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The relationship of anxiety, stress, and depression with suicidal thoughts among female adolescents: The meditating role of victim of bullying

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Abstract

Introduction: Bullying is a form of low-level violence in the school environment that if unnoticed to become dangerous forms of violence occurs. The aim of this study was examining the relationship between anxiety, stress and depression and female adolescents' suicidal thoughts with the meditating role of the victim of bullying.

Materials and Methods: This study is descriptive and has used the correlation method. For this purpose in the academic year 2016-2017, 300 students of high school girl students (seventh and eighth grade) of public schools of Pakdasht city were selected by random cluster sampling method and they filled in the suicidal thoughts, anxiety, stress, depression and victim of bullying questionnaire. For data analysis, Pearson's correlation method and structural equation modeling were used by using SPSS-19 and LISREL V8.80 software.

Results: Pearson's correlational results showed that there is a positive and meaningful relation between anxiety, stress, depression and victim of bullying with suicidal thoughts ($P \leq 0.01$). Also the victim of bullying variable has a meditating role in relation among research variable and all of the direct and indirect effects of anxiety, stress, depression and victim of bullying on suicidal thoughts are meaningful.

Conclusion: The results indicate that anxiety, stress, depression along with victim of bullying in female adolescents cause suicidal thoughts therefore preventing and reducing the risk at schools is absolutely necessary.

Keywords: Anxiety, Depression, Stress, Suicidal thoughts, Victim of bullying

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Introduction

Maslow's hierarchy of needs suggests five needs where safety comes after the first need, which is physiological need. In an educational environment, students should feel safe and be free of intimidation at all stages of teaching and learning. The availability of a phenomenon, called bullying, in the educational environment can impose irreparable effects on the fundamental objectives of students' education and training. In connection with bullying behavior, those involved in education, schools, and parents can take effective steps to help the students victimized by bullying behaviors and, thereby, can prevent the occurrence of mental health problems and academic failure (1). Assessment of the prevalence of bullying behavior in adolescents has shown that rate of this behavior ranges from 15 to 70 percent in various sources (2). Bullying is a form of aggressive behavior wherein a person or a group of people repeatedly attacks others, beats others, or behaves aggressively towards the ones who are relatively weaker than they are (3). Victimization is a concept that is very closely related to bullying and always comes with bullying in the literature. Olweus (2010) asserts that a student may frequently commit bullying as a result of the pressure and negative activities of one or more other students or may be threatened and harassed as a victim of bullying behaviors. Olweus enumerates three typical criteria for bullying as follows: it is intentional, it is typically repeated over time, and there is a power imbalance between the victim and the bully (4).

Studies suggest that three distinct groups are involved in school violence: bullies, victims, and the individuals who are both bullies and victims (5). Each group has different characteristics; however, they have some features in common. Victims have a problem in terms of social adaptation, emotional relations, and interpersonal relations. Bullies are weak in externalized behaviors, such as alcohol consumption, substance abuse, and poor compatibility in school and they suffer both social-emotional problems and behavioral problems (5). Bullying behaviors are manifested in two different forms: physical

bullying (beating, pushing, kicking, and blocking somebody) and verbal bullying (teasing, threats, sarcasm, blackguard, rumors, and putting the name on others) (6).

Bullying begins in primary school and is aggravated in junior high school and in the first year of senior high school, but it will witness a descending order after the ninth grade (7). Bullies hold positive views on aggression and become more involved in aggressive behaviors compared to other students. Another important characteristic of such individuals is the arousal of a sense of the strong need to dominate others. Bullies hold a very low degree of empathy with their victims and often have a positive attitude towards themselves. Perpetrators of bullying are probably physically stronger than their victims. Some researchers believe that bullying people show increasingly anxious and insecure behavioral patterns (8). Bullying has both short-term and long-term effects on individuals and affects people's physical health. Stress, anxiety, and depression are among the most common psychological and emotional problems in adolescence and often affect individuals' cognitive and emotional functions. Khoshnevisan and Afrooz considered these three constructs as a proper criterion for the diagnosis of emotional disorders and defined these constructs on the basis of one's control over his/her surrounding environment. They believe that one may be put under stress when she/he cannot cope with an issue. In this case, the feeling of inability and persistence of threat orient him/her to helplessness and depression. In fact, the person feels that she/he has no control over his/her environment and is placed at risk. Research has shown that both bullies and victims have reported physical symptoms, such as headaches, upset stomach, and backaches (9). They also suffer from psychological symptoms, including depression, bad mood, anger, despair, and loneliness (10). Long-term effects, such as aggression, violence, drug abuse, and drunkenness have emerged in the behavioral patterns of such people (11).

Victims of bullying look more anxious and feel more insecure than normal students. They

are attacked by other students and their reaction to persecution and harassment is crying and isolationism. These victims suffer from low self-esteem and negative attitudes towards themselves and their situations. They feel stupid and embarrassed; and think they lack charm and are lonely and isolated in the school environment (8). The students who are faced with bullying peers at school experience extra stress, are involved with individual security, and are at risk of education and mental health problems (12). If bullying victimization is left untreated in students, it can lead to depression, stress, school dropout, and even suicide (13). In this regard, suicidal thoughts in adolescents are considered the major issue among mental health problems. Suicidal thoughts are defined as self-report thoughts about suicide within the range of a vague desire to die through the complete plan of suicide. These thoughts can range from a help-seeking cry into self-destructive behaviors for getting rid of unbearable and unavoidable tensions and incidents (14). After 1950, the world witnessed an increase in suicidal behaviors, including suicidal thoughts, suicide attempts, and self-harm behaviors, and successful suicides among adolescents and young people. In fact, the rate of suicidal behavior in 15-to-19-year-old adolescents tripled from 1950 to 1990. In recent years, suicidal behavior has been reported to be the cause of death in 8 to 15 percent of 12-to-

18-year-old adolescents and 18-to-40-year-old young adults with the second to the fifth rank (15). In some cases, victims of bullying feel socially ostracized or isolated as a result of suffering from low self-esteem, anxiety, stress, depression, and suicidal fantasies (16). Research has shown that both victimization and bullying are associated with psychosocial problems. Victimization, bullying, and bullying-victimization increase the level of depression, health problems, self-harm behavior, suicidal thoughts, and suicide attempts (17-19). Karch, Logan and McDaniel consider suicidal death among the adolescents involved in bullying as one of the thousands of effective factors in deaths. Half of the young suicide victims had problems at school; however, only 12.4% of these problems have been attributed to bullying at school (20). Considering the above-mentioned points and the increasing prevalence of bullying as a precursor to more serious school violence and the decrease of quality of life among teenagers, scholars of the field of education, especially school psychologists should seek preventive and interventionist solutions to tackle such issues by taking into account the characteristics of teenagers' lives. Accordingly, the current study aims to investigate the relationship of stress, anxiety, and depression with suicidal thoughts by the mediating role of victimization in female adolescents.

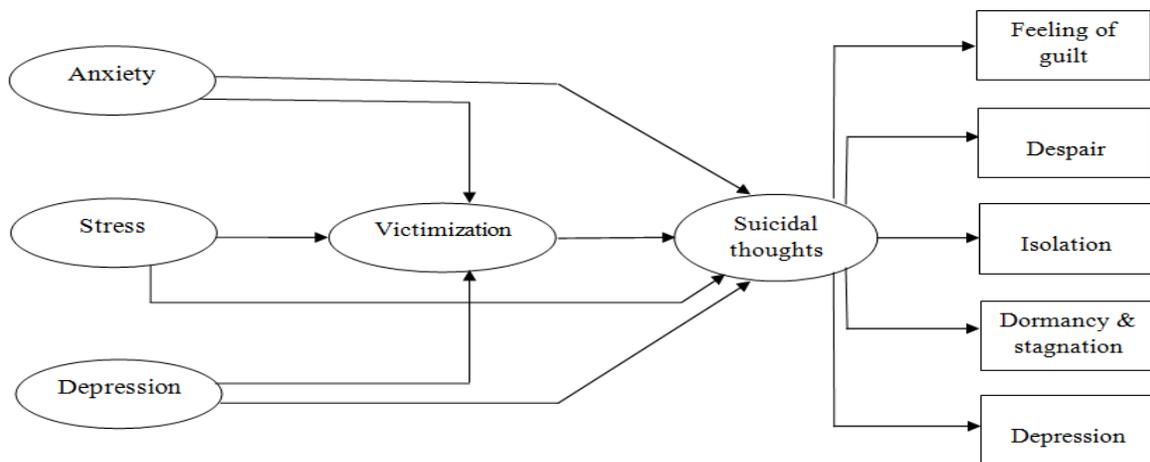


Figure 1. Conceptual model of the variables under study

Material and Method

A descriptive-correlational research design was employed for the conduct of this study. All the junior high school students (seventh and eighth grade) in public schools of Pakdasht city (amounted to 1300 students) in the academic year 2016-2017 constituted the population of the study. From among this population, the number of 300 female adolescents was selected through random cluster sampling method in accordance with Krejcie and Morgan sample size table. In terms of sampling, the number of four schools (three classrooms out of each school) was randomly selected.

The criteria for entering into this study were physical and mental health, education at the seventh and eighth grade of public schools. The number of four questionnaires was excluded from the analysis due to defects in responses given by the participants; therefore, 296 questionnaires (154 seventh graders and 142 eighth graders) were analyzed. The mean score and standard deviation of students' age in the control group were 13.82 ± 0.71 years. For data collection purposes, the following instruments were employed in this study.

Research Instrument

A) Suicide Ideation Scale (SIS): This scale contains 38 items and 5 subscales, namely feeling of guilt and self-destruction, despair and sense of humiliation, isolationism and lack of communication, stagnation and depression. The items of this scale are scored in reverse based on a 3-point Likert scale from never to always. This scale was developed by Mohammadifar, Habibi and Besharat (21) and was validated on a 457-student sample of Tehran University. Mohammadifar, Zarei Matehkalai, Najafi and Manteghi (22) reported the Cronbach's alpha coefficients for the 5 above-mentioned dimensions equal to 0.83, 0.84, 0.80, 0.73, and 0.72, respectively and obtained the coefficient of 0.93 for the total scale. They also obtained the test-retest reliability coefficients of the 5 above-mentioned subscales equal to 0.87, 0.85, 0.84, 0.81, and 0.82, respectively and calculated this coefficient equal to .89 for the total scale (22).

B) Illinois Bully Scale (IBS): This scale was constructed by Espelage and Holt (23). It consists

of 18 items and three factors, namely bullying, fighting, and victimization. In this study, the items related to victimization factor were used to measure victimization of students. This questionnaire is scored based on a 5-point Likert scale (never=0 to seven times or more=4).

The scores for each dimension and the total score are obtained from the sum of the scores of the relevant items. High scores on each subscale represent the higher occurrence of the pertaining behavior in the participants. Espelage and Holt (23) obtained Cronbach's alpha coefficient of 0.83 for the total scale and 0.87, 0.83, and 0.88 for bullying, fighting, and victimization, respectively. The scale was validated in Iran by Chalmeh (6) and Akbari Balootbangan and Talepasand (24).

Here, Chalmeh obtained Cronbach's alpha reliability coefficient of 0.79 for the total scale and the coefficients in the range of 0.68 to 0.77 for the subscales. In addition, Akbari Balootbangan and Talepasand reported the Cronbach's alpha coefficient of 0.87 for the total scale and 0.77, 0.71, and 0.76 for bullying, fighting, and victimization, respectively.

C) Depression, Anxiety, and Stress Scale (DASS): This scale was developed by Lovibond and Lovibond, 1995, cited in (25).

In fact, it is a 21-item self-report scale for the assessment of negative affective states in depression, anxiety, and stress. Each subscale consists of 7 items wherein the items numbered 3, 5, 10, 13, 16, 17, and 21 pertain to depression subscale; the items numbered 2, 4, 7, 9, 15, 19, and 20 belong to anxiety subscale; and the items numbered 1, 6, 8, 11, 12, 14, and 18 pertain to stress subscale.

The total score of each subscale is obtained through the sum of the scores of the pertinent items. Each item is scored from zero (it is not true at all in my case) to 3 (it is completely true in my case). The reliability and validity of this scale were examined in Iran by Samani and Jokar (26).

In this regard, the test-retest reliability coefficients for depression, anxiety, and stress were obtained equal to 0.80, 0.76, and 0.77, respectively. Similarly, Cronbach's alpha coefficients were reported equal to 0.81, 0.74, and 0.78 for depression, anxiety, and stress, respectively (26).

Results

In this study, Pearson’s correlation coefficient was used to investigate the relationship between

the variables. In the following, structural equation modeling (path analysis) was employed to investigate the mediating role of victimization.

Table 1. Correlation matrix of variables (n=296)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Stress	7.22	5.18	1									
2. Anxiety	6.23	5.03	0.73*	1								
3. Depression	6.46	5.38	0.78*	0.75*	1							
4. Victimization	2.40	3.18	0.43*	0.42*	0.45*	1						
5. Guilt	6.84	5.87	0.67*	0.67*	0.71*	0.38*	1					
6. Despair	9.38	7.07	0.69*	0.67*	0.75*	0.48*	0.79*	1				
7. Isolationism	6.64	4.66	0.74*	0.62*	0.73*	0.50*	0.70*	0.79*	1			
8. Stagnation	4.87	3.46	0.58*	0.57*	0.61*	0.34*	0.58*	0.67*	0.62*	1		
9. Depression	4.57	3.71	0.69*	.72*	0.72*	0.51*	0.78*	0.81*	0.77*	0.62*	1	
Total suicide	32.30	21.99	0.76*	.74*	0.80*	0.50*	0.89*	0.94*	0.88*	0.76*	0.90*	1

M = Mean; SD = Standard Deviation P ≤ *0.01

As it is observed in the above table, the relationships between all the components and variables are significantly positive at the significance level of .01. Other correlation results are presented in Table 1.

In addition to what was already mentioned, structural equation modeling was used by means of LISREL 8.80 software to examine the mediating role of victimization. Before the conduct of this analysis, the overall status of the data was examined. First, the assumptions of this test were investigated. Univariate outliers were assessed using Box Plot.

The results showed the presence of 6 univariate outliers which were replaced with the mean of the data. In addition, the values of kurtosis and skewedness were calculated and neither of them was obtained outside the range of -1 to +1.

It is necessary to examine measurement and structural models in structural equation modeling. After the conduct of all the preliminary analyses, the measurement model, which included the latent variable of suicidal ideation, was analyzed. In fact, this determined

the final model of the latent variables among the existing indicators and showed an adequate fit with the data. For the model estimation, maximum likelihood of Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Comparative Fit Index (CFI), Normed Fit Index (NFI), Goodness of Fit Index (GFI), and Adjusted Goodness of Fit Index (AGFI) were used. Different cut-off points have been proposed by experts for fit indexes. For example, a value equal to or smaller than .05 for RMSEA, a value equal to or larger than .96 for CFI and NFI, and a value equal to or smaller than .07 for SRMR represent desired fit indexes for the model (27). On the other hand, it has been proposed that if CFI, AGFI, and GFI are greater than .9; and RMSEA and SRMR are smaller than .05, they will be considered very desirable (28).

The fit indexes of the final research model are presented in Table 2. The findings show that some fit indexes indicate an optimal data-model fitness while some other indexes indicate a poor data-model fitness.

Table 2. Fit indexes of the final research model (n=296)

Model	*X ² /df	CFI	NFI	RMSEA	RMSEA CI 90%	SRMR	GFI	AGFI
Final model	3.85	0.99	0.99	0 .098	0.12 -0.074	0.022	0.95	0.88

* Chi-square via maximum likelihood method

According to the appropriateness of most of the fit indexes, the direct, indirect, and total effects of each variable will be presented (Table 3).

Table 3. Estimate of the direct, indirect, and total effects of the variables under study

Paths	Direct effects		Indirect effects		Total effects	
	Effect	t	Effect	t	Effect	t
To suicidal thoughts						
Anxiety	0.23	3.54	0.12	2.32	0.23	3.54
Stress	0.26	3.88	0.12	2.63	0.26	3.88
Depression	0.45	5.23	0.14	2.55	0.45	5.23
Victimization	0 .15	2.57	---	---	0.15	2.57
To victimization						
Anxiety	0.13	2.12	---	---	0.13	2.12
Stress	0.16	3.21	---	---	0.16	3.21
Depression	0 .23	4.11	---	---	0.23	4.11

After the investigation and intervention of victimization as a mediator variable, the model results indicate that anxiety (0.23) has had a direct effect on suicidal thoughts. Similarly, stress (0.26) and depression (0.45) have had a direct effect on suicidal thoughts. On the other hand, the results have shown that anxiety (0.13), stress (0.16), and depression (0.23) had a direct effect on victimization. In addition, the direct effect of suicidal ideation on victimization was assessed in this model, which was obtained equal to 0.15. Furthermore, the results of indirect effects also showed that

anxiety (0.12), stress (0.12), and depression (0.14) are indirectly associated with suicidal thoughts by the mediating role of victimization. It is noteworthy that all t values were greater than ± 1.96, which shows that all direct and indirect path coefficients are significant. Finally, it is possible to claim that anxiety, stress, and depression are significantly associated with suicidal thoughts by the mediating role of victimization as per the information provided in the above table. The final research model is presented below.

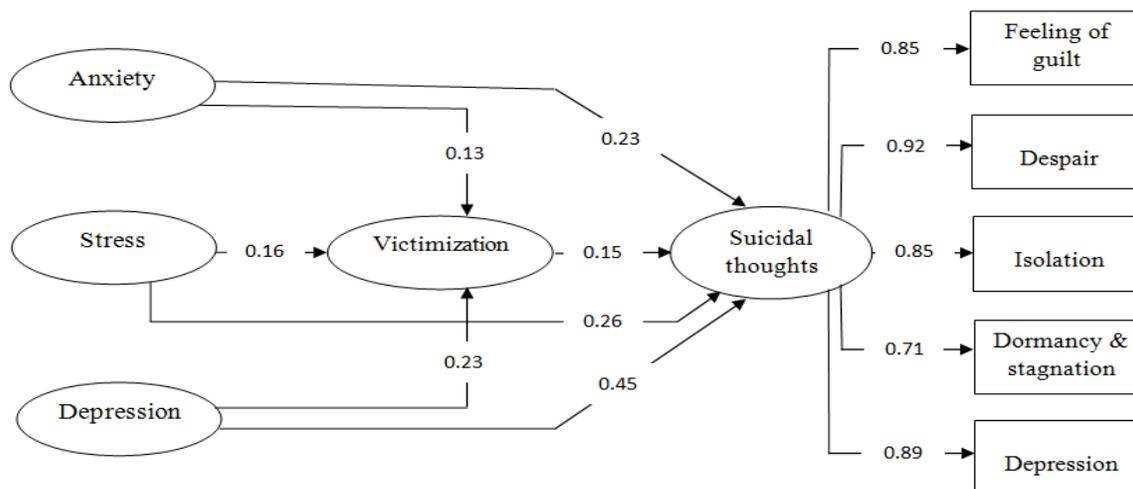


Figure 2. The final model of the research variables

Discussion

Violence in life put people's convenience and safety at risk; therefore, one of the most basic human needs is not met in violent environments. The need for security is one of the basic psychological needs that makes a major contribution to the growth and health of people. Security in schools is also one of the most serious requirements. The type of students' relationships with other students, teachers, and school officials can be considered either helpful for meeting these needs or detrimental. A student who is bullying suffers from this problem and needs help and s/he may think that s/he has complete control over what happens there; therefore, s/he learns to behave violently towards others. On the other hand, the victimized students spend their energy on these fears and concerns on how and when they may be attacked by bullying again. They may begin to withdraw from the activities and attending the locations wherein bullying occurs. They may avoid going to school and, in the worst, they may become ill and depressed and may even attempt suicide (29).

However, suicide is the second cause of death among teenagers aged from 13 to 17 years. Moreover, 6.3% of the students of this age group have made at least one suicide attempt and 13.3% of them have been reported to have suicidal ideation (30). In this regard, the present study was conducted to examine the relationship of stress, anxiety, and depression with suicidal ideation in female adolescents by the mediating role of victimization. The findings of the study showed that anxiety (0.23), stress (0.26), and depression (0.45) had a direct effect on suicidal thoughts after the investigation and intervention of victimization as a mediator variable. This finding is consistent with those of the studies done by (16,31). McNeil and Newell's results (16) showed that bullying victims feel socially ostracized or isolated; therefore, they

experience low self-esteem and high levels of anxiety, stress, depression, and suicidal ideation.

Among the bullies, victims, and victim-bullies, self-harm background is associated with emotional distress (feelings of sadness, hopelessness, anxiety, stress) and these factors seriously increase suicidal thoughts in adolescents (31). Another finding of this study suggests that anxiety (0.13), stress (0.16), and depression (0.23) had a direct effect on victimization. This finding is consistent with that of study (32). Fekkes, Pijpers and Fredriks (32) found that victims of bullying are prone to higher risk of psychosomatic and psychosocial problems during the school years although students with symptoms of depression and anxiety during school years constituted the most populated victimized group.

In addition, the direct effect of suicidal ideation on victimization was assessed in this model, which was obtained equal to 0.15. Furthermore, the results of indirect effects also showed that anxiety (0.12), stress (0.12), and depression (0.14) are indirectly associated with suicidal thoughts by the mediating role of victimization. This result is consistent with the finding of the studies conducted by (16,33-35). Skapinakis et al. (34) found that the behaviors demonstrated by victims of bullying are more likely to ooze suicidal thoughts. In the same way, the results of Klomek's research (33) showed that the frequency of such behaviors in female victims is interrelated with suicidal thoughts and successful suicides.

Espelage and Holt (35) found that 60% of bullying victims had suicidal thoughts in the past 6 months and 43% of bullying victims tried to deliberately harm themselves. In addition, McNeil and Newell (16) showed that bullying victims feel socially ostracized or isolated. For this reason, they experience low self-esteem, anxiety, stress, depression, and suicidal ideation. To account for this finding, one can conclude that victims of bullying are prone to higher risk of psychosomatic and psychosocial problems during the school years. Victimization, bullying, and bullying-victimization lead to increased levels of

depression, health problems, self-harm behaviors, suicidal thoughts, and suicide attempts. Like any other scientific research, this study suffered from some limitations; for example, the findings of the study were obtained from the data collected through self-report questionnaires and the population of the study was limited to the female students of junior hash schools in Pakdasht city. Therefore, it is important to consider this point in the generalization of the results to other groups. Hence, the conduct of similar research among male populations and different educational programs is necessary. In addition, the employment of various instruments, such as observation, interview, and grading of students' behavior will increase the reliability of results. Most of the investigations on the relationship between bullying and suicide have been conducted based on cross-sectional studies. There is the possibility of examining the relationship between bullying and information about the adolescents' past status as the determinants of suicide in longitudinal studies.

Hence, it is suggested that the relationship of stress, anxiety, and depression with suicidal ideation be examined in adolescent girls by the mediating role of victim of bullying in the form of a longitudinal study. In this way, a better generalizability of the findings is ensured.

Conclusion

In addition, it is recommended that training on the phenomenon of bullying be done at schools to enhance the awareness of teachers, parents, and other school officials since this phenomenon occurs in all the school situations and even in contexts outside the school. Moreover, parents should be trained how to help their children in this regard. For this reason, family members should receive necessary training in this field in order to create lasting changes in the identification of behavioral patterns of bullying victims.

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