



Research Paper: The Effectiveness of Mindful Self-Compassion Program on Distress Tolerance, Emotional Expression, and Psychological Flexibility in Individuals with Social Anxiety Disorder



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Abstract

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Objective: The present study aimed to investigate the effectiveness of the mindfulness-based self-compassion program on distress tolerance, emotional expression, and psychological resilience in individuals with social anxiety disorder.

Methods: This study was a quasi-experimental study with a pre-test and post-test design. Thirty individuals with social anxiety disorder were selected through purposive sampling in counseling centers and cyberspace, and they were randomly assigned to two experimental and control groups. At the beginning and end of the study, the two groups answered the questionnaires, including Social Phobia Inventory (SPI), Distress Tolerance Scale (DTS), Emotional Expressiveness Scale (EES), and Cognitive Flexibility Inventory (CFI). The experimental group underwent a mindful self-compassion intervention for eight weekly sessions, one session lasting 150 minutes, while the control group did not receive any treatment. Univariate analyses of covariance were employed to analyze the data using SPSS software version 27.

Results: The results of ANCOVA analyses showed that there was a significant difference between the experimental and control groups in the post-test of distress tolerance, emotional expression, and psychological flexibility ($p < 0.05$). The results of the Bonferroni test showed that the experimental group had higher scores in the post-test of distress tolerance, emotional expression, and psychological flexibility than the control group ($p < 0.05$).

Conclusion: Findings indicate that the mindful self-compassion program is effective in enhancing distress tolerance, emotional expression, and psychological flexibility for individuals with social anxiety disorder.

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1. Introduction

Social anxiety disorder (SAD) has attracted much attention as a concern among public health professionals in recent decades (Ollendick et al., 2019). SAD is one of the most common psychiatric disorders (Amir et al., 2019). According to the DSM-5-TR, SAD is a marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others. These situations can include social interactions (e.g., having a conversation, meeting unfamiliar people), being observed (e.g., eating or drinking), and performing in front of others (e.g., giving a speech). In these situations, which almost always provoke fear or anxiety, the individual fears that he or she will act in a way or show anxiety symptoms that will be negatively evaluated (i.e., will be humiliating or embarrassing; will lead to rejection or offend others). Therefore, she or he avoids these situations or endures them with intense fear or anxiety that is out of proportion to the actual threat posed by the social situation and to the sociocultural context and is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition (American Psychiatric Association [APA], 2022). In this disorder, fear, anxiety, or avoidance causes clinically significant distress or impairment in social, occupational, or other important areas of life, such that the level of academic achievement, job performance, and the quality of social relationships are significantly reduced (Beidel et al., 2021). Individuals with SAD are socially isolated and have difficulty forming friendships and close, intimate

relationships (Nauphal et al., 2021; Voncken et al., 2021). In these individuals, increased attention to negative and threatening information and a greater focus on the oneself cause physiological arousal that leads to avoidance of social situations (Gregory & Peters, 2017; Tolbert & Pinquart, 2015).

The onset of SAD can be in early childhood or after a stressful or embarrassing experience (such as being bullied or vomiting during a public speech). SAD is one of the most common mental disorders with a median age of onset of 13 years, and about 75% of individuals with it have an onset between the ages of 8 and 15. The 12-month prevalence of SAD has been reported to be about 7% (APA, 2022). The lifetime prevalence is also 13% (Nauphal et al., 2021; Hoffart & Johnson, 2020). This disorder is characterized by shyness and behavioral inhibition in childhood and usually has a chronic, unremitting course that can lead to severe impairment in social functioning in later adolescence and adulthood (Stein & Kean, 2001). Overall, SAD is a common disorder that can lead to significant functional impairment and is considered a risk factor for many additional anxiety and mood disorders, which are associated with reduced quality of life (Strulov & Aderka, 2024).

Several theoretical models have been developed to explain the psychological factors that contribute to the maintenance of Social Anxiety Disorder (SAD) in adults (Rapee et al., 2024). These models indicate that factors such as distress tolerance (Katz et al., 2017; Laposa et al., 2015), emotional expression (Rozen & Aderka, 2023), and

psychological flexibility (Figueiredo et al., 2024) play significant roles in sustaining and exacerbating SAD symptoms in individuals with this disorder.

Distress tolerance is often defined as an individual's ability to experience and tolerate negative emotional states (Li et al., 2024) and the behavioral ability to maintain goal-directed behavior when experiencing emotional distress (Forouzanfar, 2017). People with low distress tolerance typically have a negative appraisal of an emotional situation and feel unable to tolerate discomfort or distress. They make great efforts to avoid negative emotional experiences and use quick-fix strategies to reduce such experiences (Dempsey, 2019). This state can be seen in people with SAD. They experience high physiological arousal when negatively evaluating a social situation, which they ultimately avoid (Katz et al., 2017; Gregory & Peters, 2017; Tolbert & Pinquart, 2015; Laposa et al., 2015).

In addition to low distress tolerance, individuals with SAD also have problematic patterns of emotional reactivity and emotion regulation (Jazaieri et al., 2015). Based on research evidence, deficits in the processing of emotional expression recognition have been hypothesized as a maintenance factor of SAD that can also affect emotional expression (Lacombe et al., 2023). Emotional expression refers to the outward display of emotion regardless of its value (positive or negative) or its method (facial, verbal, and body posture; Konishi et al., 2017). Based on a review study of emotional structures in SAD, it was found that people with this

disorder have a reduced ability to perceive, label, express, and understand their emotions (Rozen & Aderka, 2023). Therefore, emotional expression problems could act as one of the psychological factors maintaining SAD symptoms.

Also, people with SAD have problems with cognitive flexibility (Erkul, 2023). Cognitive flexibility is a multifaceted cognitive ability essential for successfully adapting to needs and changes in dynamic environments. It includes a range of skills, including shifting attention, processing situations, responding to situations, exploring, and switching between different tasks or actions (Lee et al., 2024; VandenBos, 2015). Extensive research evidence has shown that individuals with SAD have information processing biases in evaluating social situations, particularly in relation to probabilities and cost estimates for social situations, attention to specific stimuli, and ambiguous and negative interpretations of information and social images, which can increase or maintain social anxiety (Nikolić, 2020). Overall, it is important and necessary to pay attention to the psychological factors underlying the maintenance of SAD in the treatment process to reduce its symptoms and signs and prevent its recurrence.

SAD is a common psychiatric condition that persists if untreated (Yim et al., 2024). Given the relatively high prevalence of SAD, several effective pharmacological and psychotherapeutic interventions have been proposed for its treatment (Bandelow & Michaelis, 2015; Bandelow et al., 2015). However, research has shown that only 35%

of individuals with social anxiety disorder receive treatment, and many individuals remain untreated or delay seeking treatment (Goodarzi et al., 2021). Therefore, considering the psychological factors underlying the maintenance of SAD, it may be helpful to consider appropriate and novel intervention approaches. One such new intervention is the Mindful Self-Compassion (MSC) program, which helps increase resilience and reduce negative experiences such as pain, stress, depression, and anxiety (Chen et al., 2024). This program was designed in 2013 by Germer and Neff to foster self-care strategies and enhance mindfulness as a foundation for self-compassion (Germer & Neff, 2013). MSC combines compassion and mindfulness training (Neff & Germer, 2018). Research evidence suggests that mindfulness and self-compassion are prominent positive psychological factors that play an important role in maintaining emotional stability and creating well-being when people face stress. When combined, they can have synergistic effects (Zhou et al., 2024). Research evidence suggests that both self-compassion interventions (Sapach, 2019; Sapach et al., 2023) and mindfulness interventions (Liu et al., 2021; Carlton et al., 2020) can be clinically helpful in managing SAD symptoms. However, given their synergistic effects, incorporating these two programs together in one intervention may provide significant therapeutic benefits for patients with SAD.

Overall, SAD is a debilitating and often chronic psychiatric disorder with little self-healing effect that, if left untreated, can affect

multiple domains of functioning, including education, employment, personal development, and social relationships (Liu et al., 2021; Carlton et al., 2020). Review studies have shown that traditional interventions may not fully target the precipitating or maintaining factors of SAD, as a significant proportion of individuals with SAD still report significant clinical symptoms after treatment. Therefore, it has been suggested that new treatment methods, such as mindfulness-based interventions and self-compassion training, should be used (Sapach, 2019; Carlton et al., 2020). Given that the combination of these two programs has synergistic therapeutic effects and the lack of studies in this field, the MSC program was used in the present study for patients with SAD. Therefore, the purpose of the present study was to investigate the effectiveness of the MSC program on distress tolerance, emotional expression, and psychological flexibility in individuals with SAD.

2. Methods

2.1. Participants

The current research was conducted as a quasi-experimental study using a pretest-posttest design with a control group. The statistical population for this study consisted of individuals suffering from social anxiety disorder in the city of Tabriz in 2024. A targeted sampling method was utilized, and 30 individuals diagnosed with SAD were selected via a public call on the Internet. These individuals were then randomly assigned to one of two groups: the experimental group and the control group. The selection criteria for participants included being a native and resident of

Tabriz, meeting the DSM-5 diagnostic criteria for social anxiety disorder, having no severe suicidal thoughts or attempts, having no prior history of psychotherapy or psychiatric medication, having no specific physical illnesses, and being adults aged 20 to 45 years (these items were checked during the initial clinical interview). Ultimately, the pre-and post-test data of 30 individuals were analyzed and compared across two groups.

2.2. Instruments

Social Phobia Inventory (SPI) : This self-rated scale is designed to screen and assess social anxiety disorder, also known as social phobia. It was developed by Connor et al. (2003). It comprises 17 items, divided into three components: fear (6 items), avoidance (7 items), and physiological discomfort (4 items). Each item is rated on a five-point Likert scale, where 0 means "not at all" and 4 means "extremely." The range of scores is between 0-68. Higher scores indicate a greater presence of symptoms associated with the disorder. A cutoff point of 40, with a diagnostic accuracy of 80%, and a cutoff point of 50, with a diagnostic accuracy of 89%, effectively differentiate individuals with social phobia from those who are not affected. In this study, a cutoff point of 50 was chosen to enhance confidence in the results. The reliability of this scale, assessed using the test-retest method, ranges from 0.78 to 0.89, while its internal consistency is reported at 0.94. The convergent validity with other similar scales falls between 0.57 and 0.80 (Connor et al., 2003). In Iran, Abdi (2004) found the internal consistency of the scale, measured using Cronbach's alpha, to be 0.86, and the test-retest reliability to be 0.83.

In the present study, the Cronbach's alpha for this questionnaire was 0.85.

Distress Tolerance Scale (DTS): This self-report measure, developed by Simons and Gaher (2005), consists of 15 items designed to assess an individual's ability to tolerate emotional distress. It evaluates aspects such as emotional distress tolerance, preoccupation with negative emotions, subjective appraisal of distress, and the effectiveness of efforts to alleviate distress. Each item is rated on a 5-point Likert scale, where 1 means "strongly agree" and 5 means "strongly disagree." The range of scores is between 15-75. Higher scores indicate greater distress tolerance. Simons and Gaher (2005) reported a Cronbach's alpha coefficient of 0.82 for this scale, along with strong criterion validity and initial convergent validity. In Iran, Tofangchi et al. (2022) reported a Cronbach's alpha of 0.96 for the Persian version of this scale, indicating high reliability with a score of 0.90. They also found a convergent validity of 0.59 for the scale, and the results from their confirmatory factor analysis supported its unifactorial structure. In the present study, the Cronbach's alpha for this scale was 0.92.

Ambivalent Emotional Questionnaire (AEQ): The AEQ, created by King and Emmons (1990), is a self-report tool consisting of 16 items designed to measure three aspects of emotional expression: positive emotions, intimacy, and negative emotions. Each item is rated on a five-point Likert scale, where 0 means "strongly disagree" and 4 means "strongly agree." The range of scores is between 0-64. Higher

scores indicate a greater level of appropriate or ambivalent emotional expression. King and Emmons (1990) reported a Cronbach's alpha coefficient exceeding 0.63 for the subscales, showing good correlation with similar instruments. In Iran, Rafieinia (1380) reported the validity of this scale using the internal consistency method of Cronbach's alpha, which was over 0.59 for the subscales. In the present study, the Cronbach's alpha of this questionnaire was found to be 0.88.

Cognitive Flexibility Inventory (CFI): The CFI, introduced by Dennis and VanderWal (1990), is a self-report questionnaire consisting of 29 items that assess three main areas of cognitive flexibility: the tendency to view challenging situations as controllable, the ability to recognize multiple alternative explanations for life events and human behavior, and the capacity to generate various solutions to difficult situations. Each item is rated on a 7-point Likert scale, where 1 indicates "strongly disagree" and 7 indicates "strongly agree." The range of scores is between 29-203. Higher scores reflect greater cognitive flexibility. In the study conducted by Dennis and VanderWal (2010), the concurrent and convergent validity of the instrument were assessed alongside other related scales, and the findings demonstrated that the instrument was appropriate for use. They reported an internal consistency coefficient of 0.84 and a test-retest reliability

of 0.75 for this inventory. In Iran, Kohandani and Abolmaali Alhosseini (2017) investigated the psychometric properties of the Persian version of this inventory. They found a strong correlation between this questionnaire and other similar instruments, reporting a Cronbach's alpha of 0.89. In the present study, the Cronbach's alpha for this inventory was 0.83.

Treatment: The Mindful Self-Compassion (MSC) program is a third-generation treatment developed by Neff and Germer in 2013. Its overall structure is based on Neff's conceptualization of the self-compassion construct and its components, including self-kindness versus self-blame, consideration of human commonalities (shared human experience) versus isolation, and mindful attention versus overidentification. In developing the training protocol, we utilized the structure and content of a program created by Neff and Germer (2013), which includes both formal and informal meditations and exercises related to the educational content of each session, as outlined in Table 1. This program was implemented for a total of 150 minutes per week for the experimental group over the course of an eight-session intervention. During each session, participants received guidance on how to apply the skills in their daily lives, and this was reviewed at the beginning of the following session (Habibi et al., 2022).

Table 1
Summary of the structure and content of MSCP

Session s	Steps	Contents of sessions
1	Introduction to MSCP	Establishing initial contact and providing an introduction to Mindful Self-Compassion (MSC), including: <ul style="list-style-type: none"> - How to cultivate mindful self-compassion - Understanding self-compassion and its various forms - The importance of self-kindness and the shared benefits of mindfulness - The effects of self-compassion on brain function - The physiological aspects of self-criticism versus self-compassion - The benefits of practicing self-compassion - The differences between self-compassion and self-esteem - Common misconceptions about self-compassion This outline aims to clarify these concepts and enhance understanding of self-compassion.
2	Mindful attention	Conceptualizing, training and practicing mindfulness
3	Cultivating loving kindness	Starting meditation: practicing mindful breathing, meditation, and practicing self-love and kindness, visualizing a compassionate self, repeating loving phrases, and the importance of cultivating a compassionate mind.
4	Finding your compassionate voice	Starting meditation: loving-kindness to yourself, finding your inner compassionate voice, stages of progress in compassion (struggle, frustration, fundamental acceptance), motivation based on self-compassion, examining self-criticism and hearing your inner critic, and writing a compassionate letter to yourself.
5	Living deeply	Starting meditation: Giving and receiving compassion, discovering and examining one's core values that give meaning to life, recognizing the hidden values in moments of suffering and living by a covenant, listening with compassion, clarifying valuable goals, and choosing a path to health care.
6	Dealing with difficult emotions	Starting meditation: Self-love and kindness, managing difficult feelings and emotions, strategies for dealing with difficult emotions, labeling emotions, awareness of emotions in the body, relaxation and acceptance, conceptualizing feelings of shame, and negative core beliefs.
7	Exploring challenging relationships	Starting meditation: Compassionate friend, challenging relationships, recognizing and exploring two types of pain in relationships, confronting unmet needs and self-compassion as an antidote to caregiving burnout, reducing caregiver stress.
8	Embracing life	Starting meditation: Compassion for self and others, mindfulness of positive experiences, recognition, acknowledgment, and appreciation of the good aspects of life, cultivating happiness and self-appreciation, commitment to practices, and tips for maintaining them in daily life.

2.3. Procedure

To carry out this research, the researchers took into account ethical considerations, clearly outlined the research objectives, obtained permission from the Islamic Azad University-Tabriz Branch, and received an introductory letter from the university. They then visited two treatment clinics in Tabriz, where the researchers provided mental health services, as well as the university's counseling center. With the assistance of the management from these centers, an online version of the social anxiety disorder screening questionnaire (Social Phobia Inventory; SPI) was created. The link to the questionnaire was shared in virtual groups believed to belong to the city of Tabriz, and participants were encouraged to forward it to others. Additionally, the three centers shared the link through their social media accounts so that their followers could complete the questionnaire. The online questionnaire was accompanied by detailed instructions for how to fill it out, and the results were made available on the main website immediately after submission. After reviewing the initial results of the questionnaires, which received responses from over 2,500 people within three months, individuals living in Tabriz with a cutoff score for social anxiety disorder were identified (more than 200 people). To ensure the accuracy and reliability of the diagnosis, a structured clinical interview was conducted in accordance with DSM-5 criteria by a clinical psychologist. Out of those identified, 123 individuals agreed to participate in a face-to-face interview. From the diagnosed group of 37 individuals, 30 were randomly selected to participate in the

study. After obtaining their consent, these participants were randomly assigned to either an experimental group or a control group, with 15 individuals in each group.

After explaining the instructions and ensuring confidentiality and privacy, pre-test data were collected from both groups. The counseling room at the university counseling center was chosen as the location for the in-person intervention. Ethical principles and confidentiality were emphasized, and participants in the experimental group were informed of their right to withdraw from the experiment at any time. The intervention was conducted with the experimental group over a period of eight weeks. The experimental group received a 150-minute session each week, while the control group did not receive any intervention. Prior notification, payment of travel expenses, and provision of material and moral incentives were considered to prevent subjects from dropping out. Due to the researchers' continuous follow-up and immediate holding of a make-up session for those absent, there was no subject dropout. Finally, post-test data were collected one week after the interventions. After gathering the post-test data, an educational intervention was conducted for all members of the control group to ensure they also benefited from the educational services.

SPSS software version 27 was used for statistical analysis. Mean, and standard deviation was used to report descriptive data indices. Univariate analyses of covariance were used to examine the treatment effect. The accepted significance level was considered equal to .05.

3. Results

The participants had a mean age of 27 years, with a standard deviation of 3.68, and their ages ranged from 20 to 45 years. All participants were natives of Tabriz City and resided there. In the experimental group, nine individuals were female, while the remainder were male. Also, the control group contained ten females, and the rest were male. Most participants had a high school education level (58%). Most (male) were employed as freelancers (64%) and (female) housewives. Table 2 presents the mean and standard deviation of the dependent variables in the pre-test and post-test for both groups. To

Table 2

Descriptive indices (n = 30)

Variables	Situation	EG	CG	S-W test	p-value
		M (S)	M (S)		
Distress	Pre-test	30.86 (6.03)	29.40 (3.68)	0.954	0.078
Tolerance	Post-test	49.06 (7.54)	30.93 (4.23)	0.935	0.147
Emotional	Pre-test	27.83 (6.98)	24.53 (5.42)	0.947	0.098
Expression	Post-test	46.00 (8.94)	24.46 (5.78)	0.963	0.123
Psychological	Pre-test	39.26 (11.11)	43.13 (12.14)	0.991	0.095
Flexibility	Post-test	62.73 (16.48)	42.26 (12.17)	0.908	0.145

Note. EG = Experimental Group; CG = Control Group.

A line graph was used to examine the linearity of the relationship between the pre-test and post-test scores for the three variables. The results indicated that the relationship was linear for all three variables. Additionally, the F test was conducted to assess the homogeneity of the regression slopes for the pre-test and post-test between the experimental and control groups. The results showed that the pre-test and post-test regression slopes were equal across both groups. For distress tolerance, the sum of

examine the effectiveness of MSCP on distress tolerance, emotional expression, and psychological flexibility in individuals with SAD, univariate analysis of covariance was used to examine overall scores (with pre-test scores as covariates).

Prior to conducting the analysis, several preliminary assessments to ensure the validity of the data were conducted. The Shapiro-Wilk test was used to examine the variables' normality. The results, shown in Table 2, indicate that all of these variables had a normal distribution.

squares (SS) was 14.685, with a mean square (MS) of 14.685, resulting in an F value of 0.502 and a p-value of 0.485, indicating no significant difference. For emotional expression, SS was 6.338, MS was 6.338, with an F value of 0.216 and a p-value of 0.646, also showing no significant difference. In the case of psychological flexibility, the SS was 84.970, MS was 84.970, the F value was 2.155, and the p-value was 0.154, suggesting no significant difference in the regression slopes.

To examine the homogeneity of variance between the two groups, Levene's test was performed. The results indicated that the variances for the variables were equal across the groups in the post-test. For distress tolerance, the F value was 1.818 with $p = 0.188$. For emotional expression, the F value was 1.787 with $p = 0.192$. For psychological flexibility, the F value was 0.796 with $p = 0.180$. All p -values were greater than 0.05, suggesting that the assumption of equal variances was met.

Table 3 reports the results of ANCOVAs, which examine the differences between the experimental and control groups in the post-test of distress tolerance, emotional expression, and psychological flexibility.

According to this table, the results show that between the two groups in the distress tolerance ($F = 75.677$; $p < .05$; $\eta_p^2 = .537$), emotional expression ($F = 86.581$; $p < .05$; $\eta_p^2 = .562$) and psychological flexibility ($F = 108.993$; $p < .05$; $\eta_p^2 = .601$) There was a significant difference. Eta-squared shows that the difference between the two groups in these variables was significant in total, and this difference is .537, .562, and .601, respectively. Each variable explains 53.7%, 56.2%, and 60.1% of the variance related to the difference between the two groups, respectively. This means that experimental conditions affected these variables (increasing distress tolerance, emotional expression and psychological flexibility) and had significant therapeutic effects.

Table 3
ANCOVAs results

Variables	SS	Df	MS	F	p-value	η_p^2	OP
Distress Tolerance	2173.264	1	2173.264	75.677	0.001	0.537	1
Emotional Expression	2468.367	1	2468.367	86.581	0.001	0.562	1
Psychological Flexibility	4480.731	1	4480.731	108.993	0.001	0.601	1

Note. SS = Sum of Squares; MS = Mean Square. η_p^2 = Partial Eta Squared; OP = Observed power.

In order to investigate which groups' means is higher in the post-test after

modifying by the Bonferroni test, adjusted means are reported in Tables 4.

Table 4
Adjusted Means Difference results

Variables	Group (I)	Group (J)	MD (I-J)	Std. Error	p-value
Distress Tolerance	EG	CG	18.13	1.163	0.001
Emotional Expression	EG	CG	21.54	0.765	0.001
Psychological Flexibility	EG	CG	20.47	0.946	0.001

Note. EG = Experimental Group; CG = Control Group; MD = Mean Difference.

According to [table 4](#), there is a significant mean difference between the two groups in terms of distress tolerance, emotional expression, and psychological flexibility. Thus, the mean scores of the experimental group in the post-test for these variables were higher than those of the control group. This indicates that the MSC program effectively improved people with SAD.

4. Discussion

The current study aimed to evaluate the effectiveness of the Mindful Self-Compassion (MSC) program on distress tolerance, emotional expression, and psychological flexibility in individuals with social anxiety disorder (SAD). The results indicated that the MSC program significantly increased distress tolerance, emotional expression, and psychological flexibility among participants with SAD. Notably, a significant difference was found between the experimental and control groups in the post-test measurements of these variables, with a large effect size observed. Therefore, it appears that the MSC program is effective in enhancing distress tolerance, emotional expression, and psychological flexibility in patients with this disorder.

According to the present study's results, individuals with SAD in the MSC intervention group showed a significant increase in scores on the posttest of distress tolerance compared to individuals in the control group. This study is the first to use MSC intervention to improve the factors that maintain SAD, including low distress tolerance. Therefore, no similar study has been conducted on individuals with SAD to

compare the results. However, research evidence in other fields has shown that mindfulness training and self-compassion can effectively increase individuals' distress tolerance. For example, [Taghipuor et al. \(2023\)](#) conducted a pilot study showing that compassion-based mindfulness training improved distress tolerance scores in students with generalized anxiety disorder. Also, [Homayounfar et al. \(2023\)](#) showed that mindfulness training based on compassion improved worry and distress tolerance scores in mothers of children with intellectual disabilities. Overall, [Pérez-Aranda et al. \(2021\)](#) showed that mindfulness and self-compassion have a direct impact on symptoms of anxiety and depression, demonstrating this effect through increased resilience or distress tolerance.

One way to explain these findings is that individuals with low distress tolerance evaluate the emotional situation negatively and feel that they are unable to tolerate discomfort or distress. Thus, they make a great effort to avoid negative emotional experiences and also use quick solutions to reduce such experiences ([Dempsey, 2019](#)). Distress tolerance is also related to emotion regulation ([Laposa et al., 2015](#)). Accordingly, since the MSC intervention focuses on training in emotional acceptance, awareness, and efficient processing without distortion, along with a foundation in self-compassion, it can help improve emotion regulation. In fact, increasing self-compassion is essential for effective emotion regulation. By activating the safety and relief systems, self-compassion helps individuals confront their difficult emotions with greater acceptance

and understanding, enabling them to manage these feelings more effectively. Also, Self-compassion requires mindfulness and conscious awareness of one's emotions, both of which are integral to the MSC intervention (Neff and Germer, 2013). Thus, by increasing self-compassion and mindfulness, individuals do not avoid their distressing and painful emotions but approach them with kindness, acceptance, and a sense of shared humanity (Neff, 2003). This may have therapeutic benefits for individuals with SAD, as it has been shown that these individuals have negative appraisals of social situations, which result in heightened emotional and physiological arousal that they ultimately avoid rather than confront (Katz et al., 2017; Gregory & Peters, 2017; Tolbert & Pinquart, 2015; Laposa et al., 2015). This non-acceptance and avoidance may contribute to the maintenance of SAD symptoms. Therefore, MSC intervention can make individuals more aware of their condition by increasing tolerance and non-avoidance.

According to the present study's results, individuals with SAD in the MSC intervention group showed a significant increase in scores on the posttest of emotional expression compared to individuals in the control group. This study is the first to use MSC intervention to improve the factors that maintain SAD, including low emotional expression. Therefore, no similar study has been conducted on individuals with SAD to compare the results. However, research evidence in other fields has shown that mindfulness training and self-compassion can effectively increase individuals'

emotional expression. For example, Taghipuor et al. (1402) showed that mindfulness training based on compassion, in addition to improving distress tolerance scores, can effectively reduce emotional inhibition and improve its expression in students with generalized anxiety disorder. Habibi et al. (1401) also showed that the mindfulness-based compassion training program can impact the rejection of negative emotions and difficulty performing goal-directed behavior in mothers of children with phenylketonuria. Thus, mindfulness-based compassion as an emotion regulation strategy can have a shock-absorbing and protective role in stressful situations and provide more available emotional resources for coping with and accepting difficult situations.

To clarify these findings, it can be stated that the MSC program supports patients in strengthening their calming systems, which they can then use to regulate their motivational states and emotions, such as fear, anger, or disgust. Additionally, through various techniques, patients are guided to develop a compassionate motivational system. This process enhances their ability to feel compassion for others, receive compassion from others, and foster self-transformation (Leaviss & Uttley, 2015). This training fosters intelligent emotional growth, helping individuals learn to manage unpleasant emotions and engage with negative feelings in a healthy way. It focuses on regulating emotions by moderating negative feelings and enhancing positive ones. By promoting awareness of emotions and encouraging a personal understanding of them, this approach increases self-awareness

and mindfulness. As a result, individuals develop better self-control and express their emotions more appropriately. Therefore, teaching self-compassion during treatment can enhance emotional integration, encourage adaptive behaviors, and improve the understanding of both positive and negative emotions (Woolf-King et al., 2019).

According to the present study's results, individuals with SAD in the MSC intervention group showed a significant increase in scores on the posttest of psychological flexibility compared to individuals in the control group. This study is the first to use MSC intervention to improve the factors that maintain SAD, including low psychological flexibility. Therefore, no similar study has been conducted on individuals with SAD to compare the results. However, research evidence in other fields has shown that mindfulness training and self-compassion can effectively increase individuals' psychological flexibility. For example, in a pilot study, Poursaleh and Sarparast (1401) showed that the MSC program can effectively improve psychological flexibility and reduce anxiety during the Coronavirus outbreak. Also, Cheng et al. (2021) concluded in research that psychological inflexibility, along with closely related concepts such as mindfulness and self-compassion, affect people with PTSD.

To explain these findings, individuals who participate in the MSC intervention learn to view their experiences from a broader perspective. This approach allows them to perceive their situations more objectively and

with greater depth, rather than fixating on painful issues and ruminating on them continuously (Brown & Ryan, 2003). In contrast, by enhancing their awareness and engagement with events, they move away from cognitive fusion (rumination) and experiential avoidance. Instead, they come to see situations as manageable, consider alternative justifications, and are able to generate multiple solutions to the problems they face (Hayes et al., 2011). Ultimately, they develop a more flexible approach to dealing with complex emotions and events, leading to more adaptive responses to failure (Waring & Kelly, 2019).

The present study has several limitations, including a lack of long-term follow-up and limited generalizability to other populations due to differences in age, education, and geography. Another limitation is that the data were collected using self-report instruments, which can be subject to bias. Despite being a pioneering study, it would be beneficial to replicate it with larger and more controlled samples to allow for a thorough re-evaluation of the results. Also, in order to investigate the therapeutic effect in long-term, it is better to carry out a follow-up. Additionally, it is recommended that individuals receive appropriate and continuous training to enhance mindfulness, increase self-compassion, reduce rumination, and diminish experiential avoidance. This training may help individuals confront their weaknesses and work towards improvement.

5. Conclusion

In summary, the present study aimed to investigate the effectiveness of the MSC

program on distress tolerance, emotional expression, and psychological flexibility in individuals with SAD, which was to expand and complement previous work and increase the richness of the literature on therapeutic and educational interventions in social anxiety disorder. The results showed that the MSC program effectively increased distress tolerance, emotional expression, and psychological flexibility. These results could be due to the aforementioned reasons, including mindfulness, cultivating loving-kindness, finding one's compassionate voice, living intensely, facing difficult emotions, exploring challenging relationships, and embracing life. Therefore, it seems that the mindfulness self-compassion program has positive benefits for patients with social anxiety disorder.

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Conflict of Interest

There were no financial interests or potential conflicts of interest in the write-up of this article.

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