

The Effectiveness of Assertiveness Training on the Levels of Stress, Anxiety, and Depression of High School Students

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Abstract

Background: Adolescence is a transition period from childhood to early adulthood. Because of the immense pressure imposed on adolescents due to the complications and ambiguities of this transition, their level of excitement increases and sometimes it appears in the form of sensitivity and intense excitement.

Objectives: This study aimed at determining the effectiveness of assertiveness training on the levels of stress, anxiety, and depression of high school students.

Materials and Methods: This quasi-experimental study was conducted on high school students of Isfahan in academic year 2012 - 13. A total of 126 second grade high school students were collected according to simple random sampling method and divided into two groups: experimental with 63 participants and control with the same number. Data gathering instruments included a demographic questionnaire, Gambill-Richey assertiveness scale, and depression anxiety stress scales (DASS-21). Assertiveness training was carried out on the experimental group in 8 sessions; after 8 weeks, posttest was carried out on both groups. Statistical tests such as independent t test, repeated measures ANOVA, Chi-square test, and the Mann-Whitney test were used to interpret and analyze the data.

Results: The Chi-square and Mann-Whitney tests did not show significant statistical differences between the two groups in terms of demographic variables ($P \geq 0.05$). Repeated measures ANOVA showed no significant difference between the mean scores for assertiveness before (100.23 ± 7.37), immediately after (101.57 ± 16.06), and 2 months after (100.77 ± 12.50) the intervention in the control group. However, the same test found a significant difference between the mean score for assertiveness in the experimental group before (101.6 ± 9.1), immediately after (96.47 ± 10.84), and 2 months after (95.41 ± 8.37) implementing the training program ($P = 0.002$). The independent t test showed no significant difference in the mean score for anxiety and stress between two groups before the assertiveness training program; however, 2 months after the intervention, the mean score for anxiety in the experimental group was found significantly lower than the control group. As for the mean score for depression, the independent t test showed no significant difference between two groups before training; however, despite the decrease in the mean scores for depression in the experimental group following the intervention, the difference was not significant ($P = 0.09$).

Conclusions: The results of the current study show that conducting assertive training in high school students decreases their anxiety, stress, and depression. Given that high school years are among the most sensitive stages of one's life plus the fact that conducting such training programs besides their safe and low cost nature are effective and practical, it is highly recommended that such programs be carried out among high school adolescents.

Keywords: Assertiveness, Stress, Anxiety, Depression, Student

1. Background

The adolescent age ranges from 11 to 21 years. Early adolescence begins with the onset of puberty, which usually coincides with high school years. Adolescence is the time of change for adolescents and their families and is a transition period from childhood to adulthood. During this transition period, changes in the physical, cognitive, emotional, and sexual characteristics may excite and even scare adolescents (1). Adolescence is characterized as a period of emotional, social, and cognitive develop-

ment. According to Ahmadi et al. studies', adolescence is a period of internal turmoil and inner revolution. In this period, adolescents are stuck between childhood and adulthood and under the pressure and expectations of this complicated and ambiguous situation. The feeling of excitement grows during puberty and sometimes takes the form of sensitivity and intense excitement (2). Irritability, depression, anxiety, and aggression are common features associated with adolescence (3). Adolescents

comprise one-fifth of the world population (1.5 billion); 85% of this population reside in developing countries (4). According to 2006 census in Iran, 21.9% of the population which is approximately 15 million people are 10 to 19 year olds (5). Dysfunctional social relations lead to stress, anxiety and depression in adolescents; the failure to establish and maintain constructive relationships with others is one of the problems that limits the efficiency in adolescents and prevents them from developing a healthy character, developing their talents as well as their mental and emotional growth (6).

A study by Meadus aimed at determining the state of depression, anxiety, and chronic stress in adolescents found that the mentioned factors have a significant association with adolescents' socialization, social networking, and academic achievement (7). Portzky and van Heeringen showed that teaching self-awareness, communication, decision making, and problem solving skills to male high school adolescents was effective on their depression levels after merely a week (8). Depression is a state of low mood characterized by typical depressive symptoms (according to ICD-10 criteria), loss of interests or pleasure, fatigue or low energy lasting for at least 2 weeks, low self-confidence, guilt or self-blame, suicidal thoughts or acts, poor concentration and indecisiveness, agitation or slowing of movements, disturbed sleep and poor or increased appetite (9).

Anxiety and stress have an important association with students' learning (7). Stress is the body's negative reaction to immense pressure or any other force imposed on an individual (10). Stress is an individuals' inappropriate response to immense pressure (10). Gyllensten and Palmer (2003) suggested a cognitive definition for stress that highlights the understanding of an individual in respect to an event: "stress is a negative mood that is caused when the pressure imposed on an individual is more than he or she can tolerate" (11).

Anxiety is an unpleasant and incorrect feeling that emanates from fear of the future and is often accompanied by physiological symptoms. Fear is also a global phenomenon that can show the outer symptoms of anxiety but in contrast to anxiety, the reasons behind fear are clear and understandable (12). Anxiety is an experience that is seen in an individual's behavior, his or her physiological responses, and mental-subjective reports. Having fear, panic, and intense awareness towards an unclear source of danger are some of the symptoms of anxiety.

Individual responses to an unexpected event may vary from mild to severe anxiety. In mild cases, individuals are alert and see their surrounding environment more than their abilities. In moderate anxiety, an individual shows indifference towards stimuli that are outside the field of anxiety selectively. Learning can take place in this stage of anxiety. However, when an individual experiences intense anxiety or fear, there is little understanding of stimuli and learning will never happen unless anxiety reduces.

Normal anxiety is common in the average population. In fact, humans cannot be creative and productive without anxiety and this anxiety is proportional to the threats, making an individual conscious towards the subject. However, pathological anxiety is not proportional to threat and can cripple an individual's life. Estimates suggest that 3% of the human population suffer from this kind of anxiety (13). Anxiety and stress accompanied with depression have been reported in 30% to 75% of pre-adolescent children and in 25% to 50% of adolescents (14). Noble et al. (15) states that 10% to 20% of school-aged children show symptoms of social withdrawal, anxiety, stress, isolation, high sensitivity and depression. The world health organization (WHO) also predicts that by 2020, depression will be one of the main causes of disability. Reports show that approximately 9% of adolescents experience a period of depression in their lives. Besides, adolescents who experience this period are more likely to get depressed in later stages of their lives (15).

Unassertive behaviors are obstacles that have a high and positive correlation with fears, worries, social anxieties, and various internal aggressions (15). An assertive person can create a close relationship with others, prevent others from abusing her or him and express a wide range of positive and negative thoughts and needs without feeling guilty, stressful, anxious, and violating the rights of others.

The assertiveness training program is a structured intervention technique that is used to boost the effectiveness of social relationships (16). Lin (17) believed that assertiveness improves equality in human relations, enables individuals to act according to their interests, helps them stand up to their desires without feeling anxious, allows them to express their sincere feelings and encourages them to fight for their personal rights without violating the right of others.

The assertiveness training program aims to help individuals change their self-image, easily express themselves, express their thoughts and ideas appropriately and consequently increase their self-esteem. This training program can be used for people of all ages and from different walks of life (18). Training the assertiveness program is a life skill that builds self-confidence, improves social communication skills, teaches to exercise your rights whilst respecting the rights of others and ultimately increases the amount of life satisfaction and happiness one experiences in life (17). For instance, a study by Forneris (18) indicates that teaching assertiveness techniques like problem solving skills to adolescents will enable them to solve their problems, categorize their priorities and make better use of supporting systems in the society. Neglecting one's personal rights and being uncertain in different interactions, causes physical and mental diseases in humans and damages social relations. Many misconduct and wrongdoings witnessed in different age groups, specifically in adoles-

cents stems from their inability to say “no” at the right time. Training assertiveness skills to individuals is a behavioral approach that has become common in modern life and is specifically beneficial for those who have interpersonal problems (17). Anxiety, stress, and depression lead to many psychological, physical, and social problems in adolescents.

2. Objectives

Considering the importance of adolescence, the current research aimed to study the effectiveness of assertiveness training on anxiety, stress, and depression in female students in governmental high schools of Isfahan in academic year 2012 - 13.

3. Materials and Methods

3.1. Participants

This quasi-experimental intervention study aimed to evaluate the effect of assertiveness training program on students' anxiety and depression in Isfahan City, Iran in 2013. The subjects were female students in Isfahan governmental high schools in academic year 2012 - 13. The simple random sampling method was used to choose 10 out of the 5 educational districts of Isfahan and then 2 schools and grade 2 of classes were chosen. The sample size and with a 95% confidence level and 80% power factor was calculated by the following formula:

$$(1) \quad n = 2 \times (z_1 + z_2)^2 \times \frac{s^2}{d^2}$$

Where z_1 : 95% = 1.96; z_2 : 80% = 0.84; s : d: 23 effect size = 0.5

From the total number of 180 students, 126 eligible subjects who volunteered to participate were randomly assigned into two experimental and control groups (Figure 1). Students' consent was sought prior to the study.

3.2. Tools

A demographic questionnaire, Gambrill-Richey assertiveness inventory and the depression anxiety stress scales (DASS-21) questionnaire was used in this study (19).

Gambrill-Richey assertiveness inventory (1975) is a 40-item self-report scale for assessing assertiveness. It measures how uncomfortable a person feels in specific social situations and how likely it is that the person reacts assertively in those situations. Based on the achieved score, the assertiveness and discomfort a person experiences are assessed. A lower score in each section indicates less discomfort and higher assertiveness. In this questionnaire, the participant is asked to express the degree of his or her discomfort in a situation that requires him or her to act assertively on a 5-point scale. The total points earned ranges from 40 to 200; a lower score shows higher assertiveness and vice

versa. Liaghatdar et al. (20) approved the reliability and validity of Gambrill-Richey assertiveness inventory in a comparative study entitled “Effectiveness of lecturing teaching method and group-discussion teaching on students' educational achievements and communicative skills.” In addition, Rabiei et al. (21), (2012) in their research found the scientific validity coefficient of the test at 0.7 to 0.39. Moreover, the reliability coefficient of the assertiveness test was assessed to be 0.81 by Gambrill and Richey.

Mohebi et al. in a study entitled “The effect of assertiveness training on student's academic anxiety” also assessed the reliability coefficient of this test with the retest method (19).

DASS-21 is a standard self-report 4-point Likert-type measure of 3 dimensions of mental health: depression, anxiety, and stress. Questions 17, 16, 13, 10, 5, 3, and 21 assess depression; questions 20, 19, 15, 9, 7, 4, and 2 assess anxiety; and questions 18, 14, 12, 11, 8, 6, and 2 assess the stress rate (22). These scores range from 0, i.e., the client believes the item “does not apply to him or her at all”, to 3 i.e., the client considered that the item “applies to him or her very much, or most of the time”. Validity and reliability of DASS checklist were approved by study of Rabiei et al. (2012) in Iran (21). Turner et al. (2003) similarly used DASS-21 questionnaire in their study (16). In this study, the levels of depression, anxiety, and stress were measured before the intervention and after the training sessions.

3.3. Intervention Methods

After randomly selecting and dividing students into treatment and control groups, the control group got the business-as-usual conditions; they only received interventions that they would have gotten if they had not participated in the study. The experimental group received the intervention (the assertiveness training program) for 3 months. The main objective of this program was to enable students to improve their assertiveness skills (through decreasing levels of stress, anxiety, and depression). The researcher gave the following instructions to the experimental group within eight 45-minute sessions.

First session: Introducing group members to each other and stating the objectives of the research; explaining the assertiveness program and its importance in daily life; assigning homework that reminds students of common assertiveness scenarios, their assertiveness challenges, and reactions.

Second session: Reviewing the previous session homework and providing feedback to the students; discussing the individuals' rights and familiarizing students with their own rights (for example, the right to express or not express themselves, to express their beliefs, opinions, and views to knowledge, etc.); orientating students to new situations and presenting them the appropriate response to those situations.

Third session: Reviewing the homework assignment from the previous session and providing feedback; discussing different ways to express oneself and alternative behavior patterns (e.g., discussing different types of behavior and particular ways of coping with change); assigning homework that help students recognize assertive and unassertive behavior (aggressive and passive).

Fourth session: Giving a report of the previous session's homework and providing feedback; defining anger and discussing its negative consequences; describing some symptoms of latent anger; assigning students with tasks that help them preserve peace and control anger in different situations.

Fifth session: Reviewing the homework assignment from the previous session and providing students with feedback. Discussing the benefits of anger (i.e., unloading stress, letting go of feelings, and achieving goals); presenting anger management skills and ways to express their anger; assigning students with tasks that assist them deal with anger.

Sixth session: Reviewing the homework assignment from the previous session and providing students with feedback; discussing requests and the ability to say "yes" and "no"; the inability of saying "yes" and "no"; assigning homework for the next session's discussion.

Seventh session: Reviewing the homework assignment from the previous session and providing feedback; talking about criticism; discussing appropriate and effective reactions to criticism, how to deal with criticism, harms and benefits of criticism; assigning students with tasks of dealing with criticism.

Eighth session: Reviewing the homework assignment from the previous session and providing students with feedback; reviewing the subjects presented in previous sessions; emphasizing on freedom of expression, asking for something, saying "yes" and "no," dealing with anger and dealing with criticism.

3.4. Statistical Analysis

Data obtained before and after the intervention from both groups were analyzed using descriptive and inferential statistics (Chi-square tests, Mann-Whitney, t test, and repeated measures ANOVA), by SPSS software version 17 at $P < 0.05$ significance level. Kolmogorov-Smirnov test determined whether the data were normally distributed ($P = 0.9$) and also homogeneity of variances with $P = 0.21$ was determined. Nonparametric statistics were used to describe qualitative sociodemographic characteristics of participants. Repeated measures analysis of variance and t test were used to compute the mean scores and compare the studies' variables before and after the intervention.

3.5. Ethical Consideration

Ethics approval was obtained from vice-chancellor for research in Isfahan university of medical sciences

(research project No: 290216). The students in the intervention group were intimated with details of the study, asked to read and sign a consent form, and assured of the confidentiality. Participation to study was voluntary; students were given the opportunity to leave the study if they become uncomfortable. The control group was given the opportunity to participate in the assertiveness program after the study was completed.

4. Results

The Chi-square and Mann-Whitney tests did not show significant statistical differences between the two experimental and control groups in terms of demographic variables ($P \geq 0.05$). The demographic information that was gathered from study subjects is presented in Table 1.

In this study, 2.49% of the students had a moderate level of depression whilst after the training this amount reduced to 36.5%; however, despite its importance, it is not considered significant (Table 2). The reported assertiveness prior to training was high (22.2%) and moderate (77.8%). After the training program, 42.9% of the subjects achieved high assertiveness scores while 57.1% of them gained moderate assertiveness scores (Table 2).

Before training, 71.4% of the students had a normal amount of stress. Following the educational intervention, the number increased and 90.5% of students had normal stress levels. Moreover, most of the students had high amounts of anxiety (49.2%). After the intervention, only 11.1% of students were found to experience anxiety. This study also found that students with high-income families experienced more stress and anxiety while students with low-income families were affected by depression more than the others.

The t-test showed that before the intervention, the students' mean assertiveness score did not significantly differ in the two groups ($P = 0.41$), but immediately after the intervention ($P = 0.03$) and 2 months later ($P = 0.005$), the mean assertiveness score in the experimental group was significantly higher than the control group. Repeated measures ANOVA with consideration of post hoc Bonferroni test showed that there was no significant change in the mean assertiveness score in the control group at different times (before, immediately after, and 3 months following the intervention) ($P = 0.81$). However, the test showed significant changes in the mean assertiveness score in the experimental group at different times ($P = 0.002$) (Table 3).

The Independent t-test showed that the mean stress scores of the experimental and control groups were not significantly different from each other before the intervention ($P = 0.93$), but immediately after the intervention and 2 months later, the mean stress score in the experimental group was significantly higher than the control group ($P = 0.001$) (Table 2). In addition, based on the repeated measures ANOVA and consideration of post hoc Bonferroni test, the mean stress score in the control

group did not vary at different times ($P = 0.29$). While the same test showed significant changes in the mean stress score in the experimental group at different times ($P = 0.002$) (Table 4).

Additionally, the independent t-test indicated that there was no significant difference between the mean anxiety scores of experimental and control groups before the intervention ($P = 0.91$). However, immediately after the assertiveness training program ($P = 0.002$) and 2 months later ($P < 0.001$), the mean anxiety score in the experimental group rose significantly higher than the control group (Table 4). Repeated measures ANOVA with consideration of post hoc Bonferroni test did not show a significant difference in the mean anxiety scores of the control group at different times ($P = 0.76$). However, the same test displayed a significant difference in the mean

anxiety scores in the experimental group at different times ($P < 0.001$) (Table 4).

As for the mean depression score, the independent t-test found no significant differences between the two groups before the intervention ($P = 0.56$). However, after the training program, despite the reduction observed in the mean depression score in the experimental group, the difference was not considered significant ($P = 0.09$). The mean depression score increased from its normal rate of 17.5% to 20.6% (Table 5). Also repeated measures ANOVA with consideration of post hoc Bonferroni test showed that the mean depression score in the control group at different times did not change significantly ($P = 0.37$). The test did not indicate any significant change in the mean depression score in the experimental group immediately after the intervention and 2 months later ($P < 0.063$) (Table 5).

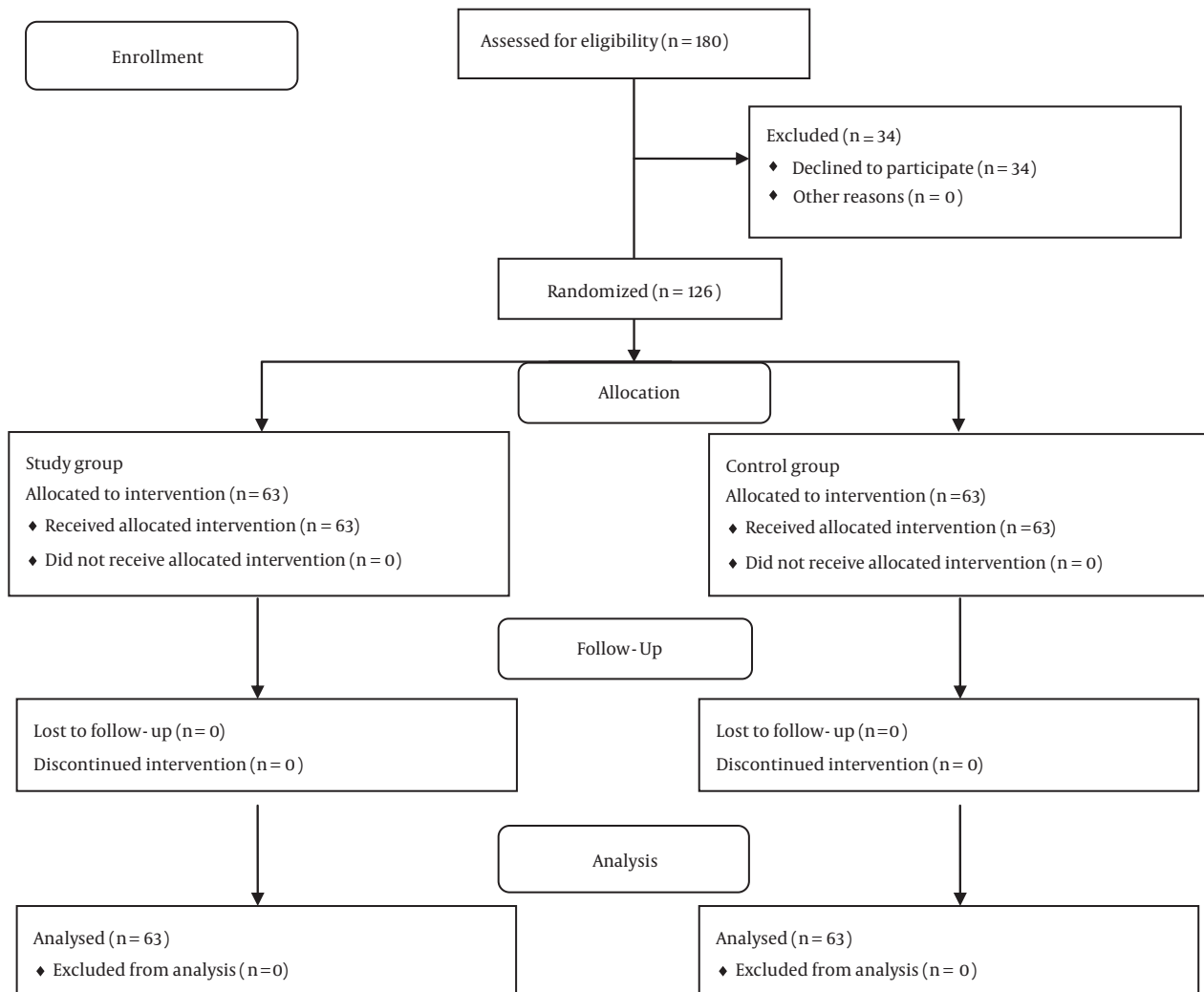


Figure 1. The Flow Chart of the Study

Table 1. Comparison of Frequency and the Percentage of Demographic Characteristics Between Students of Experimental and Control Groups (n = 66)^a

Variable	Group		P Value
	Experimental (n = 63)	Control (n = 63)	
Age, y	16.25 ± 6.43	16.41 ± 7.61	.91
Number of family members			.61
3	11 (17.2)	9 (15.2)	
4	30 (48.4)	34 (53)	
5	18 (28.1)	20 (31.8)	
6	4 (6.3)	0	
Father's education			.73
Primary	3 (4.7)	0	
Under-diploma	3 (4.7)	8 (13.6)	
Diploma	35 (56.2)	33 (53)	
Collegiate	22 (34.4)	22 (34.4)	
Father's jobs			.72
Unemployed	2 (3.1)	1 (1.5)	
Worker	3 (4.7)	2 (3.1)	
Employee	36 (57.2)	32 (50)	
Unemployed	22 (34.4)	28 (46.4)	
Mother's Education			.47
Under-diploma	22 (41.2)	24 (42.6)	
Diploma	28 (47.4)	31 (50.4)	
Collegiate	13 (11.4)	8 (7.2)	
Mother's jobs			.63
Employee	15 (19)	13 (18.2)	
Unemployed	12 (13.2)	10 (12.4)	
Housekeeper	36 (66.6)	40 (68.6)	
Financial status			.37
Good	11 (13.2)	9 (12.6)	
Moderate	39 (68.6)	41 (69.2)	
Poor	13 (18.2)	13 (18.2)	

^aData are presented as mean ± SD or No. (%).

Table 2. The Frequency Distribution of the Assertiveness Score in the Experimental and Control Groups Prior to the Intervention and 2 months After it

Frequency Distribution of Assertiveness Score	Experimental Group		Control Group	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
High (less than 25%)	14 (22.2)	27 (42.9)	14 (22.2)	17 (27)
Moderate (25% to 80%)	49 (77.8)	36 (57.1)	49 (77.8)	46 (73)
Low (more than 80%)	0	0	0	0
Total	63 (100)	63 (100)	63 (100)	63 (100)

Table 3. Students' Mean Assertiveness Scores at Different Times

Time	Experimental Group (n = 63)	Control Group (n = 63)	P Value ^a
Pre-intervention	101.6 ± 9.1	100.23 ± 7.37	.41
Immediately after intervention	96.47 ± 10.84	101.57 ± 16.06	.03
Twomonths after intervention	95.41 ± 8.37	100.77 ± 12.50	.005
P Value ^b	.002	.81	

^aIndependent t test.^bRepeated measures ANOVA.**Table 4.** Students' Mean Scores of Stress, Anxiety, and Depression in the Experimental and Control Groups Before and After the Assertiveness Intervention Program

Variables/Time	Experimental Group	Control Group	P Value ^a
Stress			
Pre-intervention	13.2 ± 2.76	13.25 ± 2.37	.93
Post-intervention	11.73 ± 3.65	13.38 ± 2.28	NA
Two months after intervention	11.11 ± 2.59	12.73 ± 2.71	.001
P Value ^b	0.002	0.29	
Anxiety			
Pre-intervention	14.22 ± 2.53	14.8 ± 2.61	.91
Post-intervention	11.6 ± 4.9	13.92 ± 2.55	.02
Two months after intervention	14.01 ± 2.47	10.77 ± 2.89	.001
P Value ^b	0.001	0.76	
Depression			
Pre-intervention	13.23 ± 3.05	13.53 ± 2.54	.56
Post-intervention	12.25 ± 2.38	13.01 ± 2.31	.3
Two months after Intervention	12.25 ± 3.09	13.08 ± 2.02	.09
P Value ^b	0.063	0.37	

Abbreviation: NA, not available.

^aIndependent t-test.^bRepeated measures ANOVA.**Table 5.** Frequency of Stress, Anxiety, and Depression in the Experimental and Control Groups Prior to the Intervention and 2 Months After^a

Variables	Experimental Group		Control Group	
	Pre-intervention	Post-intervention	Pre-intervention	Post-intervention
Stress Frequency				
Natural	45 (71.4)	57 (90.5)	47 (74.6)	45 (71.4)
Mild	15 (23.8)	6 (9.5)	15 (23.8)	17 (27)
Moderate	3 (4.8)	0	1 (1.6)	1 (1.6)
Severe	0	0	0	0
Extreme	0	0	0	0
Anxiety Frequency				
Natural	0	9 (14.3)	0	0
Mild	2 (3.2)	12 (19)	1 (1.6)	11 (17.5)
Moderate	29 (46)	35 (55.6)	36 (57.1)	42 (66.7)
Severe	31 (42.9)	7 (11.1)	24 (38.1)	9 (14.3)
Extreme	1 (1.6)	0	2 (3.2)	0
Depression Frequency				
Natural	11 (17.5)	13 (20.6)	5 (7.9)	3 (4.8)
Mild	21 (33.3)	27 (42.9)	24 (38.1)	30 (47.6)
Moderate	31 (49.2)	23 (36.5)	34 (54)	30 (47.6)
Severe	0	0	0	0
Extreme	0	0	0	0

^aData are presented as No. (%).

5. Discussion

The results showed that the assertiveness training program largely reduces students' stress, anxiety, and depression. The program helps students manage and solve their problems and difficulties. Ansary et al. (23) studied 200 randomly selected students and found that the level of depression and anxiety in female students is higher than male students. They found that there is a positive correlation between the students' scientific achievements and their anxiety. Also there was a negative correlation between their scientific achievements and depression. The current research is in line with Portzky et al. study (8), who found that female students with higher average scores showed more anxiety compared to their peers.

Since high school students face challenges associated with their age such as puberty and taking part in the university entrance exam, they experience more stress and anxiety compared to others. Thus, paying attention to this issue in this age group is significant and experts should take into account the difficulties associated with this period in designing educational programs. Lin et al. (17) examined 68 patients; 28 in the experimental group and 40 in the control group. The treatment group took part in an assertiveness program twice a week (2 hours each session), in a span of 4 weeks. The data collected from the experiment and control groups were analyzed through the assertiveness, social anxiety, and self-confidence questionnaire. The results indicated that assertiveness level of the experiment group had increased immediately after and 1 month following the intervention. However, even though the social anxiety score of the patients decreased immediately after the intervention, the value of decrease after 1 month was not significant which alters from the findings of the current report. Evidently, mentally-ill patients have deep-rooted and subconscious problems that may not be solved through programs like assertiveness training. In contrast to the problems of mentally-ill patients, the problems and issues related to adolescents have less depth and severity and thus they can be controlled and managed to a great extent (17). The findings of the current study show that the anxiety score of students reduced significantly after the intervention; this result is in compliance with the findings of a study conducted by Egan et al. (24). Therefore, it can be argued that the students participating in this research had low self-confidence levels and by means of the assertiveness program their self-confidence was developed leading to a reduction in their anxiety levels. The result of Eyberg's study (25) on high school teenagers concerning the effectiveness of assertiveness training on the anxiety experienced in the control and experimental groups indicated that like the control group, the experiment group did not show any difference in the amount of anxiety experienced. These results differ from the results of the current study. It seems that the reason behind the similarity of results in both the control and experiment groups (as

stated in Eyberg's study (25)) goes back to the insufficient 3-week time devoted to training, poor training provided by the researcher, and inappropriate monitoring over the control and experimental groups as well as their relationship with each other. Besides, the age of participants in this research was less than other studies. The time allocated to the program plus perseverance in presenting the program must be taken into account in this age group. Obviously running long-term programs can increase the effectiveness and efficiency of the program. The researcher's purpose in this study was not only carrying out the training course but to perform necessary follow-ups to ensure the efficiency of the program. Thus, after two months of consistent training, the efficiency of the intervention on the amount of stress, anxiety and depression among adolescents is noteworthy. It is recommended that in this age period, longer programs with more control and consistency be planned to ensure higher efficiency. As previously mentioned, the aim of this study was to assess the effectiveness of assertiveness training on reducing inappropriate emotional reactions of female adolescents. The results of our study correspond with the results of many other studies in terms of inappropriate emotional reactions such as stress and anxiety. For instance a study by Elias et al. (26) showed that training assertiveness enhances individual's adaptability to stress and helps him or her deal with obstacles and problems in a better way. Forneris (18) also found that training assertiveness skills such as problem solving skills to adolescents enables them to solve their problems on their own, prioritize their goals and make better use of supporting systems in the society. Also, Wehmeier et al. (1) discovered that through teaching problem solving skills to adolescents, their amount of stress reduces; besides, the thoughts and attempts to commit suicide at times of stressful situations decreases significantly.

de Vente et al. (27) selected individuals that were exposed to extremely stressful situations and taught them problem solving skills, social skills, and stress management. She found that these skills lead to a significant reduction in the amount of stress, higher assertiveness, and fewer help requests from others. Britton et al. (28) in a study showed that teaching stress management and control decreases the amount of stress and anxiety in adolescents' experience. Yen et al. (29) in their study entitled "Relation between behavioral model with depression and suicide thinking in adolescence" also quoted Clarke and Lewinsohn (30) that training assertiveness (problem-solving techniques, communicative skills, social skills, anger, and excitement management) is effective on depression. However, this correlation was not found within the sample subjects examined in this research and within the time span that this study was conducted. What may justify the dissimilarities of the findings of this study with other studies are factors such

as differences in the research sample's age group, the short interval between the posttest and the intervention, different assessment tools or the intensity of emotional reactions in the samples studied. It is worth mentioning that adolescents usually experience anxiety alongside depression. Meadus (7) stated that anxiety was the most common disorder that went together with depression in adolescents. In addition, researchers and scientists believe that too much stress and anxiety can gradually drive individuals into depression. Lee et al. (31) said that there were plenty of documents verifying anxiety as a precursor to sadness and a predictor of later depression among individuals. Grant stated that there was a lot of empirical evidence indicative of correlation between children and teenagers' stressful life events and depression. Individuals who have been exposed to stress are more likely to get depression in contrast to individuals who have not. Besides, stress can increase depression among adolescents and stress management can help prevent depression to a great extent. Thus, based on the mentioned results, the hypothesis of the effectiveness of the assertiveness program on the amount of stress, anxiety, and depression in female high school students is proved and observations showed that the implementation of this program reduces stress, anxiety, and depression.

Two limitations should be acknowledged and addressed regarding the present study. The first limitation concerns the age group and gender of the study sample. They were all female high school students. Therefore, it is recommended that this study be conducted on other age groups, on males, and on the effectiveness of other features such as self-efficacy, self-confidence, and so on. The second limitation has to do with generalization of the findings. After all, the study was conducted in an urban society. Therefore, we suggest the program to be implemented in rural areas too.

The results of the current study showed that the assertiveness training program reduces stress, anxiety, and depression among high school students. As high school period is one of the most sensitive ages of an individual's life, implementing these low cost and safe programs among high school adolescents help them control their stress, anxiety, and depression.

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Footnotes

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