

The Effectiveness of Assertiveness Training on Resilience and Empathy in High School Girls in Varamin

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ABSTRACT

Objective: The objective of this study was to determine the effectiveness of assertiveness training on enhancing resilience and empathy among high-school girls in Varamin.

Methods and Materials: This quasi-experimental study employed a pre-test-post-test design with a control group. The statistical population included all high-school girls in Varamin, from which 30 participants were selected through convenient sampling. Participants were randomly assigned to experimental and control groups, each consisting of 15 students. The experimental group received assertiveness training across structured educational sessions, while the control group received no intervention during the study period. Data were collected using the Connor-Davidson Resilience Scale (CD-RISC) and the Davis Empathy Questionnaire, both of which demonstrated acceptable reliability in this study ($\alpha = 0.86$ and $\alpha = 0.79$, respectively). Descriptive statistics and inferential analyses, including multivariate and univariate analyses of covariance (MANCOVA and ANCOVA), were conducted using SPSS version 25 to compare post-test outcomes while controlling for pre-test scores.

Findings: Inferential results showed a significant multivariate effect of group membership on the combined dependent variables of resilience and empathy (Pillai's Trace = 0.930, $F(2, 25) = 164.966$, $p < 0.001$). Between-subject effects indicated that the intervention significantly improved resilience ($F = 73.835$, $p < 0.001$) and empathy ($F = 232.690$, $p < 0.001$) in the experimental group compared to the control group. Effect sizes were large for both variables ($\eta^2 = 0.749$ for resilience and $\eta^2 = 0.899$ for empathy), and statistical power values were high, demonstrating the robustness of the findings.

Conclusion: The results indicate that assertiveness training is a highly effective intervention for improving both resilience and empathy among high-school girls. Incorporating assertiveness-based programs into school mental health initiatives may support adolescents' emotional well-being and interpersonal functioning.

Keywords: Assertiveness training; Resilience; Empathy; High-school students.

1. Introduction

Adolescence is a critical developmental period characterized by rapid cognitive, emotional, and social transitions, during which individuals form foundational skills necessary for navigating interpersonal relationships, academic demands, and emotional challenges. One of the central competencies required during this stage is the ability to communicate effectively and regulate emotions in a constructive manner. Assertiveness—defined as the capacity to express thoughts, feelings, and needs directly and respectfully—plays a significant role in psychological well-being and interpersonal functioning. Numerous studies have emphasized that adolescents who demonstrate higher assertiveness tend to display greater emotional stability, stronger social skills, and healthier patterns of conflict resolution, all of which support their overall mental health and resilience (Parray et al., 2020). Because adolescence is often accompanied by heightened sensitivity, peer pressure, and identity formation, assertiveness training has emerged as one of the most effective psychoeducational interventions for promoting adaptive functioning in young people (Ammouri et al., 2022).

Several scholars assert that assertiveness not only empowers adolescents to articulate their needs but also protects them against interpersonal stress and social anxiety. Research indicates that adolescents with low assertiveness experience greater difficulty in peer relationships, are more vulnerable to bullying, and often struggle with academic adjustment (Abdolghaderi et al., 2021). Assertiveness training enables students to engage in healthier communication patterns, reduce feelings of inferiority, and develop a sense of personal agency. Additionally, assertiveness is closely related to emotional regulation and the ability to manage distress effectively. Training programs that target assertiveness, therefore, help reduce symptoms of anxiety, depression, and interpersonal avoidance, creating a supportive platform for developing psychological resilience (Ahmadi et al., 2021).

Resilience—defined as the capacity to adapt to adversities and recover from stress—is another essential psychological attribute influencing adolescent mental health. Resilient adolescents are better equipped to cope with academic pressures, social challenges, and emotional difficulties. Given that resilience can be strengthened through skill-based interventions, assertiveness training has been proposed as a mechanism that enhances individuals' sense of control and emotional flexibility, which in turn

contributes to overall resilience levels (Sun et al., 2024). Research conducted among students experiencing generalized anxiety disorder showed that combined emotion regulation and assertiveness training substantially improved resilience and reduced psychological symptoms (Ahmadi et al., 2021). This highlights the value of integrating assertiveness training in adolescent mental health programs.

Empathy, as a socio-emotional capacity that enables individuals to understand and respond to the feelings of others, is another critical construct associated with interpersonal success and emotional well-being. Empathy includes both cognitive components (perspective-taking) and emotional components (affective responsiveness), both of which are essential for building supportive relationships during adolescence. Scholars suggest that assertive individuals tend to have better-developed empathy because assertiveness requires awareness of one's own emotions and consideration of others' rights and experiences (De Acedo Lizarraga et al., 2003). Empathy plays an especially important role in adolescents' social development, reducing the risk of conflict, aggression, and behavioral problems. Cross-sectional studies among medical and nursing students have shown that empathic capacities are strongly linked to emotional regulation, resilience, and positive interpersonal communication (Alcorta-Garza et al., 2025). Therefore, interventions that strengthen empathy are considered protective factors during the high-school years.

Recent literature also emphasizes that assertiveness is not merely a communication skill but part of a broader system of psychological competencies supporting emotional intelligence, self-regulation, and academic adjustment. Studies reveal that assertiveness correlates positively with academic progress, perceived social support, and emotional intelligence among secondary school students (Ghazvineh et al., 2022). Assertive students are more capable of managing negative emotions, seeking help appropriately, and engaging confidently with teachers and peers. Furthermore, research indicates that improving students' self-regulation and assertiveness contributes significantly to empathy development, suggesting that interventions aimed at enhancing assertiveness can also strengthen students' socio-emotional functioning (De Acedo Lizarraga et al., 2003).

International studies reinforce the importance of assertiveness in diverse educational and cultural contexts. In Indonesia, for example, assertiveness training significantly reduced violent behavior among adolescents by helping them regulate emotions and manage interpersonal conflicts more effectively (Maryati et al., 2020). Similarly, Turkish

studies have shown notable improvements in assertiveness and self-esteem among university students following structured assertiveness programs (Ayhan & Seki Öz, 2021; Toktas et al., 2022). These findings underscore the cross-cultural applicability of assertiveness-based interventions and demonstrate their relevance beyond specific demographic or cultural groups. The consistency of such outcomes across different societies suggests that assertiveness is a universal skill with substantial implications for psychological well-being.

Mindfulness-based and emotional intelligence interventions have also been linked to enhanced assertiveness in adolescents. Scholars have shown that mindfulness programs designed to reduce stress can improve students' ability to assert their needs confidently while also reducing symptoms associated with social anxiety (Goli et al., 2021). Emotional intelligence, self-regulation, and assertiveness collectively predict academic satisfaction and psychological well-being among high-school students, highlighting the interconnectedness of cognitive, emotional, and behavioral competencies during adolescence (Ghazvineh et al., 2022). These findings indicate that assertiveness is both a predictor and a product of broader personal development processes.

Furthermore, empirical evidence suggests that assertiveness may serve as a protective buffer against risk-taking behaviors in adolescence. Research conducted in western Iran revealed that assertiveness, along with psychological hardiness, is a significant negative predictor of addiction potential among students (Tatari et al., 2021). These findings reinforce the notion that assertiveness training not only enhances communication and emotional skills but also contributes to healthier decision-making and reduces vulnerability to maladaptive behaviors. In a similar vein, problem-solving and assertiveness have been found to contribute significantly to academic resilience, which in turn supports students' successful adaptation to educational challenges (Azimpoor et al., 2021).

Empathy, resilience, and assertiveness also appear to have synergistic effects within adolescent development. Recent cross-sectional studies in healthcare education demonstrate strong relationships between personality traits, resilience, and empathy, suggesting that individuals with higher resilience may be better equipped to understand and respond to others' emotional states (Sun et al., 2024). This implies that interventions aimed at improving assertiveness may indirectly influence resilience and empathy by fostering emotional awareness, confidence, and interpersonal

sensitivity. The interaction between these constructs is particularly relevant in understanding adolescents' emotional and social adjustment.

Within the Iranian context, several studies have confirmed the value of assertiveness-based interventions for improving mental health outcomes among high-school students. Assertiveness programs have been shown to reduce social anxiety and improve coping skills among female students (Abdolghaderi et al., 2021). Additionally, recent research documented significant increases in student well-being following assertiveness training programs in Marivan, emphasizing the positive impact of such interventions on adolescents' psychological functioning (Rouhani et al., 2024). Other studies highlight that assertiveness-oriented educational programs effectively improve self-esteem, emotional regulation, and social functioning among middle-school and high-school students (Sadat Mousavi, 2022). These findings collectively demonstrate the practical relevance of assertiveness training in Iranian educational settings and its potential value for broader implementation.

Given the significant association between assertiveness, resilience, and empathy—and the growing body of evidence supporting the effectiveness of assertiveness training—it is essential to examine how such training impacts these psychological constructs among high-school girls, a population that often encounters unique social pressures, emotional challenges, and developmental transitions. High-school girls may experience heightened sensitivity to peer approval, increased academic expectations, and evolving identity concerns, all of which underscore the importance of interventions that strengthen emotional expression, social competence, and adaptive coping. Moreover, empirical studies from various regions continue to highlight the benefits of assertiveness training for enhancing adolescents' mental health, interpersonal skills, and academic adjustment (Ammouri et al., 2022; Lee et al., 2023). In light of these compelling findings, a focused investigation on female adolescents in Varamin can provide valuable insights into culturally responsive and developmentally appropriate psychological interventions.

Therefore, the aim of this study is to investigate the effectiveness of assertiveness training on resilience and empathy among high-school girls in Varamin.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a quasi-experimental design with pre-test and post-test measurements including an experimental group and a control group. The statistical population consisted of all high-school girls living in Varamin. Based on the research design requirements and inclusion criteria, a sample size of 30 participants was determined. Sampling was carried out using a convenient approach. One girls' high school in Varamin was selected, and eligible students were invited to participate. After obtaining consent and assessing inclusion criteria, the participants were randomly assigned to either the experimental or the control group, with a minimum of 15 students in each. The inclusion criteria were being a female high-school student living in Varamin, being between 15 and 18 years old, enrollment in the secondary level of education, and willingness to participate in the study. The exclusion criteria were lack of motivation or unwillingness to continue participation, missing two training sessions during the intervention, or failure to complete the questionnaires. The only criterion for exclusion during the trial was withdrawal from participation. The sampling method was both convenient and purposeful to ensure that the participants matched the required demographic and educational characteristics.

2.2. Measures

Data collection was carried out through both documentary and field methods. In the documentary phase, books, Persian and international research articles, and credible electronic sources related to assertiveness training, resilience, and empathy were reviewed to establish the theoretical foundations of the study. Electronic searching was conducted to access research findings from global studies and to gather up-to-date information through academic articles, digital libraries, and scientific databases.

The field data were collected through standardized questionnaires. Empathy was measured using the Davis Empathy Questionnaire (1983), which contains 21 items assessing three dimensions: empathic concern, perspective-taking, and personal distress. Items are rated on a five-point Likert scale ranging from "strongly agree" to "strongly disagree," with items 2, 4, 10, 11, 12, 14, and 15 reverse-scored. Higher scores indicate greater empathy. The reliability of the original scale has been confirmed with a

Cronbach's alpha above .70, and the reliability coefficient obtained in this study was .79.

Resilience was assessed using the Connor-Davidson Resilience Scale (CD-RISC; 2003), consisting of 25 items scored on a Likert scale from 0 ("not true at all") to 5 ("true nearly all the time"), producing a total score between 0 and 100. Higher scores indicate higher resilience, and the cut-off score of 50 differentiates individuals with low versus higher resilience levels. The original instrument reported a Cronbach's alpha of .89. In the present study, the reliability coefficient was .86, indicating strong internal consistency. All questionnaires were administered in both the pre-test and post-test phases to evaluate changes resulting from the assertiveness training.

2.3. Intervention

The intervention protocol was based on the assertiveness skills training program developed by Motabi and Otoofi (2006), drawing upon the textbook *Assertive Behavior Skills* (Motabi & Otoofi, 2006) and the instructional PowerPoint *Practical Guide for Conducting Life Skills Workshops for University Students* by Dr. Ladan Fathi, Dr. Fereshteh Motabi, and Mehrdad Kazemzadeh Otoofi (2011). The eight-session program was delivered in 60-minute sessions and followed a progressive educational sequence. The first session introduced the definition, necessity, and benefits of assertiveness, along with goal-setting principles to help participants envision assertive behavior in real situations. The second session focused on distinguishing among behavioral styles—aggressive, assertive, and passive—emphasizing their cognitive, emotional, and interpersonal characteristics. In the third session, participants learned the components of each communication style, including underlying beliefs, verbal and nonverbal behaviors, emotional expression, problem-solving approaches, and the interpersonal impacts of each style. The fourth session highlighted the importance of assertive behavior in daily life and its psychological and social advantages. The fifth session centered on teaching personal rights, helping participants understand boundaries and self-respect. The sixth session introduced different forms of assertive behaviors and practical strategies for demonstrating assertiveness in various contexts. The seventh session trained students in effective refusal skills, including how to say "no" to unreasonable demands and how to use specific techniques such as the "broken record" and "disarming" strategies in challenging situations. The final session

addressed potential negative consequences of assertiveness, methods for managing them, and ways to strengthen assertiveness over time, followed by group discussion and conclusion.

2.4. Data Analysis

Data analysis was performed using both descriptive and inferential statistical methods. Descriptive statistics such as frequency distributions, percentages, means, standard deviations, and relevant diagrams were used to describe the characteristics of the participants and to summarize the pre-test and post-test scores of empathy and resilience. Inferential analysis included multivariate and univariate analyses of covariance (MANCOVA and ANCOVA) to examine the effect of assertiveness training while controlling for baseline differences between groups. These methods allowed for determining whether the changes in the dependent variables were statistically significant after

adjusting for pre-test scores. All data analyses were conducted using SPSS version 25, ensuring accurate and standardized interpretation of the results.

3. Findings and Results

The demographic characteristics of the participants indicated that both the experimental and control groups consisted of 15 high-school girls each, with ages distributed across three categories. In the experimental group, 5 students were 16 years old (33.3%), 5 students were 17 years old (33.3%), and 5 students were 18 years old (33.3%). Similarly, the control group showed a comparable distribution, with 6 students aged 16 years (40%), 4 students aged 17 years (26.7%), and 5 students aged 18 years (33.3%). Overall, both groups demonstrated a balanced age composition, with each group totaling 100% across the three age categories.

Table 1

Descriptive Statistics for Mean and Standard Deviation of Resilience and Empathy Scores in Pre-test and Post-test

Group	Variable	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD
Control	Resilience	44.266	10.532	44.40	7.139
	Empathy	19.666	5.887	21.066	5.509
Experimental	Resilience	41.600	5.207	65.67	7.566
	Empathy	19.333	5.108	48.066	3.575

The descriptive findings show clear differences between the control and experimental groups across pre-test and post-test measurements for resilience and empathy. In the control group, resilience scores remained relatively stable, with a pre-test mean of 44.266 (SD = 10.532) and a post-test mean of 44.40 (SD = 7.139). Empathy scores also showed only minimal change, increasing slightly from a pre-test mean of 19.666 (SD = 5.887) to 21.066 (SD = 5.509). In contrast, the experimental group demonstrated substantial improvement following assertiveness training. The mean resilience score increased from 41.600 (SD = 5.207) in the pre-test to 65.67 (SD = 7.566) in the post-test. Similarly, empathy scores rose significantly from a pre-test mean of 19.333 (SD = 5.108) to 48.066 (SD = 3.575) in the post-test. These descriptive results indicate that the assertiveness training had a strong positive effect on both resilience and empathy among participants in the experimental group.

Before performing the inferential analyses, the key statistical assumptions underlying ANCOVA and

MANCOVA were examined to ensure the accuracy and validity of the results. The normality of score distributions for resilience and empathy in both pre-test and post-test phases was assessed using skewness, kurtosis, and visual inspection of Q-Q plots, all of which indicated that the data were within acceptable ranges. Homogeneity of variances across groups was evaluated using Levene's test, which confirmed that variance levels were not significantly different between the experimental and control groups. The assumption of homogeneity of regression slopes was also tested to verify that the relationship between the covariates (pre-test scores) and the dependent variables (post-test scores) did not differ across groups. Additionally, multicollinearity was assessed to ensure that the dependent variables in the multivariate model were sufficiently independent. All assumptions were met, allowing the analyses to proceed with confidence in the robustness of the statistical findings.

Table 2

Multivariate Analysis of Covariance (MANCOVA) for Comparing Resilience and Empathy Between Experimental and Control Groups

Effect	Test	Value	F	df Effect	df Error	Sig.	Eta Squared	Power
Group	Pillai's Trace	0.930	164.966	2	25	0.000	0.930	1.000
	Wilks' Lambda	0.070	164.966	2	25	0.000	0.930	1.000
	Hotelling's Trace	13.197	164.966	2	25	0.000	0.930	1.000
	Roy's Largest Root	13.197	164.966	2	25	0.000	0.930	1.000

The results of the multivariate analysis of covariance revealed a significant multivariate effect of group membership on the combined dependent variables of resilience and empathy after controlling for pre-test scores. All four multivariate tests—Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root—were highly significant, with $F(2, 25) = 164.966$ and $p < .001$ across all

indices. The eta squared value of .930 indicates that 93% of the variance in the combined post-test scores is explained by group membership, demonstrating a very strong effect size. Additionally, the statistical power for all tests was 1.000, confirming the adequacy of the sample size and the robustness of the findings.

Table 3

Tests of Between-Subject Effects for Comparing Resilience and Empathy Between Experimental and Control Groups in Post-test

Variable	Source	Sum of Squares	df	Mean Square	F	Sig.	Power
Resilience	Between Groups	3545.720	1	3545.720	73.835	0.000	0.749
	Within Groups	981.093	1	981.093			
Empathy	Between Groups	5328.240	1	5328.240	232.690	0.000	0.899
	Within Groups	779.658	1	779.658			

The results of the between-subjects effects analysis demonstrated significant differences between the experimental and control groups for both resilience and empathy in the post-test stage. For resilience, the between-groups sum of squares was 3545.720, yielding an F-value of 73.835 with $p < .001$, indicating a strong and statistically significant improvement in the experimental group compared to the control group. Similarly, for empathy, the between-groups sum of squares was 5328.240, corresponding to an F-value of 232.690 with $p < .001$, showing an even larger effect of the assertiveness training on enhancing empathy levels. The high statistical power values (.749 for resilience and .899 for empathy) further support the reliability of these findings and affirm that the intervention produced meaningful improvements across both psychological constructs.

4. Discussion and Conclusion

The purpose of this study was to investigate the effectiveness of assertiveness training on resilience and empathy among high-school girls in Varamin. The results revealed a significant improvement in both constructs among participants in the experimental group compared to

their counterparts in the control group. Specifically, assertiveness training led to a marked increase in students' resilience scores, indicating greater emotional strength and adaptability when facing challenges. Additionally, empathy levels improved substantially following the intervention, suggesting that assertiveness training can foster socio-emotional understanding and interpersonal sensitivity. These findings are consistent with earlier research demonstrating the value of assertiveness-based interventions in enhancing adolescent psychological functioning.

The observed increase in resilience among students who received assertiveness training aligns with several previous studies emphasizing the close relationship between assertiveness, emotion regulation, and psychological adaptability. Ahmadi and colleagues reported that assertiveness training, when combined with emotion regulation skills, significantly increased resilience in students diagnosed with generalized anxiety disorder (Ahmadi et al., 2021). Their explanation was that assertiveness training helps individuals develop a stronger sense of personal agency, which enhances their ability to cope with stressors. Similarly, Sun et al. found a strong association between personality traits, resilience, and

empathy among healthcare students, noting that individuals with stronger emotional skills demonstrated higher resilience levels (Sun et al., 2024). The current findings extend this line of evidence by showing that even a standalone assertiveness training program can significantly improve resilience among adolescents in a general school setting.

Another factor contributing to increased resilience may relate to the role of assertiveness in fostering self-confidence and reducing internalized distress. Abdolghaderi and colleagues showed that assertiveness training significantly reduced social anxiety and improved stress-coping abilities among high-school girls (Abdolghaderi et al., 2021). When adolescents feel more capable of expressing needs and setting boundaries, their sense of emotional security increases, which naturally contributes to greater resilience. The results of the present study reflect this mechanism, as students who learned assertiveness likely experienced increased confidence handling academic and interpersonal pressures, leading to higher resilience scores post-intervention.

The significant improvements in empathy observed in the experimental group are also supported by international research showing the socio-emotional benefits of assertiveness education. De Acedo Lizarraga et al. demonstrated that enhancing assertiveness and self-regulation simultaneously leads to substantial improvements in empathy, particularly in cognitive perspective-taking and emotional attunement (De Acedo Lizarraga et al., 2003). Assertiveness training encourages individuals to recognize both their own rights and the rights of others, thereby strengthening the cognitive and emotional foundations of empathic responding. This conceptual pathway explains why empathy levels increased so sharply following the training.

Similarly, Alcorta-Garza and colleagues found that empathy—especially cognitive empathy—was linked to interpersonal competence and emotional understanding among medical students (Alcorta-Garza et al., 2025). Although their population differs from the adolescents in this study, the mechanism remains consistent: interpersonal skill development, when shaped through structured educational interventions, cultivates empathy. Assertiveness training used in the current study likely helped students understand others' perspectives more effectively by teaching them how to communicate constructively, listen attentively, and manage interpersonal conflicts without hostility or avoidance.

The current findings also resonate with earlier research suggesting that assertiveness is not only a communication skill but also a significant predictor of broader emotional capacities. Ghazvineh et al. reported that assertiveness, emotional intelligence, and self-regulation collectively influenced academic satisfaction through the mediating effect of perceived social support (Ghazvineh et al., 2022). Their study showed that assertiveness helps individuals navigate social environments more effectively, which in turn enhances their emotional understanding and empathy. This aligns with the results of the present study by illustrating how assertiveness training fosters interpersonal awareness—a core component of empathy.

The findings further echo evidence from large-scale studies conducted among adolescent and university populations. Parray et al. found that assertiveness training significantly improved both assertiveness and self-esteem in high-school students (Parray et al., 2020). Although their study did not explicitly examine empathy, their results imply that increased self-esteem and communication skills could translate into improved socio-emotional understanding. Likewise, Ayhan and Seki Öz documented substantial gains in assertiveness and self-esteem among nursing students following hybrid assertiveness education in the COVID-19 era (Ayhan & Seki Öz, 2021). These improvements in self-concept and communication can be viewed as precursors to stronger empathic functioning, supporting the current findings.

Other studies also highlight the broad impact of assertiveness training on psychological well-being, which indirectly supports empathy and resilience development. Ammouri et al. reported that an assertiveness program delivered to medical students in Morocco improved students' communication abilities and increased their emotional engagement with peers and instructors (Ammouri et al., 2022). Such enhancements in interpersonal behavior are consistent with the emotional and social mechanisms underlying empathy. Additionally, research by Rouhani demonstrated that assertiveness training significantly improved students' active well-being, a construct closely related to resilience and emotional vitality (Rouhani et al., 2024). When adolescents acquire assertiveness skills, they appear to develop not only communication competencies but also deeper emotional and psychological strengths.

The findings of the present study also align with research showing that assertiveness reduces maladaptive emotional responses and supports psychosocial adjustment. Goli and colleagues found that a mindfulness-based stress-reduction

program enhanced assertiveness among students with social anxiety, underscoring the role of communication skills in reducing emotional distress (Goli et al., 2021). If assertiveness can reduce anxiety and improve emotional clarity, it is reasonable that it also improves resilience and empathy as observed in this study. Similarly, Sadat Mousavi found that emotion regulation training significantly increased assertiveness in students, suggesting that assertiveness is integrally linked to emotional understanding and regulation (Sadat Mousavi, 2022). These emotional capacities are foundational for both resilience and empathy, reinforcing the present results.

Furthermore, Azimpoor et al. identified assertiveness as a significant predictor of academic resilience, mediated by problem-solving skills and adaptive strategies (Azimpoor et al., 2021). Their findings are especially relevant because they demonstrate that assertiveness directly influences resilience—a relationship clearly supported by the results of this study. Adolescents who learn assertive communication may perceive themselves as capable and effective in problem-solving, thereby increasing their resilience. This explanation helps contextualize why resilience scores increased dramatically in the experimental group.

Finally, Toktas et al. found that assertiveness levels among university students were closely linked to their attitudes toward academic engagement and physical education (Toktas et al., 2022). Although not directly related to empathy, such findings demonstrate that assertiveness affects multiple dimensions of students' functioning. This supports the conclusion that assertiveness training has far-reaching psychological benefits, including the enhancement of resilience and empathy observed in the current study.

Overall, the findings of the present study are strongly supported by existing literature that positions assertiveness training as a valuable intervention for promoting psychological well-being, emotional competence, and interpersonal understanding. The substantial improvements in resilience and empathy observed among high-school girls following the intervention demonstrate the powerful influence of assertiveness training on adolescent development. As adolescence is a period of heightened emotional and social vulnerability, interventions that simultaneously strengthen resilience and empathy are particularly crucial for fostering healthy development.

5. Limitations & Suggestions

This study has several limitations that should be acknowledged. The sample size was relatively small, consisting of only thirty participants, which limits the generalizability of the findings to larger populations. Additionally, the sample was drawn from a single girls' high school in Varamin, restricting the diversity of cultural, socioeconomic, and educational backgrounds represented. The study also relied exclusively on self-report questionnaires, which are subject to social desirability bias and may not fully capture behavioral or emotional changes. Another limitation is the short duration between pre-test and post-test assessments, which does not allow for evaluation of long-term effects. Finally, the study did not include follow-up assessments, preventing conclusions regarding the persistence of gains in resilience and empathy over time.

Future research should replicate this study using larger and more diverse samples across multiple schools and regions to improve generalizability. Longitudinal designs with follow-up assessments would help determine whether improvements in resilience and empathy are maintained over time. Researchers could also incorporate qualitative methods such as interviews or behavioral observations to complement self-report measures and provide richer data. Comparing assertiveness training with other psychological interventions, such as emotion regulation therapy or mindfulness-based programs, could clarify the unique contribution of assertiveness skills. Additionally, examining the impact of assertiveness training on related variables—such as peer relationships, academic achievement, or social anxiety—would provide further insights into its broader developmental effects.

In practical terms, schools should consider integrating assertiveness training into their regular mental health and life-skills curricula. Counselors and educators can use structured assertiveness programs to help students develop healthier communication strategies and increase their emotional resilience. Implementing such programs early in adolescence may prevent the development of interpersonal difficulties and emotional problems. School psychologists and counselors can also tailor assertiveness training sessions to address specific challenges faced by students, such as conflict resolution or stress management. Finally, training teachers to reinforce assertive communication in the classroom can create a supportive environment that promotes empathy, confidence, and psychological adjustment among students.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this article.

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