



# Predicting Self-Criticism and Cyberbullying -Victimization Based on Mindfulness in Adolescents of Zanjan in 2022

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## Abstract

**Background and Objective:** Adolescence is a very sensitive period in terms of mental injuries. The assessment of important variables during this period plays a significant role in the prevention of mental injuries in adulthood. The present study aimed to predict self-criticism and cyber-bullying victimization based on mindfulness in adolescents.

**Materials and Methods:** This research was conducted based on a descriptive and correlational design. The statistical population of the study included adolescents aged 14-18 years old in the senior secondary school of Zanjan in the fall of 2022. The sample consisted of 380 youths who were selected from girls' and boys' senior secondary schools using the available sampling method. The research tools were Mindfulness Scale, the Self-criticism questionnaire, and Cyber-Bullying/Victimization Experiences Questionnaire. Finally, the data were analyzed in Spss software (version 26) using a correlation matrix and linear regression.

**Results:** The results of the data analysis indicated that the researcher's hypothesis was confirmed at the 0.95 confidence level. Mindfulness inversely predicted self-criticism ( $\beta = -0.365, P=0.000$ ), and mindfulness inversely predicted cyber-bullying victimization ( $\beta = -0.261, P=0.000$ ).

**Conclusions:** As evidenced by the obtained results, mindfulness was reversely correlated with reduced self-criticism and bullying of cyber victims in adolescents.

**Keywords:** Adolescents, Cyberbullying-victimization Mindfulness, Self-criticism

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## Background

Adolescence is an age of changes in various systems, and simultaneous changes in neurological, psycho-biological, and psychosocial systems make adolescence a period of extreme sensitivity to negative and positive experiences [1]. Health problems during adolescence can exert a marked impact on school performance, academic progress, and, as a result, future social participation, and most mental disorders start in adolescence; therefore, treating mental health problems in adolescence can have lifelong positive effects [2]. As it was mentioned, the risk of suffering from mental disturbance increases during adolescence, and elevated levels of self-criticism during this period are considered a risk factor for suffering from other mental disturbances [3]. Self-criticism is an automatic, negative evaluation of oneself, usually involving self-blame, anger, disgust, or even self-hatred [4]. Previous studies demonstrated that this

component is linked to many mental disorders, such as depressive disorder, eating disorder, borderline personality disorder, and self-injurious behaviors [4]. People with high levels of self-criticism are prone to experience depression, along with feelings of intense humiliation, guilt, worthlessness, and failure to live up to their high expected standards. They cannot enjoy achieving their goals due to their overemphasis on achieving them and rigid involvement in self-judgment [5]. New documents suggest that self-criticism is not unique to melancholia and can be considered a diagnostic risk factor. For example, self-criticism is also enhanced in social anxiety, post-traumatic stress disorder, and eating disorders [6]. Moreover, longitudinal designs confirmed the predictive value of self-criticism for the subsequent exacerbation of psychological trauma signs. This data propose that self-criticism can be related to the treatment of various

psychiatric problems [6]. In addition, due to the prominent presence of cyber and virtual spaces in our current life and the important role of these spaces in the life of teenagers, another variable that has been raised a lot in recent years is cyberbullying victimization, which has become a global concern regarding the public health of adolescents. The increase in the application of electronic instruments and the web is associated with an increase in cyberbullying [7, 8].

In the study by Anderson and Jiang (2018) at the Pew Research Center, 95% of adolescents owned or had access to a smartphone, and 45% of them stated that they are constantly online. One of the factors that have been investigated by Pew is that social media has affected their lives, and 27% of participants believed that social networks are responsible for bullying and establishing rumors [9,10]. Cyberbullying victimization, which is increasing at a high rate [11] and aims to harm people, has a repetitive nature and is defined by an inconsistency in vigor between the bully and the person being bullied [12]. Cyberbullying is an offensive and purposeful act performed by a committee or person using various shapes of electronic contact frequently and overtime against the victim that cannot easily protect him/herself, and the victim is the person who is being cyberbullied [11].

Cyberbullying is uniquely associated with physical problems (such as headaches and stomachaches) and depression. Suicidal thoughts and suicide attempts are symptoms of post-traumatic stress disorder (PTSD), associated academic problems, and psychiatric disorders [13]. The widespread use of the Internet and the adverse outcomes of cyberbullying on teenagers highlight the need to study this variable as much as possible [13]. There are different educational and therapeutic methods to treat the adverse effects of cyberbullying, one of which is mindfulness. Mindfulness is rooted in Eastern traditions, mainly Buddhist, and can be thought of as a special form of non-adjudication and intentional attention concentrated on the present moment [14].

Mindfulness offers several benefits, which appear to happen primarily through the overcome of attention content. [14]. In fact, a few studies have examined the direct relationship between mindfulness and self-deprecation; nonetheless, some recent studies have examined the effectiveness of mindfulness treatments in self-criticism [15]. Therefore, mindfulness can be used as an auxiliary treatment for adolescents with a wide range of physical and mental problems. Moreover, in recent years, studies have demonstrated that mindfulness and interventions based on

mindfulness can positively affect adolescents' mental health.

Although self-criticism and cyber-bullying-victim assume critical importance in adolescence, no research has directly examined the association of self-criticism and cyberbullying victimization with mindfulness in teenagers. Finding the relationship between these components and mindfulness, which is the goal of the current research, can be of great help in preventing and treating these disorders. In light of the aforementioned issues, the present study aimed to assess the relationship of self-criticism and cyberbullying victimization with mindfulness in teenagers.

### Objectives

The present study aimed to predict self-criticism and cyber-bullying victimization based on mindfulness in adolescents.

### Materials and Methods

This research was based on a descriptive and correlational design. The statistical population of the research included adolescents aged 14-18 years old in the senior secondary schools of Zanjan in the fall of 2022. The sample consisted of 380 youths who were selected from girls' and boys' senior secondary schools using the available sampling method. The inclusion criteria entailed the age range of 14-18 years, provision of consent forms, and willingness to participate in the study. On the other hand, the exclusion criterion was the presence of an acute physical and psychological illness. Consent was obtained from the participants to enter the study. Questionnaires were distributed in schools after obtaining the necessary permits from the Education Department of Zanjan province. Finally, the data were analyzed in SPSS software (version 26) using a correlation matrix and linear regression.

### Psychological Assessment

**Mindfulness scale:** This 15-item scale developed by Brown and Ryan (2003) is used to measure the level of awareness and attention to current events and experiences in daily life. Test questions measure the construct of mindfulness on a six-point Likert scale (from one for "almost always" to six for "almost never"). This scale gives an overall score for mindfulness, ranging from 15-90, with a higher score indicating higher levels of mindfulness. The internal consistency of the test questions was reported from 0.80-0.87 based on Cronbach's alpha coefficient. The test-retest coefficient of this scale has also been reported at a fixed interval of one month. Cronbach's alpha for the Persian version of

this scale was calculated at 0.81 for a sample of 723 students [16].

Self-criticism questionnaire of Thompson and Zaroff (2004): This questionnaire measures two levels of self-criticism in a person: the first is internalized self-criticism, and the second is comparative self-criticism. The self-criticism questionnaire is measured on a seven-point Likert scale, and the range of scores is from 22-154, with higher scores demonstrating a higher level of self-criticism. Cronbach's alpha coefficient for two subscales of comparative self-criticism and internal self-criticism were obtained at 0.78 and 0.84, respectively [17]. In Iran, the reliability of the Levels of Self-Criticism (LOSC) Scale was confirmed, rendering Cronbach's alpha coefficients of 0.87, 0.55, and 0.83 for internal and comparative self-criticism subscales and the total scale [18].

Cyber-Bullying/Victimization Experiences Questionnaire by Antoniadou et al.(2016): This 24-item questionnaire which is rated based on a Likert scale, measures cyberbullying victimization experience in students. Cronbach's alpha coefficient calculated for this questionnaire was estimated to be above 0.7. In this research, Cronbach's alpha value of the questionnaire was calculated at 0.94[19].

**Statistical Analysis**

In this research, descriptive statistics, including the central tendency indicators and the dispersion of the research variables, were used. Skewness and kurtosis were applied to evaluate normality, and in the inferential statistics section, the correlation matrices and linear regression were applied.

**Results**

Firstly, demographic variables were examined. In terms of gender, 195 subjects were male, and 185 cases were female. Moreover, 127, 171, and 82

subjects were from the first, second, and third years of secondary school. The mean age of the participants was reported as 16.10± 2.132 (age range: 14-18 years).

Table 1 displays the descriptive results of the research, along with the correlation matrix between the variables. To evaluate the normality, skewness, and kurtosis were used. As illustrated, since the skewness and kurtosis are outside of the standard deviation in the range of negative to positive, we conclude that the distribution of test scores was normal. The VIF (variance inflation factor) was used to check the co-linear, and since the VIF values were less than 5, we concluded that there were no co-linear relationships between the research variables. The Box plot was also used to check outlier data, and it was observed that there was no outlier data. Linear regression was used to check the first hypothesis, i.e., the prediction of self-criticism based on mindfulness (Table 1).

As demonstrated, the coefficients of determination of the model for cyberbullying victimization and the prediction model of self-criticism based on mindfulness are equal to 0.133 and 0.068, respectively. This means that 13.3% of alterations in the self-criticism variable are clarified and predicted by mindfulness in the model, and 6.8% of alternations in the cyber-bullying victimization variable are clarified and predicted by mindfulness in the model. According to the obtained result, this statistic (1.74 and 1.92) is in optimal condition (Table 2).

As depicted in Table 3, the variance analysis table related to the accuracy of the fitted model is provided, including the sum of squares, degree of freedom, average squared power, F statistic, significant value according to the F statistic, and the significant value (less than 0.05) of this model. It is correct, and the independent variable has a significant effect on the dependent variable (Table 3).

**Table 1.** Descriptive results and correlation matrix

variables	1	2	3	4	5	6	7
1.Mindfulness	1						
2.Internal criticism	-0.385**	1					
3.Comparative criticism	-0.291**	0.559**	1				
4-victim	-0.252**	0.180*	0.130*	1			
5. Bullying	-0.272**	0.134*	0.107*	0.686**	1		
6. General criticism	-0.365**	0.849**	0.412**	0.253**	0.183**	1	
7. Total victim bullying	-0.261**	0.179**	0.129**	0.915**	0.921**	0.237**	1
Mean	64.57	4.367	3.972	1.454	1.367	84.24	33.92
Standard deviation	13.44	1.25	0.76	0.67	0.69	18.50	15.97
Skewness	0.558	-0.329	-0.348	1.968	1.524	-0.005	1.898
kurtosis	0.523	0.117	1.242	1.983	1.988	-0.117	1.958

**Table 2.** Summary of the fit of the prediction model of cyber-bullying victimization and the prediction model of self-criticism based on mindfulness

Model	Correlation	Coefficient of determination	modulate Coefficient determination	Standard error of determination
2	-0.261**	0.68	0.65	14.594
1	-0.365**	0.133	0.131	17.322

**Table 3.** Variance analysis of predicting self-criticism and cyber-bullying victimization based on mindfulness

	Model	sum of squares	df	mean of squares	F	Sig
predicting self-criticism based on mindfulness	Regression	17402.732	1	17402.732	58.001	0/000
	Remaining	113414.995	378	300.040		
	Total sum	130817.726	379			
predicting cyber-bullying victim based on mindfulness	Regression	5869.622	1	5869.622	27.558	0.000
	Remaining	80511.683	378	212.994		
	Total sum	86381.305	379			

**Table 4.** Regression coefficients predicting self-criticism and cyber-bullying victimization based on mindfulness

variables	Mode	B	standard error	Beta	t	Sig
Regression coefficients predicting Self-criticism based on mindfulness	(Constant)	117.784	4.493	-	26.215	0.000
	Mindfulness	0.511	0,68	0.365	-7.616	0.000
Cyber-bullying victimization based on mindfulness	(Constant)	53.396 0/000	3.786	-	14.105	0,000
	Mindfulness	0.302	0,057	-0,261	-5.250	0.000

Based on Table 4, mindfulness is effective in self-criticism and the response variable in the model. As a result, this hypothesis is confirmed at the confidence level of 0.95. In addition, as demonstrated, mindfulness is effective in cyberbullying victimization and the response variable in the model. Consequently, this hypothesis is confirmed at the confidence level of 0.95 (Table 4).

### Discussion

The present descriptive and correlational research aimed to predict self-criticism and cyberbullying victimization based on mindfulness in teenagers. The results pointed out that there is a significant relationship between the above variables, and mindfulness can inversely predict self-criticism and cyberbullying victimization. In relation to the first hypothesis that predicts self-criticism based on mindfulness, the results indicated that the hypothesis is confirmed at the confidence level of 0.95, and mindfulness can inversely predict self-criticism. This finding is concordant with the results of other studies [20].

Ondrejková et al. (2020), who investigated the effectiveness of mindfulness therapy in self-criticism, reported that this therapy is effective in the reduction of self-criticism. This effect means that self-criticism decreases with an increase in mindfulness, pointing to a negative and significant relationship between self-criticism and mindfulness [21]. In another similar study, Johnson et al. (2018) investigated the effectiveness of mindfulness in self-criticism and confirmed the first hypothesis, the relationship between self-criticism and mindfulness, demonstrating the effectiveness of mindfulness therapy in the reduction of self-criticism and self-criticism [22]. This finding can be explained by Marsha Linehan's theory (1993) which, for the first time, emphasized the necessity of including mindfulness as one of the basic components of psychological treatments.

Mindfulness requires the development of the three

qualities of non-judgment, intentional awareness, and focusing on the present moment in one's attention, which results in the functioning of all shapes of prompt experience, consisting of cognitive, physiological, or behavioral functions. By practice and methods based on mindfulness, people arrive at a thorough understanding of their daily activities and involuntary functioning of the memory, as well as emotions and physical conditions. In so doing, they gains control over them and focuses on the past and the future [23].

Self-criticism, which is one of the negative cognitive aspects of people, is not excluded from this rule, and mindfulness can be effective in reducing self-criticism by connecting a person to the present moment and increasing awareness of cognitive and emotional levels. Another finding of the current research was the inverse prediction of cyberbullying victimization by mindfulness in teenagers, which was confirmed at the 0.95 confidence level of the researcher's assumption. This finding was consistent with other research results [24, 25]. For example, Emirtekin et al.(2020), in their study, which aimed to investigate the direct and indirect effect of childhood emotional abuse of cyber-bullying-victim through mindfulness and emotional intelligence traits, concluded that mindfulness is a partial mediator between cyber-bullying and emotional abuse in childhood. They added that apart from low mindfulness, there are other effective factors that explain the relationship of the second variable, and it can be concluded that mindfulness-based interventions in adolescents who were emotionally abused may reduce cyber-bullying-victimization [26]. Bullying behavior includes a wide range of destructive behaviors that regularly and over a period of time cause people to become victims in three ways: emotional, verbal, physical or psychological. Bullying is a deliberate, frequent, aggressive action carried out in an extreme manner and in which there is an inconsistency of vigor between the bully and the victim expressed by the

Internet and electrical instruments [27]. Now, according to the definition of the conscious mind expressed in Marsha Linehan's theory, one of the important effects of mindfulness is non-judgment and acceptance; if people accept others without judgment and unconditionally, it causes positive feelings. It creates true love and compassion, which prevents bullying and teasing others. Furthermore, with mindfulness exercises, we can teach teenagers to be aware of the automatic interpretation of their feelings in situations where they experience negative emotions, and this awareness prevents people from becoming victims [28].

### Limitations

Among the notable limitations of this study, we can refer to the restriction of the statistical population to the students of one region; moreover, the large number of questions in the questionnaires led to a longer implementation time, which did not affect the accuracy of the participants' answers. This research was conducted in Zanjan province; therefore, great caution should be exercised in generalizing the findings. It is suggested that according to the relationship between mindfulness and variables, future researchers investigate the effectiveness of mindfulness treatment in these variables in the adolescent community. It is suggested to use mindfulness programs for teenagers in schools.

### Conclusions

As evidenced by the results of this study, mindfulness inversely predicted self-criticism and cyberbullying victimization. Therefore, considering the importance of mindfulness in today's world and most interventions, it is suggested that the effect of mindfulness on related variables and areas be assessed. Furthermore, the effect of mindfulness should be examined in similar research in clinical and non-clinical populations.

### Compliance with ethical guidelines

In the present study, the necessary permits were obtained from the education and upbringing of the entire province of Zanjan. And the participants participated in the present study completely voluntarily.

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### Authors' contributions

The first author is the idea developer, the author of the article and the data collector, the data analyst, the second author is the project supervisor, the third author is the project consultant, and the second author has accepted all the responsibilities of the present project.

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### Conflicts of Interest

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