiety and depression.

Materials and Methods

Sample

Kaltiala-Heino et al. reported that the prevelance of depression as 9%, and in our study, the prevelance of depression was estimated to be as 15% (17). When α=0.05, 1-β (power)=0.80 in the sample size calculation performed according to this estimation, it was determined that this study should be conducted with at least 206 participants. This cross-sectional study was carried out online with first-year university students between 20-31 July 2021. Adolescents were invited to participate in the online survey with their parents' consent. Snowball sampling method was used in the study and 290 participants initially took part in the survey. After excluding the participants who over 18 years old (n=83), 207 participants from Inonu University, Malatya, Turkey were involved in the current study. In the first part of the online survey, written consent was obtained from the parents of the participants. No participant or parent received any compensation during this research. The study was approved by Health Sciences Non-Invasive Clinical Research Local Ethics Committee Approval (protocol number: 2021/2276).

Procedure

The participants filled the demographic data form, Bullying and Cyberbullying Scale for Adolescents (BCS-A), Adolescent Psychological Resilience Scale (APRS), DSM-5 Level 2 Anxiety Scale-Child (DSM-5-AS-C), DSM-5 Level 2 Depression Scale-Child (DSM-5-DS-C). The sociodemographic characteristics of the participants (age, gender, family type, residential area, and income levels), BCS-A, APRS, DSM-5 Level 2 Anxiety Scale and DSM-5 Level 2 Depression Scale scores were recorded. Participants were divided into four groups (Traditional bullying, Traditional bullying victimization, Cyberbullying, Cybervictimization) according to their answers to BCS-A. Sociodemographic characteristics of the groups, APRS, DSM-5 Level 2 Anxiety Scale and DSM-5 Level 2 Depression Scale scores were statistically compared.

Methods

Demographic data form

This form was prepared by the researchers and consisted of six questions. The questions were about age, gender, family type, residential area, and income levels.

Bullying and Cyberbullying Scale for Adolescents (BCS-A)

Bullying and Cyberbullying Scale for Adolescents (BCS-A) was developed by Thomas et al., in 2019 to assess the bullying and victimization status of the adolescents between the ages of 12 and 18 [23]. The draft scale developed was composed of parallel two tests (victimization and bullying) each of which consists 20 items. The final form of the scale has been developed as two parallel tests, each of which is composed of 13 items, and 8 fixed sub-scales. The parallel tests are the victimization and bullying tests and the subscales are composed of the physical, verbal, relational and cyber subscales. The score of each subscale is obtained by dividing the total score obtained from the questions in that subscale into the number of questions. The Turkish validity and reliability study of the scale was conducted [24].

Adolescent Psychological Resilience Scale (APRS)

The Adolescent Psychological Resilience Scale (APRS), which was developed to measure psychological resilience and consists of 29 items, was used in the study. The scale consists of sub-dimensions of family support, school support, peer support, adaptation, empathy, and determination to struggle. The sub-dimension of family support is measured with 7 items, the sub-dimension of peer support with 5 items, the sub dimension of school support with 5 items, the sub-dimension of adaptability with 4 items, the dimension of determination to struggle with 5 items, and the dimension of empathy with 3 items. The scores that can be obtained from the scale range from 29 to 116. Not suitable for me at all is given a "1" point, while a very suitable option for me is given a "4" point. Some questions in the scale were reverse coded. Increasing scores; shows high psychological resilience [25].

DSM-5 Level 2 Anxiety Scale-Child

This scale is a DSM-5-dimensional scale and adapted from the Patient-Reported Outcomes Measurement Information System (PROMIS) [26]. The scale consists of 13 items and is filled by adolescents themselves. It provides a five-point Likert type assessment (1=never, 5=almost all the time). For each item, the Adolescent is asked to rate the severity of symptoms regarding anxiety disorders for the past 7

days. Higher scores reflect the presence of much more severe anxiety symptoms. The T-score table which was shared by APA is used to identify the T-score associated with the child's total raw score and the information entered in the T-score row on the measure. According to the T-score, the level of anxiety symptoms is defined as follows: <55 indicate none to slight; 55-59 indicate mild; 60-69 indicate moderate; and 70 or more scores indicate severe [27]. The Turkish validity and reliability study for the scale was has been conducted [28]. In the current investigation, Cronbach's alpha for the total score was 0.94.

DSM-5 Level 2 Depression Scale-Child

This scale is a DSM-5-dimensional scale and adapted from the PROMIS [26]. The scale consists of 14 items and is filled by adolescents themselves. It provides a five-point Likert type assessment (1=never, 5=almost all the time). For each item, the adolescent is asked to rate the severity of depressive symptoms for the past 7 days. Higher scores reflect the presence of much more severe depressive symptoms. The T-score table, which was shared by APA, is used to identify the T-score associated with the child's total raw score and the information entered in the T-score row on the measure. According to the T-score, the level of anxiety symptoms is defined as follows: <55 indicate none to slight; 55-59 indicate mild; 60-69 indicate moderate; and 70 or more scores indicate severe [27]. The Turkish validity and reliability study for the scale has been conducted [29]. In the current investigation, Cronbach's alpha for the total score was 0.95.

Statistical analysis

Data were statistically analyzed using the SPSS (Statistical Program for the Social Sciences Version 17.0) program. Data related to quantitative variables are given as mean ± standard deviation and minimum-maximum, while data related to qualitative variables are given as number and percentage. Normal distribution of data was investigated with the Shapiro-Wilk normality test. The hypothesis of this study is that there are significant differences in terms of sociodemographic variables, APRS, DSM-5 Level 2 Anxiety Scale and DSM-5 Level 2 Depression Scale scores between those who are traditional/cyber bullying or victims and those who do not. In this respect, qualitative data of the groups were analyzed by chi-square analysis and quantitative data were analyzed by independent sample t-test. Considering that the participants may be in more than one bullying role, linear regression analysis was used to evaluate the independent relationship between roles in classical or cyberbullying and APRS, DSM-5 Level 2 Anxiety Scale and DSM-5 Level 2 Depression Scale scores. Values of $p < 0.05$ were accepted as statistically significant.

Results

Of the 207 adolescents participating in the study, 79.2% were girls (n=164) and 20.8% (n=43) were boys. The mean age of all participants was 17.17±0.49. Parents of 88.9% (n=184) of the participants were together, and 11.1% (n=23) of them were divorced. Of the participants, 80.7% (n=167) lived in a nuclear family with 30.9% (n=64) had low, 51.2% had medium (n=106), and 17.9% (n=37) had high family income. Of the participants, 10.1% (n=21) were identified as traditional bullies, 25.1% (n=52) as traditional victims, 7.7% (n=16) as cyberbullies, and 15.9% (n=33) as cyber victims. Demographic data of the participants are given in Table 1.

Table 1. Sociodemographic characteristics of participants.

Characteristics		n= 207	%
Gender	Girl	164	79.2
	Boy	43	20.8
Family type	Nuclear	167	80.7
	Extended	40	19.3
Residental area	Rural area	78	37.7
	City center	129	62.3
Income level	Low	64	30.9
	Middle	106	51.2
	High	37	17.9
Traditional bullying	Yes	21	10.1
	No	186	84.1
Traditional bullying victimization	Yes	52	25.1
	No	155	74.9
Cyberbullying	Yes	16	7.7
	No	191	92.3
Cybervictimization	Yes	33	15.9
	No	174	84.1

When, the traditional bully, traditional victim, cyberbully and cyber victims or non-victims were compared, no statistically significant difference was found between age, gender, family type, place of residence and income levels (Table 2).

Considering the scale scores of the participants, the depression scale and anxiety scale were significantly higher in those with having traditional bullying and APRS score, family support and school support scores were found to be significantly lower. Also, in traditional victims the depression scales and anxiety scales were significantly higher and APRS total scores, family support, peer support, school support and adjustment dimensions were significantly lower. In cyberbullies, the depression scales were high and APRS total score, family support, determination to struggle and empathy subscales were found to be low. Depression and anxiety scales were found to be higher in cyber victims compared to those who are not and their APRS total score, family support, adjustment dimension, and empathy subscales were found to be significantly lower. Data on scale scores are given in Table 3.

The effect of being a victim or a bully on depression, anxiety and APRS total scores were also analyzed by linear logistic regression analysis. In this analysis, it was determined that being a traditional victim is a potential risk factor for increasing depression and anxiety and decreasing in resilience (p=0.001, p=0.000, p=0.018, respectively).

Table 2. Comparison of demographic data.

	Traditional bullying		F	p	Traditional bullying victimization		F	p	Cyberbullying		F	p	Cybervictimization		F	p
	Yes	No			Yes	No			Yes	No			Yes	No		
Age (Mean±SD)	17.18±0.48	17.10±0.53	0.106	0.745	17.18±0.49	17.15±0.50	0.05	0.810	17.17±0.477	17.19±0.65	3.278	0.072	17.17±0.48	17.18±0.52	0.323	0.570
	n (%)	n (%)	X^2	p	n (%)	n (%)	X^2	p	n (%)	n (%)	X^2	p	n (%)	n (%)	X^2	p
Gender																
Girl	17 (10.4)	147 (89.6)	0.042	0.837	41 (25.0)	123 (75.0)	0.006	0.938	151 (92.1)	13 (7.9)	0.043	0.836	28 (17.1)	136 (82.9)	0.754	0.487
Boy	4 (9.3)	39 (90.7)			11 (25.6)	32 (74.4)			40 (93.0)	3 (7.0)			5 (11.6)	38 (88.4)		
Family type																
Nuclear	15 (9.0)	152 (91.0)	1.282	0.258	37 (22.2)	130 (77.8)	4.019	0.054	10 (6.0)	157 (94.0)	3.675	0.055	24 (14.4)	143 (85.6)	1.591	0.207
Extended	6 (15.0)	34 (85.0)			15 (37.5)	25 (62.5)			6 (15.0)	34 (85.0)			9 (22.5)	31 (77.5)		
Residental area																
Rural area	11 (14.1)	67 (85.9)	2.151	0.159	23 (29.5)	55 (70.5)	1.269	0.260	8 (10.3)	70 (89.7)	1.121	0.297	17 (21.8)	61 (78.2)	3.200	0.081
City center	10 (7.8)	119 (92.2)			29 (22.5)	100 (77.5)			8 (6.2)	121 (93.8)			16 (12.4)	113 (87.6)		
Family income																
Low	9 (14.1)	55 (85.9)	2.996	0.224	23 (35.9)	41 (64.1)	5.810	0.055	7 (10.9)	57 (89.1)	2.765	0.251	15 (23.4)	49 (76.6)	4.002	0.135
Middle	7 (6.6)	99 (93.4)			21 (19.8)	85 (80.2)			5 (4.7)	101 (95.3)			14 (13.2)	92 (86.8)		
High	5 (13.5)	32 (86.5)			8 (21.6)	29 (78.4)			4 (10.8)	33 (89.2)			4 (10.8)	33 (89.2)		

Results according to regression analysis are given in Table 4.

Discussion

In this study, it was aimed to examine the adolescents aged between 16 and 18 for; the rates of classical and cyber bullying and being exposed to bullying, examining the relationship between the roles in classical and cyberbullying and sociodemographic data and to determine the relationship between roles in classical/cyber bullying and resilience, anxiety and depression In this study, it was determined that 10.1% of the participants were involved in traditional bullying, 25.1% were exposed to traditional bullying, 7.7% to cyberbullying, and 15.9% were victims of cyberbullying. Previous studies on bullying, which is accepted as a worldwide problem, show that the prevalence of bullying is determined in a wide range between 9% and 98% between countries and studies [30]. This wide variation between studies is often explained by differences in the conceptual definition of bullying, the measurement approach and the sampling methodology [31]. In a UNESCO study on the global prevalence of bullying, nearly one in three (32%) children worldwide had been a victim of bullying for one or more days in the last previous month, and one in 13 children (7.3%) had been a victim of bullying for six or more days in the same period [32]. A meta-analysis of 80 studies reported a mean prevalence of 35% for traditional bullying (perpetuation and victimization) and 15% for cyberbullying involvement (perpetuation and victimization) among 12- to 18-year-old students [33]. The findings of our study support the literature data on the prevalence of traditional and cyberbullying and reveal that both traditional bullying and cyberbullying are observed at seriously high rates at the 12-18 age group. In some previous studies evaluating the sociodemographic risk factors associated with bullying, it is stated that higher rates of bullying are observed in boys and higher rates of being victimized in girls and low socioeconomic level and extended family structure may be risk factors for traditional peer bullying [34-37]. But there are also some studies showing that there is no difference between gender, and socioeconomic level, family type, and place of residence [38,39]. Also in our study, it has been determined that bullying and being victimized in terms of both traditional and cyberbullying were at similar rates between girls and boys. In addition, in this study, no significant relationship was found between traditional and cyberbullying and family type, place of residence and family income. These data support the data of relatively few studies in the literature [40-42]. However, the low number of male participants in

Table 3. Comparison of scale scores.

Scores	TB Mean±SD		F	p	TBV Mean±SD		F	p	CB Mean±SD		F	p	CV Mean±SD		F	p
	Yes	No			Yes	No			Yes	No			Yes	No		
DSM-5 Depression scale	42.5±8.3	35.4±12.7	4.111	0.014	43.0±9.8	33.8±12.5	3.234	0.000	42.4±8.1	35.6±12.6	3.186	0.038	42.3±8.8	35.0±12.8	6.159	0.002
DSM-5 Anxiety scale	34.3±11.5	27.0±10.7	0.401	0.004	34.2±11.6	25.5±9.9	1.152	0.000	31.3±9.1	27.4±11.1	1.391	0.174	33.8±11.5	26.6±10.6	0.744	0.000
APRS total	81.4±8.5	89.6±10.6	0.751	0.001	83.6±11.0	90.5±10.1	0.680	0.000	81.4±8.7	89.4±10.7	0.619	0.004	83.6±11.0	89.7±10.4	0.269	0.003
APRS family support	20.4±3.2	23.2±4.3	6.382	0.004	21.3±4.1	23.5±4.2	0.154	0.001	20.5±4.0	23.1±4.2	1.263	0.019	20.9±3.9	23.3±4.2	2.000	0.002
APRS peer support	12.7±2.2	13.7±2.4	1.571	0.089	12.8±2.6	13.8±2.2	0.466	0.012	13.0±2.5	13.6±2.3	0.058	0.345	13.1±2.4	13.7±2.3	0.009	0.205
APRS school support	11.5±3.0	13.7±2.4	2.679	0.021	12.5±3.5	13.8±4.1	0.947	0.012	11.8±3.9	13.6±4.0	0.133	0.095	12.8±3.4	13.6±41.	0.589	0.344
APRS adaptability	11.2±2.1	12.0±2.1	0.029	0.109	11.2±2.1	12.2±2.0	0.000	0.002	11.3±2.0	12.0±2.1	0.037	0.227	11.1±2.05	12.1±2.1	0.561	0.017
APRS struggle	12.7±1.7	13.3±2.3	5.273	0.219	12.8±2.1	13.4±2.3	2.680	0.085	12.1±1.2	13.4±2.3	6.142	0.045	12.9±1.7	13.3±2.4	5.970	0.322
APRS empathy	9.6±1.9	10.0±1.5	1.377	0.285	9.8±1.8	10.0±1.5	2.738	0.264	9.2±2.1	10.0±1.5	6.056	0.045	9.4±1.6	10.1±1.5	0.083	0.036

TB: Traditional bullying, TBV: Traditional bullying victimization, CB: Cyberbullying, CV: Cybervictimization, APRS: Adolescent Psychological Resilience Scale.

Table 4. Linear regression analysis for depression, anxiety, resilience total scores.

Total Scores	DSM-5 Depression scale			DSM-5 Anxiety scale			Adolescent Psychological Resilience scale		
	ß	95.0% CI	p	ß	95.0% CI	p	ß	95.0% CI	p
TB	0.621	-6.35-7.59	0.861	3.210	-2.86-9.28	0.299	-3.328	-9.35-2.70	0.278
TBV	7.970	3.39-12.54	0.001	7.257	3.27-11.23	0.000	-4.770	-8.72-0.81	0.018
CB	0.940	-6.70-8.58	0.809	-3.718	-10.37-2.94	0.272	-2.578	-9.18-4.03	0.443
CV	1.965	-3.54-7.47	0.861	2.919	-1.87-7.71	0.232	-1.279	-6.04-3.48	0.597

TB: Traditional bullying, TBV: Traditional bullying victimization, CB: Cyberbullying, CV: Cybervictimization, 95% CI: 95% confidence interval (lower-upper).

this study can be cited as the reason for the lack of significant gender differences in terms of peer bullying. In addition, this study is not a planned study to determine sociodemographic risk factors. Therefore, the sociodemographic data of this study should not be evaluated epidemiologically. In the study, sociodemographic data were considered because they may have an effect on the relationship between peer bullying and psychological resilience, anxiety and depression, which was the main target of our study. The insignificance of the relationship between sociodemographic data and traditional peer bullying and cyberbullying roles allowed the relationship between bullying roles and resilience, anxiety and depression to be evaluated independently of these sociodemographic factors. The results of this study showed that: the depression and anxiety scale scores of victims of traditional/cyber bullies or bullies were significantly higher and EPDS scores were significantly lower than those who did not play a role as a victim or bully. The independent effects of being a victim or a bully in traditional and/or cyberbullying on anxiety, depression scale scores and EPDS scores were evaluated with linear regression analysis, since the possibility of the participants in the study to be both victims and bullies and the possibility of participants in both traditional and cyberbullying cannot be ignored. The results of the analysis revealed that only being a victim of traditional bullying was associated with anxiety, depression scale scores and EPDS scores. According to these results, it can be thought that being exposed to traditional peer bullying may be a potential risk factor that causes anxiety and depression symptoms and reduces psychological resilience independently of other types of bullying. Although it was determined in this study that classical victimization was associated with depression and anxiety independently from

other groups (traditional bully, cyberbully and cyberbullying victim), we think that it is not appropriate to conclude that traditional bullying, cyberbullying and cyber victimization are not associated with depression and anxiety. Previous research on adolescents has shown that victims of both classical/cyber bullying have a significant risk of depression, anxiety, and suicidal ideation and suicide attempt [43]. Some researchers claimed that children who were repeatedly victimized were found to have increased vulnerability in their inferential styles producing distorted cognitive patterns, and that put them at higher risk for psychiatric problems [44]. In addition, researchers state that the relationship between bullying in children and adolescents and psychiatric problems such as anxiety and depression may be bidirectional, in other words, psychiatric problems such as anxiety and depression can also play a role in bullying and victimization. Previous longitudinal studies found that depressive symptoms could predict subsequent involvement in traditional and cyber bullying and victimization [45,46]. In addition, it is claimed that bullying and victimization behaviors may be related to some individual factors such as empathy skills, self-esteem, moral disengagement skills and resilience [47,48]. In this study, in addition to anxiety and depression, it was determined that being a victim of classical bullying was independently associated with decreased resilience. A limited number of studies also showed that those with low levels of resilience were more prone to bullying [16,49]. In a study examining the effects of cultural environments and individual characteristics on bullying and victimization in children in 2019, it was emphasized that resilience is an important protective factor for peer bullying and victimization [50]. Again, it has been shown in the literature that resilience is a protective factor against cyber victimization [51]. In this study, psychological resilience was found to be significantly low in both of victims and bullies for traditional/cyber bullying. However, in the analysis in which the independent relationship of the groups with resilience was evaluated -considering that any participant could be in more than one group- it was seen that only being exposed to classical peer bullying was associated with low resilience. As with all studies, this study also has some strengths and limitations. First of all, this study is one of the few studies that analyze the relationship between psychological resilience, anxiety and depression with traditional bullying and cyberbullying both as a bully and a victim. The limited number of male participants in the study, the fact that the study was carried out in a single center, the data obtained using self-report scales, and the cross-sectional study were the limitations of this study. Also, the fact that the participants could not be evaluated face-to-face is among the limitations of the study. Since our study was cross-sectional and was conducted in a single center, the results cannot be generalized.

Conclusion

As a result, in this study, it was concluded that traditional bullying victimization in adolescents between the ages of 12-18 has an independent relationship with depression, anxiety and psychological vulnerability. Bullying exposure predicts severe psychiatric morbidity in the already difficult adolescence Therefore, prevention of this situation should be a priority in preventive public health. In addition, clinicians working in this field should consider bullying in detail when questioning peer relationships in adolescents and should be aware of the harms of the situation on mental health.

Ethics approval

The study was approved by Inonu UniversityHealth Sciences Non-Invasive Clinical Research Ethics Committee (protocol number: 2021/2276).

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