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The Effectiveness of Assertiveness Skills Training on Self-concept and Interpersonal Relations of Male High school Students in Khoshab City

Fatemeh Bahrami 

Assistant Professor, PhD of Educational Psychology, Department of Education Science, Hakim Sabzevari University, Sabzevar, Iran, F.bahrami@hsu.ac.ir

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ABSTRACT

Objective: The objective of this study was to examine the effect of assertiveness skills training on the self-concept and interpersonal relationships of male high school students.

Methods: This study employed a quasi-experimental design using a pretest-posttest format with a control group. The statistical population consisted of male high school students in Khushab City during the 2015–2016 academic year. A sample of 40 students was selected through cluster random sampling and randomly assigned to an experimental group ($n = 20$) and a control group ($n = 20$). The experimental group received assertiveness skills training over eight sessions lasting 60–90 minutes each during a period of one and a half months, while the control group received no training. Data were collected using the Self-Concept Questionnaire (SCQ) and the Interpersonal Relationships Questionnaire developed by Manjamizadeh. The data were analyzed using descriptive statistics and analysis of covariance (ANCOVA) with SPSS software.

Results: The findings indicated that the experimental group showed significantly higher scores in self-concept and interpersonal relationships compared with the control group. In addition, the posttest scores of the experimental group demonstrated significant improvement compared to their pretest scores.

Conclusions: The results suggest that assertiveness skills training has a positive effect on improving students' self-concept and interpersonal relationships. Therefore, incorporating assertiveness training programs in educational settings may contribute to the psychological and social development of students.

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Introduction

In most regular classrooms, there are students who cannot compete academically with their peers and consequently experience failure at the end of the academic year. This group of students, often referred to as slow learners, generally experience difficulties in learning academic materials and solving problems compared with their peers of the same age due to relatively slower cognitive development. However, the intelligence quotient (IQ) of these students is generally considered to fall within the normal range according to many researchers and clinical experts (Zainudin, Ashari, & Kosnin, 2019). Therefore, slow learners are typically educated in regular schools alongside their age peers. These students usually have an IQ ranging between 75 and 85, which indicates that they may require additional educational support to succeed and continue their education within mainstream classrooms.

The concept of slow learning does not imply that these students are incapable of learning. Rather, many of them face challenges such as limited social skills and low motivation. In many cases, the educational services provided in regular classrooms are not sufficiently adapted to meet their needs. Consequently, modifications in instructional practices and classroom environments are necessary to support their academic success (Du Plessis, 2021). Academic success is attainable for all students, and promoting the academic achievement of students—especially those from lower socioeconomic backgrounds—requires attention to both individual factors and family functioning (Seyyedmoharrami et al., 2024).

One of the most important psychological constructs influencing students' academic and social development is self-concept. Self-concept refers to an individual's perception and evaluation of their own characteristics, including their strengths and weaknesses. Although certain personal traits are influenced by hereditary and biological factors, individuals also develop their self-perceptions through interactions with their environment and relationships with others. However, due to a lack of awareness or supportive interactions, these external influences may not always contribute positively to an individual's understanding of themselves (Rajabzadeh, 2009).

Self-concept can therefore be defined as an individual's perception of themselves shaped by experiences and social interactions. It is closely related to factors such as life satisfaction, self-esteem, and self-worth, and represents a set of attitudes that individuals hold about their own abilities and behaviors (Dunn et al., 2019). From a contemporary perspective, self-concept is

viewed as a cognitive schema (Campbell et al., 1996). In other words, it is a mental structure that organizes a person's perceptions, feelings, and attitudes about themselves (Woolfolk, 1993). More specifically, self-concept can be understood as an organized knowledge structure that includes attributes, evaluations, and autobiographical memories about oneself and guides the processing of self-related information (Kiel Sturm et al., 1998).

Self-concept develops throughout the lifespan, but it is particularly shaped during adolescence, a period that plays a crucial role in forming the foundation of an individual's mental health (Askari et al., 2016). Within the educational context, academic self-concept gradually develops during the early years of schooling, and over time students form either positive or negative perceptions of their academic abilities (Yarmohannadi, Gandi, & Maghani, 2013). Academic self-concept refers to students' perceptions of their competence and limitations in academic learning, and it plays a significant role in understanding their learning processes, academic development, and success in school (Marsh, 2015). Research has shown that self-concept, executive functions, and working memory can predict academic performance (Taei & Zare Neyestanak, 2022). Students with higher academic self-concept tend to view themselves as more capable and confident in performing academic tasks, which can lead to greater academic growth and fewer negative emotions. In this regard, academic self-concept has been shown to be a strong predictor of students' success in school (Prince & Nurius, 2014).

Another important factor influencing students' adjustment and success is effective communication. Effective communication plays a crucial role in students' academic and social lives and contributes significantly to their psychological well-being (Hashemi, 2007). It refers to interactions in which individuals are able to express their needs and achieve their goals while maintaining mutual satisfaction within the relationship (Vazifemand, 2011). Prominent psychologists such as Erich Fromm, Karen Horney, and Harry Stack Sullivan emphasized that the inability to communicate effectively is one of the major causes of psychological distress and behavioral disorders. Similar to how some individuals experience anxiety due to a lack of specific abilities, many people experience emotional difficulties because they lack the skills necessary for effective interpersonal communication. Consequently, learning the principles of effective communication is essential for maintaining mental health (Hashemi, 2007).

One of the key components of effective communication is assertiveness. Individuals who lack assertiveness skills—positioned between passive and aggressive behavior—often struggle to defend their rights and express their needs. As a result, they may become passive, hesitant, and overly influenced by the opinions and demands of others (Vazifemand, 2011). Research has shown that assertiveness training can improve self-expression, self-esteem, and interpersonal relationships, while also reducing communication difficulties and social anxiety (Kiel Sturm et al., 1998).

Developing assertiveness and self-expression skills is therefore essential for students. These skills enable individuals to respond effectively to life challenges, seek social support, and engage in meaningful social interactions that contribute to a healthy and satisfying life. Moreover, such skills allow individuals to pursue their goals within the framework of social and cultural norms while promoting personal well-being and social harmony (Rashidzadeh, 2012). Research by Lin et al. (2004) demonstrated that assertiveness training improves self-expression, self-esteem, positive self-concept, and interpersonal communication while reducing social anxiety.

Several empirical studies have also supported the effectiveness of assertiveness training. Rabiei (2013) found that assertiveness training programs for high school students increased self-decision-making and self-support skills. Similarly, Rezapour (2013) reported that self-expression training improved assertiveness and self-esteem among less assertive students. Keykhay Farzaneh (2013) found that group training in assertiveness skills reduced social anxiety while enhancing students' social skills and academic performance. Tuttle et al. (2006) incorporated life skills and assertiveness training into students' curricula and reported improvements in adolescents' adaptability and resilience. Lin et al. (2004) also found that assertiveness training improved social interactions, whereas poor self-expression was associated with higher levels of anxiety, depression, and personality problems.

Naji et al. (2010) reported gender differences in self-concept, indicating that boys generally showed higher self-concept than girls and differed in competence-related beliefs. For example, girls often expressed doubts about their competence in mathematics, which affected their performance, whereas boys sometimes showed lower confidence in reading abilities. Healy (2008) demonstrated that school-based life skills interventions increased assertive behavior and help-seeking among students. Similarly, McCrae, Hert, and Meliner (2008) reported that individuals

with lower levels of assertiveness tend to have lower self-confidence, weaker interpersonal relationships, and reduced life satisfaction compared with those with stronger assertiveness skills. Kafrin (2007) also found a strong relationship between teaching assertiveness skills to parents and improvements in students' positive self-concept.

Based on these considerations, the present study seeks to answer the following research question: Is assertiveness training effective in improving students' self-concept and interpersonal relationships?

Material and Methods

This study employed a field-based quasi-experimental design using a pretest–posttest format with a control group. The independent variable was assertiveness (daring) skills training, which was administered to the experimental group, while the control group did not receive any intervention during the study period.

Inclusion Criteria

Participants were selected based on the following criteria: Being male high school students, Enrollment in secondary education, Having no reported physical or psychological illness and Not participating in other research projects during the study period.

The experimental group received assertiveness skills training in eight sessions lasting 60–90 minutes each over a period of approximately one and a half months. After completion of the training, a post-test was administered to both the experimental and control groups.

Participants and Sampling

The statistical population consisted of all male high school students in Khushab City, Razavi Khorasan Province, during the 2015–2016 academic year. A sample of 40 students was selected. Sampling was conducted using multi-stage cluster sampling in three stages:

Educational area selection: The central district of Khushab City was randomly selected from the educational districts.

School selection: Ten boys' high schools in the central district were randomly selected.

Class selection: One class was randomly selected from each school, resulting in 10 classrooms.

Based on the results of the self-concept and interpersonal relationship questionnaires, 40 available students were selected and randomly assigned to two groups: Experimental group: 20 students and Control group: 20 students.

The experimental group received assertiveness skills training, whereas the control group remained on a waiting list and received no training during the study period.

After the intervention period, post-tests were administered to both groups. Data were analyzed using descriptive statistics and analysis of covariance (ANCOVA) with SPSS software to examine differences between groups.

Ethical Considerations

All ethical principles were observed in conducting this research. Participants were informed about the purpose of the study and the procedures involved. They were also assured that their information would remain confidential and that participation was voluntary, with the option to withdraw from the study at any time.

Instruments

Self-Concept Questionnaire (SCQ): The Self-Concept Questionnaire was developed by Karl Rogers (1938–1957) to measure individuals' levels of self-concept. The instrument contains pairs of contrasting personality traits, and respondents indicate their perceptions of themselves.

The questionnaire measures six dimensions of self-concept: Physical, Social, Temperamental (emotional), Educational, Moral and Intellectual.

Description of Dimensions

Physical: Perception of one's body, health, physical appearance, and strength.

Social: Perceived personal value in social interactions.

Temperament: Perception of one's typical emotional state and emotional reactions.

Educational: Perception of oneself in relation to school, teachers, and academic activities.

Moral: Personal evaluation of moral values and judgments regarding right and wrong behavior.

Intellectual: Perception of one's intelligence, reasoning ability, and problem-solving skills.

Scoring

The questionnaire consists of 48 items rated on a five-point Likert scale. Responses are scored from 1 to 5, with higher scores indicating a higher level of self-concept. The total score is obtained by summing the scores of all items.

Reliability and Validity

Reliability: Test–retest reliability for the total score was 0.91, while reliability coefficients for subscales ranged from 0.67 to 0.88.

Validity: Content and construct validity were established through expert evaluation. In the validation process, 100 items were reviewed by 25 psychologists, and items with at least 0.80 agreement were retained.

Interpersonal Relationships Questionnaire: The Interpersonal Relationships Questionnaire, developed by Manjemizadeh (2011), consists of 19 items designed to measure individuals' interpersonal communication skills. Responses are rated on a Likert scale.

Scoring

The total score ranges from 19 to 95. Higher scores indicate stronger interpersonal communication skills.

Interpretation of scores:

Below 45: Severe communication problems

46–65: Moderate communication problems

66–95: Adequate interpersonal communication skills

Reliability and Validity

Concurrent validity of the questionnaire was confirmed through a significant correlation with the Effective Communication Skills Questionnaire ($r = 0.698$). Reliability was assessed using Cronbach's alpha, which yielded a coefficient of 0.73, indicating acceptable reliability.

Intervention: Assertiveness Skills Training

Assertiveness training is widely used in behavioral therapy to improve individuals' ability to express their thoughts, needs, and feelings appropriately. The aim of this training is to help individuals cope effectively with stressful situations and improve social adjustment.

The program consisted of eight sessions lasting 60–90 minutes each and included explanations, role-playing activities, practical exercises, and feedback.

Key Implementation Principles

Exercises and games were used to facilitate active learning.

The objectives of each activity were explained at the beginning of each session.

Exercise sheets were prepared and distributed to participants.

Chairs were arranged in a circle to facilitate group interaction.

Role-playing activities were used to practice assertive behaviors.

Structure of the Assertiveness Training Program

Session	Content
Session 1	Introduction of participants, explanation of group rules, and presentation of the goals of assertiveness training
Session 2	Introduction to the concept of assertiveness and self-expression skills
Session 3	Practice of self-expression skills through discussion and exercises
Session 4	Continued training in assertive communication and expressing personal needs
Session 5	Practice of assertive responses in interpersonal situations
Session 6	Strengthening assertiveness through role-playing and behavioral rehearsal
Session 7	Introduction to specific assertiveness techniques and strategies
Session 8	Review and consolidation of skills learned in previous sessions

Results

A total of 40 students participated in the study (20 in the experimental group and 20 in the control group). Tables 1 and 2 present the distribution of parents' educational levels and the descriptive statistics for the study variables.

Table 1. Distribution of Parents' Educational Levels by Study Group

Group	Parent	Diploma or Below	Bachelor's Degree	Master's Degree or Higher	Total
Experimental	Mothers	12 (60%)	7 (35%)	1 (5%)	20 (100%)
Control	Mothers	11 (55%)	7 (35%)	2 (10%)	20 (100%)
Total	Mothers	23 (57.5%)	14 (35%)	3 (7.5%)	40 (100%)
Experimental	Fathers	7 (35%)	7 (35%)	6 (30%)	20 (100%)
Control	Fathers	8 (40%)	10 (50%)	2 (10%)	20 (100%)
Total	Fathers	15 (37.5%)	17 (42.5%)	8 (20%)	40 (100%)

Table 1 shows that the majority of mothers had a diploma or lower level of education, while most fathers held bachelor's degrees.

Table 2. Means and Standard Deviations of Study Variables in Pre-test and Post-test

Variable	Test Stage	Experimental Group Mean	SD	Control Group Mean	SD
Interpersonal Relationships	Pre-test	70.90	14.26	66.80	12.84
	Post-test	85.30	6.16	69.80	13.21
Self-concept	Pre-test	128.10	11.75	123.65	11.87
	Post-test	190.55	20.70	124.00	14.76

The results presented in Table 2 indicate that mean scores in the experimental group increased notably from pre-test to post-test for both variables, whereas only minor changes were observed in the control group. The Cronbach's alpha coefficients were 0.68 for the self-concept

questionnaire and 0.88 for the interpersonal relationship's questionnaire, indicating acceptable reliability for the instruments used in this study.

Assumptions of Covariance Analysis

Before conducting inferential analyses, the assumptions of covariance analysis were examined.

Normality Test

The Kolmogorov–Smirnov test was used to evaluate the normality of the variables.

Self-concept: $Z=1.348$, $p=0.053$ $Z = 1.348$, $p = 0.053$ $Z=1.348$, $p=0.053$

Interpersonal relationships: $Z=0.581$, $p=0.888$ $Z = 0.581$, $p = 0.888$ $Z=0.581$, $p=0.888$

Since the p-values were greater than 0.05, the assumption of normal distribution was satisfied.

Homogeneity of Variances

Levene's test was used to assess equality of variances.

Self-concept: $F=1.320$, $p=0.258$ $F = 1.320$, $p = 0.258$ $F=1.320$, $p=0.258$

Interpersonal relationships: $F=0.087$, $p=0.770$ $F = 0.087$, $p = 0.770$ $F=0.087$, $p=0.770$

Because the significance values were greater than 0.05, the assumption of homogeneity of variances was met.

Homogeneity of Regression Slopes

The interaction between the covariate and the independent variable was examined.

Self-concept: $F=0.56$, $p=0.389$ $F = 0.56$, $p = 0.389$ $F=0.56$, $p=0.389$

Interpersonal relationships: $F=8.69$, $p=0.068$ $F = 8.69$, $p = 0.068$ $F=8.69$, $p=0.068$

Since these interactions were not statistically significant, the assumption of homogeneity of regression slopes was confirmed.

Therefore, the use of multivariate analysis of covariance (MANCOVA) was appropriate.

Inferential Statistics

Main Hypothesis: Assertiveness skills training affects self-concept and interpersonal relationships among male high school students. To test this hypothesis, multivariate analysis of covariance (MANCOVA) was conducted.

Table 3. Multivariate Analysis of Covariance Results

Test	Value	F	Hypothesis df	Error df	Sig.	Partial η^2
Pillai's Trace	0.787	64.57	2	35	0.0001	0.787
Wilks' Lambda	0.213	64.57	2	35	0.0001	0.787
Hotelling's Trace	3.69	64.57	2	35	0.0001	0.787
Roy's Largest Root	3.69	64.57	2	35	0.0001	0.787

The results indicate a significant multivariate effect of group membership on the dependent variables ($p < 0.001$). Therefore, further univariate ANCOVA analyses were conducted.

Table 4. ANCOVA Results for Self-Concept and Interpersonal Relationships

Variable	Source	SS	df	MS	F	Sig.	Partial η^2
Self-concept	Pre-test	1.22	1	22.41	0.004	0.952	0.000
	Group	41629.73	1	41629.73	123.01	0.0001	0.774
	Error	12182.62	36	338.40			
Interpersonal Relationships	Pre-test	240.98	1	240.98	2.314	0.137	0.06
	Group	2099.85	1	2099.85	20.16	0.0001	0.359
	Error	3748.93	36	104.13			

The results indicate that assertiveness training significantly increased both self-concept and interpersonal relationships in the experimental group compared with the control group.

Sub-Hypothesis 1: Assertiveness skills training affects students' self-concept.

Table 5. ANCOVA Results for Self-Concept

Source	SS	df	MS	F	Sig.	Partial η^2
Pre-test	23.703	1	23.703	0.071	0.791	0.002
Group	42288.07	1	42288.07	127.52	0.0001	0.775
Error	12269.24	37	331.60			

The results show a significant effect of assertiveness training on self-concept $F(1,37)=127.52$, $p<0.01$, $\eta^2=0.775$. Therefore, the first sub-hypothesis is supported.

Table 6. Adjusted Means of Self-Concept Scores

Variable	Pre-test Mean	SD	Post-test Mean	SD	Adjusted Mean (Experimental)	SD	Adjusted Mean (Control)	SD
Self-concept	70.90	14.26	85.30	6.16	89.41	5.81	72.11	13.27

The adjusted mean of the experimental group was higher than that of the control group, confirming the effectiveness of assertiveness training.

Sub-Hypothesis 2: Assertiveness skills training affects students' interpersonal relationships.

Table 7. ANCOVA Results for Interpersonal Relationships

Source	SS	df	MS	F	Sig.	Partial η^2
Pre-test	291.18	1	291.18	2.873	0.098	0.072
Group	2157.58	1	2157.58	21.28	0.0001	0.365
Error	3749.81	37	101.34			

The results indicate a significant effect of assertiveness training on interpersonal relationships $F(1,37) = 21.28, p < 0.01, \eta^2 = 0.365$. Therefore, the second sub-hypothesis is also supported.

Table 8. Adjusted Means of Interpersonal Relationship Scores

Variable	Pre-test Mean	SD	Post-test Mean	SD	Adjusted Mean (Experimental)	SD	Adjusted Mean (Control)	SD
Interpersonal Relationships	128.10	11.57	190.55	20.70	195.71	18.37	129.21	12.32

The adjusted means indicate that students in the experimental group achieved significantly higher interpersonal relationship scores compared to the control group, confirming the effectiveness of the assertiveness training program.

Discussion

The results of the present study indicate that there is a significant difference between the post-test mean scores of self-concept and interpersonal relationships in the experimental and control groups after controlling for the pre-test effect. Specifically, students in the experimental group obtained significantly higher post-test scores compared with those in the control group. These findings suggest that assertiveness skills training significantly improved both self-concept and interpersonal relationships among male secondary school students. Therefore, the main hypothesis of the study was supported.

These findings are consistent with the results of previous studies, including those conducted by Long and Jakubowski (1999), Alberti and Emmons (2001), Landazabal (2001), Lin et al. (2004), Mehrabizadeh (2008), Molazamani (2008), and Hargie and Dickson (2008), all of which reported that assertiveness training positively influences self-confidence, self-concept, social skills, and interpersonal relationships.

Adolescence is a critical period for the development of social identity and interpersonal competence. During this stage, students increasingly interact with peer groups and begin to establish the foundations of their social lives. Assertiveness skills enable adolescents to express their thoughts, emotions, and needs appropriately while respecting the rights of others, thereby facilitating healthier interpersonal interactions (Stewart & Sandin, 1995).

Researchers such as Lin et al. (2004) describe assertiveness as the core of interpersonal behavior and a key component of effective human relationships. Their findings indicate that assertiveness

training improves self-expression, self-esteem, self-concept, interpersonal communication, and social interaction while reducing social anxiety. Similarly, Alberti and Emmons (1977) define assertiveness as an essential communication skill that enables individuals to express themselves honestly and confidently in social contexts.

Long and Jakubowski (1999) also emphasize that assertiveness involves standing up for one's rights and expressing thoughts, feelings, and beliefs in a direct and honest manner without violating the rights of others. Developing such skills can therefore enhance students' ability to establish positive relationships and improve their psychological well-being.

Also, the results showed a significant difference between the post-test self-concept scores of the experimental and control groups after controlling for the pre-test effect. The mean post-test score of the experimental group was significantly higher than that of the control group, indicating that assertiveness training effectively improved students' self-concept.

These findings are consistent with the results of Molazamani (2006), who investigated the impact of assertiveness training on improving the self-concept of female employees of the Islamic Revolutionary Guard Corps. The findings demonstrated a significant improvement in self-concept among participants who received assertiveness training compared with those who did not.

The goal of assertiveness training programs is to help individuals develop a more positive perception of themselves, enhance self-expression, and express their feelings and opinions appropriately, which in turn increases self-confidence and self-esteem (Farneris, 2007). Assertiveness is therefore considered an important social skill that contributes to personal growth and psychological development (Skin, 2003).

Researchers have also highlighted the close relationship between assertiveness and self-confidence (Tunand, 1994). When individuals develop assertiveness skills, they often experience an internal source of positive thoughts and attitudes toward themselves, which strengthens their self-concept (Parto, 2011). Tunand (1991) argues that assertive individuals typically demonstrate greater self-confidence, positive self-perceptions, and honest and direct communication with others, all of which contribute to a stronger and more stable self-concept.

The findings correspondingly revealed a significant difference between the post-test interpersonal relationship scores of the experimental and control groups after controlling for the pre-test effect. Students who participated in the assertiveness training program achieved significantly higher

scores in interpersonal relationships compared with those in the control group. Therefore, the second sub-hypothesis was confirmed.

Effective communication strategies play a crucial role in establishing healthy social interactions. Poor communication skills can lead to misunderstandings, unhealthy relationships, and increased psychological stress. One of the key components of effective interpersonal communication is the proper use of assertiveness skills. Individuals who lack assertiveness skills often encounter difficulties in expressing their needs and maintaining balanced social relationships (Long & Jakubowski, 1976).

Research conducted by Hargie, Saunders, and Dickson (1995) demonstrated that assertiveness training significantly improves students' social functioning and communication performance. Similarly, Mehrabizadeh et al. (2008) found that assertiveness training significantly enhanced participants' communication skills and interpersonal relationships.

Other studies, including those by Weston (1999), Taylor (1995), Lin et al. (2004), Rezapour Mirsaleh (2011), and Rahimi (2015), have also confirmed the positive impact of assertiveness training on students' interpersonal relationships and social skills. According to Weston (1999), assertiveness training programs help individuals develop healthier beliefs and behaviors, improve self-confidence, and express emotions and opinions more effectively, ultimately leading to more constructive interpersonal relationships.

Taylor (1995) also suggests that assertiveness training teaches individuals how to communicate calmly, confidently, and appropriately in various social situations, which enhances their ability to build and maintain positive relationships. Similarly, Rezapour Mirsaleh (2013) reported that assertiveness training significantly increases students' assertiveness, self-esteem, and interpersonal communication skills, enabling them to interact more effectively with others and defend their rights when necessary. Rahimi (2015) also confirmed the positive influence of assertiveness skills on social skills, particularly interpersonal relationships.

Conclusion

The present study aimed to investigate the effectiveness of assertiveness skills training on the self-concept and interpersonal relationships of male secondary school students in Khushab City. The results indicated that, after controlling for the pre-test scores, there was a significant difference between the experimental and control groups in both self-concept and interpersonal relationships.

Students who participated in the assertiveness training program demonstrated significantly higher post-test scores compared with those who did not receive the training.

These findings suggest that assertiveness training can be an effective educational intervention for improving students' psychological and social functioning, particularly in enhancing self-concept and strengthening interpersonal relationships.

Practical Implications

Based on the findings of this study, the following recommendations are proposed:

Teachers and educators should be trained in assertiveness skills training techniques so that they can help students develop effective communication and self-expression skills.

Educational workshops and professional development programs should be organized for teachers and school administrators to familiarize them with assertiveness training methods.

The Ministry of Education should invest in programs that promote assertiveness skills training as part of student development initiatives, particularly for students experiencing social or communication difficulties.

Counseling and behavioral support centers should be strengthened in schools and communities to provide appropriate interventions for students with interpersonal or behavioral challenges.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Hakim Sabzevari University.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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