

# Social media use in adolescent girls with depression: The relationship between social media use purposes, lack of social support, and cyber victimization

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## ABSTRACT

**Objective:** Our study examined the relationship between purpose of social media use, perceived social support, and cyberbullying among adolescent girls with or without major depressive disorder (MDD).

**Patients and Methods:** Fifty-two adolescent girls aged 13-18 years with a diagnosis of MDD were recruited. The control group consisted of 51 adolescents who were matched for age and gender. The adolescents completed a sociodemographic form, the Childhood Depression Inventory (CDI), the Social Media Attitude Scale (SMAS), the Cyberbullying Scale (CBS), and the Social Support Appraisal Scale for Children (SSAS).

**Results:** Social media use was significantly higher among adolescent girls with MDD ( $P<0.001$ ). They had significantly higher social isolation ( $P=0.006$ ) and cyberbullying scores ( $P=0.013$ ). They used more social media for social skills ( $P<0.001$ ) and their perceptions of social support levels were lower than adolescents without MDD ( $P<0.001$ ). Cyberbullying was inversely related to perceived social support ( $P=0.015$ ) and positively related to social media use for social competence ( $P=0.004$ ) (e.g., satisfying the need for esteem).

**Conclusion:** This study suggests that increases in social competence problems and decreases in perceived social support were associated with being a victim of cyberbullying. In depressed adolescents, cyberbullying can be prevented by interventions aimed at promoting social competence and obtaining sufficient support.

**Keywords:** Cyber victimization, Adolescents, Depression, Social media

## 1. INTRODUCTION

The ease and prevalence of internet access and the high popularity of social media platforms among adolescents provide a new form of interpersonal communication and a different social environment for adolescents [1]. Adolescents' purposes for using social media vary [2]. For instance, adolescents with social anxiety who are shy in face-to-face peer relationships and have difficulty expressing themselves can use social media to communicate more easily with their peers [3]. Depressed adolescents may use social media more because of low self-esteem [4]. Again, depressed adolescents can use social media to cope with their problems, express their depressive feelings, or find social support [5,6]

Unfortunately, social media platforms that adolescents use heavily are environments where bully-victim relationships are also common [7]. Cyberbullying is the name given to all acts of intentional, repetitive aggression through technological communication tools, the internet, and social media [8]. The

possibilities for adolescent bullies to hide their real identity on social media, to reach a large number of people in a short time, to interact with them, and to transmit any photo or message to millions per second make social media suitable for bullying [9]. Low self-esteem, excessive time spent on the internet, and playing games with others online are risk factors for cyber victimization [10]. Risky behaviors such as problematic use of social media, trying to communicate with strangers, and making friends also increase the risk of cyber victimization among adolescents [11]. The consequences of cyberbullying on adolescents' psychological health have been investigated in many studies. Cyber victimization is closely related to depression, suicidal thoughts, and anxiety [12,13]. In addition, cyber victimization was found to be associated with low self-esteem, loneliness, decreased academic achievement, and substance abuse [14-16]. Numerous studies have shown that being a cyber-victim can

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lead to depression and the presence of depression poses a risk of cyber victimization among adolescents [13,17].

Protective factors against cyberbullying are self-efficacy, low technology use, parental supervision and monitoring of technology use [18]. Studies examining the factors that prevent the development of depression in adolescents who have been cyberbullied have focused on perceived social support [19,20]. High perceived family support, open and warm communication with parents, high perceived friend support, and positive school climate showed a buffering effect against the development of depression from cyber victimization [18,19].

In light of the literature, we hypothesized that depressed adolescents would be more exposed to cyberbullying. In addition, we thought that the social media usage purposes of depressed adolescents might differ from those of non-depressed adolescents. Finally, we hypothesized that their social media usage purposes and perceived social support might be related to cyberbullying. For this purpose, we compared depressed and non-depressed adolescents regarding cyberbullying, social media usage purposes, and perceived social support.

## 2. PATIENTS and METHODS

### Participants

Between May and August 2018, adolescents who presented to our child psychiatric outpatient clinic and were diagnosed with major depressive disorder (MDD) during face-to-face interviews with the child and adolescent psychiatrist were enrolled in the study. Among 82 patients 18 were excluded from the study due to unwillingness for participation, presence of psychotic symptoms, substance use disorder, or neurological disease. In addition, 10 adolescents were excluded since they were not using social media. Exclusion criteria of the study were being older than 18 years of age, refusing to participate, presence of psychotic symptoms, substance use disorder, and neurological disease. Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS) was applied to 54 adolescents with MDD who consented to participate in the study. Fifty-two of the adolescents were girls, and 2 of them were boys. Male adolescents were excluded from the study for statistical purposes because the number of male MDD adolescents who applied to our clinic and could participate, needed to be higher and would not yield statistically significant results.

An application was made to the Istanbul Provincial Directorate of National Education to select the control group. As a result of the permission obtained, two high schools were selected. Eighty randomly selected adolescent girls and their families were informed about the study. After 20 adolescents and their families declined to participate in the study, K-SADS was applied to 60 age – and sex-matched adolescents. Because nine adolescents had MDD symptoms, they were not included in the control group. Fifty-one adolescent girls formed the control group. Face-to-face interviews were conducted with adolescents and their families separately. The interview took an average of 40 minutes to fill out the questionnaires.

### Measures

Parents completed the Sociodemographic Information Form. Adolescents completed the Social Media Attitude Scale [21], Cyber Bullying Scale [22], Depression Scale for Children [23], and Social Support Assessment Scale for Children and Adolescent [24,25]. The psychiatric diagnoses of adolescents were evaluated by applying the K-SADS and using clinical interviews for DSM-5 disorders. This study was approved by Marmara University, School of Medicine Research Ethics Committee on 04.05.2018 with protocol number 09.2018.342.

### Sociodemographic Information Form

Parents' age and education level, family income level, psychiatric family history, and children's developmental history were assessed. Socioeconomic Status (SES) was calculated based on both parents' educational level and family income level [26]. Additionally, the adolescents' age, school and class, the time spent on the internet per day, and the time spent on social media were collected.

### Child Depression Inventory

The Child Depression Inventory (CDI) was developed by Kovacs for children and adolescents aged 6-17 years [23]. The 27-item scale evaluates school status and relationships with friends concerning child and adolescent depression on a three-point scale. Validity and reliability in the Turkish population have been established [27]. The internal consistency coefficient of the scale is 0.77. The scale has a recommended cutoff point of 19.

### Social Media Attitude Scale

The Social Media Attitude Scale (SMAS) was developed by Otrar and Argın to evaluate the social media attitudes of young people between the ages of 13-18 [21]. The 23-item scale has the following subdimensions: sharing need, social competence (e.g., "I think I got rid of loneliness thanks to social media sites", "I use social media to make new friends", "I use social media to meet my esteem needs"), social isolation (e.g., "I cannot spare enough time for my family because of social media"), and relationship with teachers. High scores in the subdimensions indicate that social media is used to meet needs associated sharing, social competence, social isolation, and/or relationship with teachers. For reliability, Cronbach  $\alpha$  (0.85) coefficients were calculated for all four sub-dimensions and scales determined as a result of varimax rotation. Item-total and item-remainder correlations calculated by Pearson analysis were significant ( $P < .001$ ). As a result of the analyzes performed using the t test (27% lower and higher), it was determined that the items and factors were distinctive. In addition, it was determined that the correlations between the factors were significant with Pearson analysis ( $P < .001$ ).

### Social Support Appraisals Scale

The 31-item Social Support Appraisals Scale (SSAS) was developed by Dubow and Ulman based on Cobb's definition

of social support. It evaluates children's perceptions of the social support they receive from their friends, teachers, and families [24,25]. Ten new items related to support received from classmates and teachers have been added by Dubow [25]. Validity and reliability have been established in the Turkish population [28]. High scores in the subscales indicate definable social support for that subdimension. The Cronbach alpha internal consistency coefficient for the whole scale was found to be 0.93. The internal consistency coefficients obtained for the subdimensions of the scale were calculated as 0.89, 0.86 and 0.88 for the subdimensions of support from friends, support from family and support from teachers, respectively.

### Cyberbullying Scale

The Cyberbullying Scale was developed by Stewart et al., to measure cyberbullying behaviors [22]. The validity and reliability of the Turkish version were determined by Küçük [29]. Additionally, 14 items rated on a 5-point Likert scale measure cyber victimization among adolescents. The Cronbach Alpha value of the total internal consistency coefficient of the scale was calculated as 0.87. The scale measures cyber victimization. As the score obtained from the scale increases, it means that being a cyber victim increases.

### Statistical Analysis

Data were evaluated using the Statistical Package for the Social Sciences (SPSS – version 21). Descriptive statistics were shown as the mean (M) ± standard deviation (SD) or frequency (%). The chi-square test was used for categorical variables in the prevalence of psychiatric diagnoses determined by K-SADS in the study and control groups. The Fisher Exact test was used if the number was low. While comparing the sociodemographic characteristics of the study and control groups such as age, socioeconomic status, developmental history, data obtained as a result of interviews such as internet use, duration of social media use, Child Depression Inventory, social media attitude, social support, and cyberbullying questionnaires, the chi-square test was used for categorical variables, and multivariate analysis of variance (MANOVA) was applied for continuous variables. Linear regression analysis was used to analyze the variables associated with cyberbullying. We considered the following statistical characteristics when selecting the dependent variable for linear regression analysis: Firstly, the variable should be continuous. Since, the diagnosis of MDD is a categorical variable, we conducted linear regression analysis using the CDI. However, if we had considered the presence or absence of depression diagnosis, we could have used other regression models such as logistic regression or multiple regression. Secondly, dependent variables that exhibit a normal distribution are more likely to yield reliable results. Therefore, we initially assessed the distribution of the variables using the Kolmogorov-Smirnov Test to determine whether they followed a normal distribution. CDI scores, cyberbullying scores, subscale scores of the social media attitude scale, total score of the social support scale, and sub-scale scores were found to be normally distributed. These variables, which exhibited normal distribution, were included in the analysis. Prior to regression analysis, the linear relationship

of the variables was evaluated using correlation analysis. Only variables that showed a significant, linear relationship were selected. Additionally, it is important for the variance of the dependent variable to be homogeneous in order to obtain reliable results from regression analysis. To assess the homogeneity of variances, we applied the Tests of Homogeneity of Variances. The variables that met these conditions were included in the regression analysis. Linear regression analysis with the evaluated variables was applied with the forward method. The model with the most significant variables was accepted. In the regression model, the multicollinearity problem was checked in two ways. All predictor variables were checked for correlation to control using correlation coefficients, and only one of the two variables with coefficients of magnitudes of r is 0.8 or higher was used in the analysis. In addition, Variance Inflation Factor (VIF) values were checked. Those below 5.00 were included in the assessment. For all analyses, the significance level was accepted as  $P < 0.05$  and the corresponding 95% confidence intervals.

### 3. RESULTS

Table I shows the demographic data of the adolescent girls in the study and control groups, with a mean age of  $15.51 \pm 1.15$  years. There was no statistically significant difference between the groups in participant, maternal, and paternal age; social status; single-parent households; chronic diseases; or developmental delays ( $P > 0.05$ ). However, participants in the study group had a higher prevalence of psychiatric disorders in family members and low academic performance than those in the control group ( $P < 0.05$ , Table I).

Table I. Demographic findings of adolescent girls

	Depression (52)		Control (51)		t	P
	mean	SD	mean	SD		
Δ Age	15.54	1.18	15.49	1.13	0.25	0.80
Δ Maternal Age	42.00	4.23	42.19	4.40	-0.22	0.82
Δ Paternal Age	45.70	5.05	45.82	5.41	-0.11	0.90
Δ SES	7.84	1.90	8.52	0.98	-1.70	0.09
	n	%	n	%	X <sup>2</sup>	P
ΔΔ Single Parent	8	15.1	3	5.9	3.40	0.182
ΔΔΔ Psychiatric disorders of family members	16	30.8	6	11.8	5.52	0.019*
ΔΔ Low academic achievement	17	33.3	3	6	12.61	0.002**
ΔΔΔ Chronic illness	14	26.9	6	11.8	3.78	0.052
ΔΔΔ Developmental delay history	7	13.2	6	11.8	0.49	0.824

SES: Socioeconomic status, Δ is calculated by t-Test, ΔΔ is calculated by Fisher Exact Test, ΔΔΔ is calculated by Chi-square Test, P: \* $< 0.05$ , P: \*\* $< 0.01$

Table II shows psychiatric comorbidity in adolescents in both groups. Adolescents with depression had higher psychiatric comorbidity and anxiety disorder rates than adolescents in the control group ( $P < 0.05$ ). No significant difference was found for other psychiatric illnesses ( $P > 0.05$ , Table II).

**Table II.** Psychiatric comorbidities of adolescent girls

	Depression (52)		Control (51)		X2	P
	n	%	n	%		
ΔΔ Any psychiatric comorbidity	17	41.5	11	21.6	8.67	0.013*
Δ Anxiety Disorders	12	22.6	4	7.8	6.70	0.035*
Δ OCD	3	5.7	2	3.9	0.172	0.67
Δ ODD	3	5.7	1	2	0.96	0.32
Δ ADHD	3	5.7	4	7.8	2.97	0.24
Δ Eating Disorders	2	3.8	0	0	1.96	0.49
Δ PTSD	1	1.9	0	0	0.97	1.00

OCD: obsessive compulsive disorder, ODD: oppositional defiant disorder, ADHD: attention deficit hyperactivity disorder, PTSD: posttraumatic stress disorder, Δ is calculated by Fisher Exact Test, ΔΔ is calculated by Chi-square Test, P: \*<0.05.

Table III shows that internet and social media use was significantly higher in the study group than in the control group (P<0.05). However, the ratio of time spent on social media to total time spent on internet was similar in both groups (P>0.05, Table III). Internet use for informational purposes and social interaction was significantly higher in the control group (P<0.05, Table III). While, the percentage of girls with depression who intended to make new friends in social media was significantly higher (P<0.05, Table III), there was no significant difference between the two groups in communication with existing friends (P>0.05, Table III).

**Table III.** Evaluations of internet usage in adolescent girls

		Depression		Control		X2	P
		n	%	n	%		
Internet usage time	<1 hour	3	5.8	3	5.9	29.5	<0.001**
	1-3 hours	8	15.4	23	45.1		
	3-5 hours	15	28.8	23	45.1		
	>5 hours	26	50	2	3.9		
ΔΔ Internet usage purpose	Using the internet for information	18	34.6	28	54.9	4.28	0.038*
	Social sharing	36	69.2	47	92.2	8.64	0.003*
	Communication	22	42.3	28	54.9	1.63	0.201
	Entertainment	9	17.3	13	25.5	1.02	0.311
	Gaming	12	23.1	12	25.1	0.00	0.957
		Mean	SD	Mean	SD	t	P ΔΔΔ
Social media usage time		4.1	1.78	1.9	1.09	3.902	<0.001**
Social media ratio		0.74	0.23	0.67	0.19	3.902	0.118
Making new friends		3.71	1.24	2.98	1.28	-2.927	0.004**
Communicate with friends		1.92	1.09	1.87	1.07	0.264	0.792
Problem solving		3.14	1.37	3.33	1.40	0.682	0.497
Self-expression		3.22	1.32	2.63	1.43	2.146	0.034*
Social anxiety		3.62	1.24	3.57	1.46	0.201	0.841
Escape depressive feelings		2.50	1.27	2.08	1.34	1.649	0.102
Interest in depressive contents		3.72	1.29	2.60	1.40	4.199	<0.001**
Not sharing, only follow		3.08	1.32	3.30	1.37	0.836	0.405
Sharing depressive contents		4.08	1.08	3.23	1.41	3.401	0.001**

Social media ratio; social media usage time/internet usage time, Δ is calculated by Fisher Exact Test, ΔΔ is calculated by Chi-square Test, ΔΔΔ is calculated by t-Test, P: \*<0.05, P:\*\*<0.01

**Table IV.** Comparisons of scales scores between adolescent girls with and without MDD

	Depression		Control		Mean Square	F	P	Partial Eta Squared
	Mean	SD	Mean	SD				
CDI	28.55	5.66	9.10	3.22	9.453.433	431.134	<0.001**	0.813
SMAS-Social Competence	16.17	6.17	11.55	4.76	551.592	17.914	<0.001**	0.153
SMAS-Social Isolation	13.62	5.56	10.55	4.90	216.544	7.853	0.006**	0.073
SMAS-Sharing Needs	28.55	8.19	30.67	5.70	112.927	2.253	0.137	0.022
SMAS-Total	73.06	14.53	74.14	10.05	22.701	0.143	0.706	0.001
SSAS-Friends	64.96	13.83	82.04	7.33	7.364.693	59.510	<0.001**	0.375
SSAS-Family	40.15	11.15	53.29	6.64	4.440.787	51.558	<0.001**	0.342
SSAS-Teacher	33.59	8.23	38.24	5.76	546.329	10.793	0.001**	0.098
SSAS-Total	138.66	23.63	173.66	14.77	30.916.437	79.218	<0.001**	0.445
Cyberbullying Scale	23.85	7.97	19.84	7.23	380.701	6.405	0.013*	0.061

SSAS: Social Support Appraisals Scale, CDI: Children's Depression Inventory, SMAS: Social Media Attitude Scale, P calculated by MANOV, P: \*<0.05, P:\*\*<0.01

**Table V.** Linear Regression Analysis of Scales Scores with Cyberbullying Scale Scores in adolescent girls

	Dependent Variable	Standardized Coefficients B	t	P	95.0% Confidence Interval for B		Collinearity Statistics	
					Lower Bound	Upper Bound	Tolerance	VIF
Adolescents with MDD (52)	SMAS-Social competence	0.387	3.054	0.004**	0.173	0.840	0.994	1.006
	SSAS-Total	- 0.321	-2.533	0.015*	- 0.198	-0.023	0.994	1.006
All Adolescents (103)	SMAS-Social competence	0.415	4.498	<0.001**	0.306	0.790	0.815	1.228
	SSAS-Total	- 0.490	- 3.974	<0.001**	-0.221	- 0.074	0.457	2.189
	CDI	- 0.268	- 2.073	0.041*	- 0.386	-0.008	0.415	2.409

SSAS: Social Support Appraisals Scale, SMAS: Social Media Attitude Scale, VIF: Variance Inflation Factor, P calculated by Linear Regression Analysis, P: \*<0.05, P:\*\*<0.01



Table IV shows that as expected, depression symptoms were significantly higher in those diagnosed with depression (study group). Adolescents with depression were also significantly more likely to use social media to meet needs of social competence and reported significantly higher social isolation ( $P < 0.05$ , Table IV). However, no significant difference was found between the study and control groups in overall social media attitudes and sharing ( $P > 0.05$ , Table IV). There was no significant difference in the social media attitudes of both groups in the relationship with the teachers. The control group also reported significantly higher perceived support from family, friends, and teachers ( $P < 0.05$ , Table IV). Cyberbullying scores were found to be significantly higher in the depression group ( $P < 0.05$ , Table IV).

Finally, Table V presents the regression analyses. Linear regression analyses of cyberbullying scales with other scales in adolescents with MDD showed that higher cyberbullying scores were associated with social media use for social competence and lower overall social support ( $P < 0.05$ , Table V). Linear regression analyses of cyberbullying scales with other scales in adolescents with or without MDD showed that higher cyberbullying scores were associated with higher depressive scores in addition to social media use for social competence and lower general social support ( $P < 0.05$ , Table V).

#### 4. DISCUSSION

This study examined whether internet and social media usage time, social media using purposes; perceived social support from friends, family, and teachers; and cyberbullying scores differed between adolescents with MDD. In addition, this study aimed to evaluate whether existence of MDD, social media usage time, social media using purpose and social support deficiencies were significantly associated with cyber victimization.

The psychiatric diagnoses in the families of the adolescents with MDD in our study were significantly higher than in the families of other adolescents can be explained by their genetic predisposition [30]. The effect of depression on academic functioning and the decrease in the school success of depressed adolescents, as in our study, are consistent with other studies [31,32]. As in many studies, comorbid anxiety disorder was found more frequently in the depression group in our study [33,34]. In our study, while the time spent by adolescents with MDD on the internet and social media increased, the ratio of the two remained constant, indicating the increased time adolescents spent on other platforms besides social media. Therefore, the increased time spent on the internet besides social media may also be a new research topic. Some studies have found that the amount of time adolescents with depression spent on social media has increased [5,35], while others have found that depressed adolescents use social media as much as non-depressed adolescents [36,37]. Meta-analyses examining the relationship between the duration of social media use and depression found a significant but weak relationship. These meta-analyses referred to the heterogeneity of studies in this field [38,39]. A study examining the longitudinal relationship

between social media use and depression showed that depressive symptoms predicted small increases in social media use during adolescence [40].

Our study determined that adolescents without MDD use the internet more for information and social sharing than depressed ones. However, adolescents with MDD use social media more for making new friends, dealing and sharing with depressive feelings. In a study conducted in our country, the use of social media for sharing depressive feelings was found to be higher in depressed adolescents, similar to our study [5].

In our study, adolescents with MDD exhibited significantly higher social isolation and social competence needs than their healthy counterparts. The social isolation subscale shows that depressed adolescent girls are more socially isolated in their social relationships than healthy controls. They use social media to overcome this isolation. It is not surprising that, as depressed adolescents spend much more time online, their social isolation also increases through less time spent face-to-face with friends and family. Alternatively, depression symptoms may decrease preference for face-to-face interactions because social skills are inversely related to depression [41,42].

The social competence subscale of the Social Media Attitude Scale refers to adolescents' use of social media to overcome loneliness, make new friends, get noticed by their current friends, and gain prestige [21]. The close relationship between depression and loneliness could lead depressed adolescents to use social media to overcome loneliness [3,43]. Young people who are lonely or have low self-esteem may see social media as a way to build social relationships in a less demanding and perhaps less threatening social context [44]. Another study showed that depressed youth have more strangers on their friend lists than their healthy counterparts [45]. Consistent with the literature, our findings showed that adolescents with MDD who feel socially inadequate might use social media to meet their social needs.

Furthermore, we found that adolescents with MDD perceived less social support from their families, friends, and teachers than healthy controls, suggesting that depression was negatively related with social support perception. This is in line with findings that depression is inversely related to perceived social support [46].

Our study also showed that adolescents with MDD were more exposed to cyberbullying than those in the control group, consistent with previous studies on depression and cyberbullying among adolescents [47,48]. Research on the relationship between depression and cyberbullying emphasizes its bi-directionality, meaning depression may be a consequence of and a risk factor for cyberbullying [49,50]. It is difficult to explain why cyberbullies are more likely to target depressed youth on social media and are aware of their vulnerability in the virtual environment (at the other end of the screen).

The time spent on social media was not related to cyberbullying. In contrast to our findings, research has found an association between time spent on social media and victimization from cyberbullying [51,52]. In a large sample study that included

seven European countries, time spent on social media and cyber victimization were significantly associated [53]. Our contrasting results may be due to our small sample size.

Considering all adolescents with or without MDD, the current study found that overall low level of perceived social support from family, friends, and teachers and using social media for social skills (to overcome loneliness, make new friends, and satisfy the need for prestige) increased the risk of cyberbullying. Perceived social support from family and friends has been shown to be a protective factor against cyberbullying [54] and to buffer against depression when cyberbullying occurs [19]. Although, studies demonstrate the association between loneliness and cyber victimization [8,55], the factors mediating this association are unclear. Adolescents who use social media to overcome their loneliness, make new friends, and satisfy their need for respect may tend to trust people in the virtual environment more, be on the friend list of many people they do not know, and share more personal information with them, and eventually become victims of cyberbullying. Cyber victimization has been found to partially mediate the relationship between self-disclosure on social media and loneliness [56]. However, further studies are needed to examine these potential mediating factors. Through longitudinal studies, we will provide the necessary information to protect adolescents from cyberbullying by clarifying the mediating factors between adolescents' social media use goals and social media behaviors, and the likelihood of being a victim of cyberbullying.

### Strengths and Limitations

The important limitations of our study are the small sample size and the analysis of adolescents' social media attitudes – social media usage purposes – and cyber victims with data obtained from self-report scales. In addition, our study consisted of only adolescent girls and was conducted with adolescents in one province. These limitations reduce the generalizability of the findings of the study.

Despite our limitations, our study is valuable because diagnoses were established by face-to-face interviews. In addition, it draws attention to the risk of cyberbullying, primarily based on the social media attitudes – social media usage purposes – of depressed adolescents and those who lack social support. In depressed adolescents, exposure to cyberbullying can be prevented with interventions aimed at helping in social competence and perceived sufficient support from friends and family. Finally, as technology will continue to be an essential aspect of adolescents' lives, a better understanding of the relationship between cyberbullying and depression may promote well-being of developing youth.

### Conclusion

According to the findings of the study, adolescent girls with MDD tended to spend more time on social media, were more socially isolated and had less social competence than non-depressed adolescents. In addition, adolescents with MDD were more victims of cyberbullying than non-depressed adolescents. Depressed adolescent girls perceived less social

support from their families and friends. The increase in social inadequacy in adolescent girls with MDD and the decrease in their perceived social support were associated with being victims of cyberbullying. Therefore, as a preventive measure, while working with adolescents with depression, clinicians may implement strategies focusing on increasing the social support and the youth may be advised against using social media to compensate for their social inadequacy symptoms, pointing out the risk for possible cyberbullying.

### Compliance with the Ethical Standards

**Ethics Committee approval:** This study was approved by Marmara University, School of Medicine Research Ethics Committee on 04.05.2018 with protocol number 09.2018.342. Written informed consent was obtained from the participants.

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