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Comparison of the Effectiveness of Compassion-Based and Mindfulness-Based Therapies on Dysfunctional Communication Beliefs in Women with Multiple Sclerosis

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A B S T R A C T

Purpose: This study aimed to compare the effectiveness of mindfulness-based and compassion-based therapies in reducing dysfunctional communication beliefs among women with multiple sclerosis (MS).

Methods and Materials: The study employed a quasi-experimental design with a pretest-posttest format and included two experimental groups and one control group. A total of 36 women with MS were selected through purposive and convenience sampling based on predefined inclusion and exclusion criteria and were randomly assigned to mindfulness (n = 12), self-compassion (n = 12), and control (n = 12) groups. The intervention programs included eight weekly sessions for each experimental group, while the control group received no treatment. Dysfunctional communication beliefs were measured using the Epstein and Eidelson Communication Beliefs Questionnaire administered at pretest and posttest. Data were analyzed using paired t-tests, multivariate analysis of covariance (MANCOVA), and Tukey's post hoc test to assess within- and between-group differences.

Findings: The results revealed significant reductions in all subscales of dysfunctional communication beliefs in both the mindfulness and self-compassion groups from pretest to posttest ($p < .001$), with no significant change observed in the control group. MANCOVA results showed significant between-group differences in posttest scores across all variables ($p < .001$). Tukey's post hoc analysis indicated that the mindfulness group exhibited the greatest improvement, followed by the self-compassion group, while the control group performed the worst.

Conclusion: Both mindfulness-based and compassion-based therapies are effective in reducing dysfunctional communication beliefs in women with MS, with mindfulness demonstrating superior efficacy. These findings support the integration of psychological interventions targeting relational cognition into the treatment of individuals with chronic illnesses to enhance their emotional and interpersonal well-being.

Keywords: *Mindfulness, Self-compassion, Dysfunctional communication beliefs, Multiple sclerosis, Cognitive therapy, Interpersonal relationships.*

1. Introduction

Multiple sclerosis (MS) is a chronic, progressive neurological disorder that not only imposes debilitating physical limitations but also significantly affects patients' psychological and interpersonal functioning. Among women, who represent a large proportion of the MS population, emotional instability, communication breakdown, and social withdrawal are prevalent psychosocial complications. These difficulties are often exacerbated by the chronic nature of the disease, leading to a deterioration in the quality of marital and interpersonal relationships, especially through the entrenchment of dysfunctional communication beliefs. In this context, psychological interventions that foster emotional regulation, interpersonal sensitivity, and cognitive flexibility are increasingly being recognized as essential for improving the relational well-being of patients with MS (Sandesjö et al., 2024; Schlindwein et al., 2024; Vagias et al., 2024; Vaheb, 2024).

Dysfunctional communication beliefs—rigid and maladaptive cognitions about how interpersonal communication should occur—are a major factor contributing to conflict and dissatisfaction in close relationships, particularly marriage. These beliefs include assumptions such as "if we disagree, our relationship is in trouble," "my partner should know what I'm thinking," and "men and women are inherently different." Research shows that such beliefs can foster patterns of miscommunication, emotional distance, and conflict escalation, especially in individuals under chronic stress, such as those with long-term illnesses like MS (Luczaj & Kurek, 2022). These beliefs often stem from a lack of emotional insight and difficulty in regulating negative thoughts and feelings during interpersonal exchanges, conditions that are frequently observed in MS patients (Dehghan et al., 2018).

The psychological burden of MS often translates into relational disturbances, with women reporting feelings of isolation, loss of control, and relational detachment. These experiences can compound dysfunctional beliefs and hinder adaptive communication. Mindfulness and compassion-based therapies have emerged as promising psychological tools for addressing these cognitive and emotional disruptions. Mindfulness, defined as purposeful, nonjudgmental awareness of the present moment, enhances self-regulation, reduces reactivity, and encourages a more accepting stance toward one's internal experiences. By cultivating meta-awareness and decentering from automatic negative thought patterns, mindfulness training can reduce rigid communication beliefs and promote healthier relational interactions (Kou et al., 2022; Tabatabaei Nejad & Ibn Yamin, 2021).

On the other hand, compassion-focused therapy (CFT) emphasizes cultivating an inner attitude of warmth, kindness, and understanding toward oneself, especially during times of suffering. For women with MS, who often internalize blame and guilt associated with their condition, self-compassion can counteract harsh self-criticism and foster emotional resilience in their relational roles (Omidian et al., 2022; Özer, 2022). Through techniques such as compassionate imagery, soothing rhythm breathing, and forgiveness exercises, individuals learn to replace maladaptive communication beliefs with more constructive relational schemas (Azizpour et al., 2025). This therapeutic modality has shown efficacy in improving not only emotional well-being but also intimacy, marital satisfaction, and relational functioning in various clinical populations (Masoudi Marghmaleki et al., 2023; Mousavi et al., 2022).

The literature increasingly supports the integration of mindfulness and compassion-based interventions to improve relational health among populations facing chronic illness. For example, studies on patients with MS have demonstrated that mindfulness-based cognitive therapy (MBCT) significantly reduces anxiety sensitivity, emotional reactivity, and dysfunctional beliefs, thereby enhancing patients' adaptive communication patterns and overall quality of life (Dizaj Khalili et al., 2023; Khaloei et al., 2023). Similarly, compassion-focused interventions have been linked to reductions in pain catastrophizing, emotional distress, and marital dissatisfaction in MS patients and their spouses (Azizpour et al., 2025; Jahangiri et al., 2023). These results emphasize the bidirectional relationship between self-directed compassion and interpersonal functioning, especially in conditions where vulnerability and dependency are heightened.

Furthermore, interventions rooted in mindfulness and self-compassion also show transdiagnostic benefits by enhancing key psychological mechanisms such as emotional intelligence, distress tolerance, and cognitive flexibility. These qualities are foundational for maintaining healthy interpersonal dynamics. Studies indicate that mindfulness can significantly improve supportive communication and reduce avoidance behaviors in families dealing with serious health conditions such as cancer, highlighting its potential in chronic illness settings (Zhao et al., 2024). Similarly, self-compassion contributes to relational stability by buffering

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the effects of stress and promoting empathic listening and open expression in dyadic interactions (Abedini et al., 2022; Rack, 2022).

A growing body of research underscores the significance of these interventions in fostering relational well-being among women experiencing marital stress. For instance, interventions that combine marital enrichment programs with mindfulness-based cognitive therapy have yielded significant improvements in communication beliefs and marital satisfaction among women with addicted spouses (Armanpanah et al., 2021). Likewise, mindfulness training has demonstrated effectiveness in improving communication patterns and emotional regulation in couples on the brink of divorce (Aqili & Beizai, 2022). These studies collectively suggest that maladaptive communication styles and relational distress can be effectively addressed through cultivating mindful presence and compassionate self-awareness.

Despite these promising findings, limited studies have specifically explored the comparative effectiveness of mindfulness and compassion-based therapies on dysfunctional communication beliefs in women with MS. This population faces unique challenges, including emotional vulnerability, dependency on partners for daily activities, and fears related to disease progression, which can intensify relational tensions. Moreover, the co-occurrence of physical fatigue and psychological distress in MS creates a feedback loop that can amplify cognitive distortions and miscommunication, further underscoring the need for targeted psychotherapeutic interventions (Dehghan et al., 2018; Luczaj & Kurek, 2022).

Given the conceptual overlap between mindfulness and compassion—both fostering a nonjudgmental, kind, and present-centered stance toward oneself and others—it is essential to explore whether one approach holds an advantage over the other in addressing dysfunctional beliefs. While mindfulness emphasizes awareness and acceptance, compassion-based therapy offers an active counter to self-criticism and shame, making it particularly useful for populations prone to internalizing distress. Clarifying their differential impact on communication beliefs among women with MS can inform more tailored and effective interventions (Masoudi Marghmaleki et al., 2023; Omidian et al., 2022).

This study aims to fill this gap by comparing the effectiveness of mindfulness-based and compassion-based interventions in reducing dysfunctional communication beliefs among women diagnosed with multiple sclerosis.

2. Methods and Materials

2.1. Study Design and Participants

The present study was a quasi-experimental investigation with a pretest-posttest design comprising two experimental groups and one control group. The statistical population included all female patients with multiple sclerosis (MS) who attended the MS Research Center at Sina Hospital in Tehran and the Iranian MS Society in 2024. The research sample was selected through convenience and purposive sampling based on inclusion and exclusion criteria, and subsequently randomly assigned into matched groups using simple randomization. To determine the appropriate sample size, neurophysiological data on sample size design for analysis of variance (ANOVA) indicated that a minimum of 8 patients was sufficient to establish a significant effect (Kaski et al., 2013). Based on this recommendation and prior studies, 36 female MS patients were selected in accordance with inclusion and exclusion criteria and randomly assigned into three groups: self-compassion (n = 12), mindfulness (n = 12), and control (n = 12).

Inclusion criteria included: willingness to participate and completion of the informed consent form; confirmed diagnosis of MS by a neurologist; disability score of 4.5 or less based on the Expanded Disability Status Scale (EDSS) with at least six months elapsed since diagnosis; age range of 20 to 30 years; the ability to walk a minimum of 10 meters and stand unaided for at least 30 seconds (due to mindfulness training requirements such as mindful walking); not being pregnant or lactating; absence of other underlying conditions such as cardiovascular problems or sensory impairments as determined by clinical observation; no prior training in self-compassion or mindfulness; and absence of any therapeutic intervention except pharmacotherapy.

Exclusion criteria included: unwillingness to continue participation at any stage; experiencing a relapse during the month prior to or during the intervention; changes in medication regimen by a physician; missing more than one intervention session; occurrence of adverse effects requiring discontinuation of treatment; and technical or logistical issues during the research process.

2.2. Measures

This is a self-report instrument consisting of 40 items measuring irrational beliefs in marital relationships. It was developed by Epstein and Eidelson in 1981 and includes five subscales: destructive disagreement (items 1, 6, 11, 16, 21,

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26, 31, 36), mind reading (items 2, 7, 12, 17, 22, 27, 32, 37), belief in partner's unchangeability (items 3, 8, 13, 18, 23, 28, 33, 38), sexual perfectionism (items 4, 9, 14, 19, 24, 29, 34, 39), and gender differences (items 5, 10, 15, 20, 25, 30, 35, 40). Scoring is based on a 6-point Likert scale: completely false (0), false (1), probably false (2), probably true (3), true (4), and completely true (5). The sum of the items in each subscale represents the subscale score, and the total score of all subscales reflects the overall level of dysfunctional beliefs. A higher score indicates more irrational and dysfunctional communication beliefs. Epstein and Eidelson (1982) reported Cronbach's alpha values ranging from .72 to .81 for the subscales. In a study conducted by Sahebi and colleagues (2003) to assess the reliability and validity of the instrument within the Iranian population, Cronbach's alpha coefficients were reported as follows: destructive disagreement (.85), mind reading (.76), belief in unchangeability (.72), sexual perfectionism (.63), and gender differences (.56). The overall test-retest reliability was reported as .81.

2.3. Interventions

The self-compassion intervention followed an eight-session group training model grounded in Gilbert's (2014) compassion-focused therapy framework. In the first session, participants were introduced to the conceptual foundations of self-compassion, including understanding how self-kindness contrasts with self-judgment. The second session focused on empathy training, helping participants develop sensitivity toward their own and others' emotions, and emphasized accepting rather than avoiding suffering. The third session centered on cultivating sympathy—deepening emotional engagement with personal challenges to promote self-care. In the fourth session, forgiveness was taught, encouraging participants to accept and forgive their past mistakes to facilitate personal growth and change. The fifth session addressed acceptance, training individuals to endure difficult life situations and transitions, recognizing that change is a natural part of life. The sixth session emphasized cultivating higher-order emotions such as gratitude, love, and inner peace, aimed at enhancing constructive interactions with the environment. In the seventh session, responsibility was introduced as a core element of self-compassion, where participants learned to identify and modify self-critical thinking patterns by adopting more functional perspectives. The final session involved reviewing and practicing previously learned skills to enable participants to flexibly apply self-compassionate strategies across diverse life challenges.

The mindfulness-based intervention was adapted from a program tailored by Noorali (2013) for patients with multiple sclerosis, spanning eight weekly sessions, each lasting 90 to 120 minutes. In the first session, the emphasis was on shifting from automatic pilot to present-moment awareness, including exercises such as mindful raisin eating, body scan, and breathing-focused meditation, with homework involving guided body scan and breathing practices. The second session introduced awareness of bodily sensations and mental chatter, featuring body scan exercises, recording pleasant events, and sitting meditation. The third session deepened concentration and mind-body integration through breath awareness, sitting meditation, noting unpleasant experiences, and breathing space exercises, along with yoga and reflective journaling as homework. The fourth session encouraged broadening perspective to manage distraction, using breath-focused meditation, viewing educational videos, and reflecting on the poem "Wild Geese." The fifth session addressed nonjudgmental engagement with inner experiences and reactions, incorporating sitting meditation, educational films, and the poem "The Guest House." The sixth session focused on recognizing and managing negative thoughts by distinguishing between thoughts and reality, employing alternative perspective-taking and breathing space techniques. In the seventh session, participants identified early warning signs of stress or relapse and created personalized plans for engaging in pleasurable activities and preventive actions.

2.4. Data Analysis

To test the study hypotheses and conduct statistical analysis, both descriptive and inferential parametric statistical methods were used. In the descriptive section, demographic data including participants' age, height, weight, duration of illness, marital status, and education level were reported. In the inferential analysis, the Shapiro-Wilk test was first used to assess data normality. After confirming normal distribution, paired-sample t-tests were used to evaluate within-group changes, and ANCOVA was used to assess between-group differences, controlling for pretest scores. In cases where significant differences were identified, Tukey's post hoc test was applied to determine the source of the difference. All statistical analyses were

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conducted using SPSS software version 27, with a significance level set at $\alpha \leq .05$.

3. Findings and Results

In the first step, the demographic characteristics of the participants were examined. Table 1 presents the means and standard deviations of age, height, weight, and illness duration for the three groups: mindfulness, self-compassion, and control.

Table 1

Mean, Standard Deviation, Maximum, and Minimum of Demographic Information by Group

Group	Variable	N	Min	Max	M	SD
Mindfulness	Age (years)	12	27	45	35.33	5.98
	Height (cm)	12	153	175	162.25	6.03
	Weight (kg)	12	50	80	66.50	9.12
	Illness duration (y)	12	1	9	4.33	2.93
Self-Comp.	Age (years)	12	22	56	36.92	10.29
	Height (cm)	12	156	176	163.42	6.64
	Weight (kg)	12	44	90	58.88	12.93
	Illness duration (y)	12	1	9	4.00	2.80
Control	Age (years)	12	20	50	33.75	9.43
	Height (cm)	12	153	172	162.50	5.28
	Weight (kg)	12	50	86	61.92	11.10
	Illness duration (y)	12	1	8	3.25	2.83

As Table 1 shows, the mean and standard deviation of demographic characteristics are reported separately for each group. An important observation is that the illness duration in all groups exceeded three years. Next, descriptive statistics of the measured variables at the pretest and posttest stages are presented in Table 4 for the three groups.

Table 2

Mean, Standard Deviation, Maximum, and Minimum of Dysfunctional Communication Beliefs in Pretest and Posttest by Group

Group	Variable	Stage	N	Min	Max	M	SD
Mindfulness	Destructive Disagreement	Pretest	12	26	30	28.39	1.31
		Posttest	12	17	23	19.80	1.85
	Mind Reading	Pretest	12	26	32	28.04	1.62
		Posttest	12	18	24	20.62	1.64
	Belief in Partner's Unchangeability	Pretest	12	26	32	27.69	1.65
		Posttest	12	19	23	20.48	1.19
	Sexual Perfectionism	Pretest	12	27	30	27.88	1.07
		Posttest	12	17	21	19.55	1.12
	Gender Differences	Pretest	12	26	31	28.29	1.47
		Posttest	12	18	22	20.14	1.02
	Total Dysfunctional Beliefs	Pretest	12	136	144	140.17	2.79
		Posttest	12	93	110	100.50	4.48
Self-Compassion	Destructive Disagreement	Pretest	12	26	31	28.45	1.46
		Posttest	12	23	26	24.16	1.10
	Mind Reading	Pretest	12	26	31	28.57	1.40
		Posttest	12	21	26	24.51	1.57
	Belief in Partner's Unchangeability	Pretest	12	26	30	28.21	1.08
		Posttest	12	22	26	24.02	1.38
	Sexual Perfectionism	Pretest	12	25	29	27.52	1.41
		Posttest	12	22	26	24.27	1.11
	Gender Differences	Pretest	12	26	31	28.72	1.41
		Posttest	12	22	26	24.01	0.88
	Total Dysfunctional Beliefs	Pretest	12	136	146	141.33	3.00
		Posttest	12	114	125	120.75	3.36
Control	Destructive Disagreement	Pretest	12	25	30	27.55	1.53
		Posttest	12	25	31	28.09	1.93

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Mind Reading	Pretest	12	26	29	28.34	1.03
	Posttest	12	26	30	28.26	1.24
Belief in Partner's Unchangeability	Pretest	12	26	29	27.94	0.85
	Posttest	12	27	31	28.72	1.57
Sexual Perfectionism	Pretest	12	26	32	28.30	1.56
	Posttest	12	26	30	28.29	1.03
Gender Differences	Pretest	12	25	29	27.65	1.25
	Posttest	12	25	31	27.48	1.66
Total Dysfunctional Beliefs	Pretest	12	133	144	139.67	3.37
	Posttest	12	134	145	140.58	3.87

As shown in Table 2, the means of dysfunctional communication beliefs and all its subscales decreased in both the mindfulness and self-compassion groups after the intervention, while in the control group, no such change was observed.

To test the research hypotheses, the assumptions for using parametric statistics were first checked. The Shapiro–Wilk test was used to examine the normality of the data distribution, and the results indicated that the data in all three groups (mindfulness, self-compassion, and control) were normally distributed for dysfunctional communication beliefs in both the pretest and posttest stages ($p > .05$). Levene's test further confirmed the assumption of homogeneity of variances.

To assess within-group changes, a paired samples t-test was conducted (Table 3).

Table 3

Within-Group Differences in Dysfunctional Communication Beliefs Using Paired t-Test

Group	Variable	t	df	Sig.
Mindfulness	Destructive Disagreement	11.736	11	.001
	Mind Reading	9.824	11	.001
	Belief in Unchangeability	11.606	11	.001
	Sexual Perfectionism	18.746	11	.001
	Gender Differences	17.910	11	.001
	Total Dysfunctional Beliefs	33.005	11	.001
Self-Comp.	Destructive Disagreement	8.346	11	.001
	Mind Reading	6.197	11	.001
	Belief in Unchangeability	9.412	11	.001
	Sexual Perfectionism	4.961	11	.001
	Gender Differences	9.281	11	.001
	Total Dysfunctional Beliefs	16.283	11	.001
Control	Destructive Disagreement	-.754	11	.467
	Mind Reading	.205	11	.841
	Belief in Unchangeability	-1.366	11	.199
	Sexual Perfectionism	.025	11	.981
	Gender Differences	.290	11	.777
	Total Dysfunctional Beliefs	-.729	11	.481

Results from Table 3 revealed that both the mindfulness and self-compassion groups showed statistically significant reductions in all subscales and the total score of dysfunctional communication beliefs ($p < .001$), whereas the control group did not exhibit any significant change.

To analyze between-group differences, a multivariate analysis of covariance (MANCOVA) was conducted, controlling for pretest scores (Table 4).

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Table 4

Between-Group Differences in Dysfunctional Communication Beliefs (MANCOVA)

Variable	SS	df	MS	F	Sig.	η^2
Destructive Disagreement	433.610	12	36.134	11.632	.001	.859
Mind Reading	400.308	12	33.359	33.859	.001	.946
Belief in Unchangeability	415.577	12	34.631	13.878	.001	.879
Sexual Perfectionism	475.275	12	39.606	40.190	.001	.954
Gender Differences	334.272	12	27.856	16.202	.001	.894
Total Dysfunctional Beliefs	9878.172	12	823.181	69.509	.001	.973

The MANCOVA results in Table 4 confirmed significant differences among the three groups in all subscales and the total score of dysfunctional communication beliefs after the intervention. To pinpoint where these differences lay, Tukey's post hoc test was used (Table 5).

Table 5

Tukey's Post Hoc Pairwise Comparison of Dysfunctional Communication Beliefs

Group Comparison	Self-Compassion	Control
Mindfulness	.001	.001
Self-Compassion	---	.001

According to Table 5, significant differences were found between the mindfulness group and both the self-compassion and control groups, and between the self-compassion and control groups as well. A comparison of mean scores indicated that the mindfulness group achieved the greatest improvement in dysfunctional communication beliefs, followed by the self-compassion group, while the control group showed the least improvement.

4. Discussion and Conclusion

The primary aim of the present study was to compare the effectiveness of mindfulness-based and compassion-based therapies on dysfunctional communication beliefs in women diagnosed with multiple sclerosis (MS). The results of the within-group paired t-tests revealed that both intervention groups—mindfulness and self-compassion—experienced statistically significant reductions across all subscales of dysfunctional communication beliefs from pretest to posttest. These subscales included destructive disagreement, mind reading, belief in partner's unchangeability, sexual perfectionism, and gender differences. Conversely, the control group did not show any significant changes. Furthermore, multivariate analysis of covariance indicated that the differences in posttest scores among the three groups were statistically significant. Post hoc analyses demonstrated that the mindfulness group showed the most substantial improvement, followed by the self-compassion group, while the control group exhibited the least improvement. These findings suggest that both interventions are effective in altering maladaptive relational beliefs, with mindfulness yielding comparatively greater benefits.

These findings are consistent with existing literature emphasizing the therapeutic potential of mindfulness in modifying cognitive distortions and enhancing interpersonal functioning. Mindfulness enables individuals to become more aware of their automatic thoughts, to observe them without judgment, and to disengage from maladaptive emotional responses that often underlie communication failures. In the context of MS, where emotional reactivity and interpersonal dependence are common, mindfulness may create the mental space necessary for more constructive communication. Prior research has confirmed that mindfulness-based interventions significantly reduce relational stress, enhance emotion regulation, and weaken dysfunctional cognitive schemas in intimate relationships (Dehghan et al., 2018; Kou et al., 2022; Luczaj & Kurek, 2022). In particular, mindfulness has been shown to be effective in improving communication patterns among couples experiencing high levels of stress, such as those coping with illness or addiction (Aqili & Beizai, 2022; Armanpanah et al., 2021).

The superiority of mindfulness over self-compassion in the present study may be attributed to its greater focus on present-moment awareness and attentional control, which directly counteract the automaticity of dysfunctional beliefs such as mind reading and rigid partner expectations.

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Participants in the mindfulness group likely benefited from the structured attentional exercises (e.g., body scans, breathing space, and sitting meditations) that trained them to observe their reactions and modify their internal dialogue. As Zhao et al. (2024) demonstrated, mindfulness reduces avoidance behaviors in couples dealing with serious illnesses by promoting open emotional expression and enhancing dyadic presence (Zhao et al., 2024). Moreover, Rack (2022) found that mindfulness mediates the relationship between communication competence and job satisfaction, which supports its applicability in broader interpersonal domains beyond the clinical setting (Rack, 2022).

While self-compassion was slightly less effective than mindfulness in the present study, it nonetheless resulted in significant improvements in dysfunctional communication beliefs. This aligns with previous research that links compassion-based therapy with enhanced psychological flexibility, reduced self-criticism, and improved relational satisfaction (Abedini et al., 2022; Masoudi Marghmaleki et al., 2023; Özer, 2022). By cultivating a more accepting and nurturing internal voice, individuals can reduce their reactivity and negative attributions during interpersonal conflict. This transformation in self-relating is often reflected in a more empathic and forgiving attitude toward others, which is essential for relational harmony, especially in the context of chronic illness where vulnerability is heightened. Research by Omidian et al. (2022) further validates this pathway, showing that compassion-based therapy significantly reduces irrational relational beliefs in women facing spousal substance abuse (Omidian et al., 2022).

One possible explanation for the relatively lower impact of compassion-based therapy in comparison to mindfulness is the cognitive-emotional complexity of compassion cultivation, which may require more time and reinforcement than the eight sessions offered in the present study. Developing self-compassion often involves confronting internalized shame and guilt—emotional patterns that may be deeply entrenched in women with chronic conditions such as MS. Additionally, the neurological burden of MS might affect the patient's emotional processing capacity, potentially reducing the immediate impact of emotionally intensive interventions like compassion training. Nevertheless, studies such as Jahangiri et al. (2023) have shown that compassion-focused approaches, when implemented over longer durations, lead to reductions in pain catastrophizing and greater acceptance of suffering in MS patients, which indirectly support healthier interpersonal dynamics (Jahangiri et al., 2023).

Moreover, the results of the present study contribute to the growing consensus that psychological interventions can play a pivotal role in modifying communication beliefs, which are otherwise considered stable cognitive structures. Luczaj and Kurek (2022) argue that dysfunctional beliefs about communication are not only predictive of relational distress but also modifiable through emotional awareness and psychological flexibility, both of which are enhanced by mindfulness and compassion-based approaches (Luczaj & Kurek, 2022). This view is supported by the findings of Tabatabaei Nejad and Ibn Yamin (2021), who reported significant reductions in rumination and communication distortions following mindfulness-based cognitive therapy among women experiencing marital dissatisfaction (Tabatabaei Nejad & Ibn Yamin, 2021). Such outcomes suggest that these interventions operate by dismantling the cognitive-affective loops that perpetuate maladaptive interaction patterns.

Furthermore, the effectiveness of these interventions in the MS population underscores the relevance of integrative psychological models in chronic illness care. Living with a degenerative condition like MS imposes a constant psychological load, which can compromise interpersonal stability. Thus, improving relational beliefs is not merely a matter of enhancing communication—it is about restoring the sense of agency, trust, and safety in one's relationships. As demonstrated by Khaloei et al. (2023), mindfulness-based cognitive therapy contributes to the psychological well-being of women with MS by fostering emotional resilience, which may, in turn, translate into improved communication (Khaloei et al., 2023). Similarly, the therapeutic outcomes reported by Azizpour et al. (2025) and Dizaj Khalili et al. (2023) support the clinical utility of both compassion and mindfulness-based interventions in alleviating psychological symptoms and cognitive distortions among MS patients (Azizpour et al., 2025; Dizaj Khalili et al., 2023).

Overall, this study strengthens the case for integrating mindfulness and compassion-based therapies into psychosocial treatment plans for women with MS. These interventions not only address individual symptoms of distress but also improve relational dynamics that are central to patients' quality of life. Future applications may benefit from personalized therapy plans that combine elements of both approaches, depending on patients' emotional needs and cognitive readiness. As suggested by Mousavi et al.

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(2022), hybrid models such as compassion-enhanced ACT can simultaneously target behavioral flexibility and interpersonal beliefs, offering a comprehensive solution to relational dysfunction (Mousavi et al., 2022).

This study, while informative, is not without limitations. First, the relatively small sample size (N = 36) limits the generalizability of the findings to the broader MS population. The participants were drawn from a single geographical location (Tehran), which may reduce cultural variability and introduce selection bias. Second, the duration of the intervention may not have been sufficient to produce stable long-term changes, particularly in the self-compassion group where deeper emotional restructuring may require extended therapeutic engagement. Third, reliance on self-report measures could have introduced response biases such as social desirability or inaccurate self-assessment, especially considering the cognitive and emotional impairments often associated with MS. Lastly, the study did not include follow-up measurements, which limits the understanding of the durability of the observed therapeutic effects over time.

Future research should seek to expand the sample size and diversity by recruiting participants from multiple clinical centers across different cultural contexts. Additionally, including long-term follow-up assessments would help determine whether the benefits of mindfulness and compassion-based therapies are sustained over time. It may also be useful to include objective or third-party evaluations of communication behaviors, such as partner-reported outcomes or observational coding, to triangulate findings. Another promising avenue is exploring the combined or sequential delivery of mindfulness and compassion-based components to evaluate whether a synergistic effect enhances treatment outcomes. Finally, studies could examine moderators such as baseline levels of emotional regulation, personality traits, or disease progression to identify which subgroups benefit most from each intervention.

Therapists working with women diagnosed with MS should consider incorporating mindfulness and self-compassion techniques into treatment protocols aimed at improving relational health. Given the evidence supporting mindfulness as particularly effective in addressing cognitive aspects of communication dysfunction, it may serve as a preferred initial intervention. Compassion-focused approaches can be introduced progressively to target deeper emotional blocks and enhance relational warmth. Group-based formats may offer additional benefits through shared experiences and mutual validation. Moreover, integrating these interventions into broader multidisciplinary care models—alongside pharmacological treatment, physical therapy, and family counseling—can offer a holistic pathway to improving psychological and relational well-being in this population.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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