

# A Comparative Study on the Efficacy of Mindfulness-Based Cognitive Therapy and Spiritual Self-Care Training on the Components of Suffering in Hemodialysis Patients

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## Abstract

**Background:** Patients undergoing hemodialysis often experience significant suffering, encompassing various psychological and existential components that negatively impact their quality of life.

**Objectives:** This study aimed to compare the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) and Spiritual Self-Care Training (SSCT) in reducing the components of suffering—physical, psychological, and existential—among patients undergoing hemodialysis.

**Methods:** This study utilized a three-group quasi-experimental design, employing a pre-test, post-test, and follow-up protocol with MBCT, SSCT, and control groups. The target population comprised hemodialysis patients residing in Isfahan, Iran, during the autumn of 2024. A convenience sample of 60 participants was drawn from this population and subsequently randomly allocated to three distinct groups ( $n = 20$  per group). The Life Suffering Questionnaire served as the instrument for measuring the dependent variable across all three assessment time points. The experimental groups received 10 weekly therapeutic sessions each lasting for 90 minutes, with MBCT and SSCT administered, while the control group was a waitlist control receiving no intervention during the study period. Data were analyzed using repeated-measures analysis of variance (ANOVA), supplemented by Bonferroni post-hoc tests, via SPSS version 26.

**Results:** The findings revealed statistically significant differences across three domains of suffering—physical, psychological, and existential—when comparing MBCT, SSCT, and the control group ( $P < 0.01$ ). Notably, SSCT exhibited superior efficacy relative to MBCT in alleviating both physical and psychological suffering ( $P < 0.05$ ). Conversely, no significant difference in effectiveness was observed between the two intervention groups with respect to existential suffering.

**Conclusion:** SSCT outperformed MBCT in reducing physical and psychological suffering in hemodialysis patients, while both interventions equally mitigated existential suffering. These findings highlight the need for tailored interventions, specifically by integrating spiritual components into cognitive therapies, to address the multifaceted suffering of chronically ill patients. Clinically, incorporating such integrated interventions into hemodialysis care could enhance patient well-being and quality of life.

**Keywords:** Mindfulness, Spirituality, Self-care, Suffering, Hemodialysis

## 1. Background

Chronic kidney disease, requiring hemodialysis, presents a significant global healthcare challenge.<sup>1</sup> Patients undergoing hemodialysis frequently experience substantial suffering across physical (e.g., fatigue, anorexia, pain), psychological (e.g., fear, anxiety, depression), and existential/spiritual (e.g., loss of meaning, disrupted connection, diminished hope) dimensions.<sup>2</sup> This suffering is often exacerbated by dialysis-related complications, such as decreased functional capacity, asthenia, fatigue, and muscular cramping, which can lead to a sense of hopelessness, social isolation, immobility, and reduced self-esteem.<sup>3</sup> The chronic nature of kidney disease and its treatment necessitates ongoing education for patients to manage complex medical regimens, including medications and dietary restrictions,

and to develop coping strategies for physical and psychological challenges.<sup>4</sup> Consequently, suffering related to chronic kidney disease significantly impacts patients' physical, psychological, and social well-being, contributing to reduced independence, social withdrawal, depression, decreased energy levels, increased healthcare dependency, and higher mortality rates.<sup>5,6</sup> Therefore, interventions aimed at improving the well-being of hemodialysis patients must prioritize the alleviation of this multi-dimensional suffering.<sup>7,8</sup> Suffering arises from the perception of threatening stimuli and persists as long as those stimuli are present.<sup>9,10</sup>

The accrual of suffering, especially when associated with chronic physical illnesses such as kidney disease, can significantly compromise the health and well-being

indices of affected individuals through the amplification of physical, psychological, and existential anxieties.<sup>3</sup> Consequently, the phenomenon of life and individual suffering must be prioritized in research and clinical interventions for hemodialysis patients. A spectrum of therapeutic modalities, encompassing both psychological and social interventions, has been explored to enhance the well-being of this patient population.<sup>11</sup> These interventions frequently emphasize cognitive-behavioral or spiritual domains, or focus on educational strategies designed to augment psychological, social, and quality-of-life resources, often in conjunction with patient empowerment initiatives. Nevertheless, further investigation is warranted to continually identify and implement efficacious psychological therapies in this context.<sup>12</sup> In alignment with this, the present study evaluated the integration of Mindfulness-Based Cognitive Therapy (MBCT) and Spiritual Self-Care Training (SSCT) as complementary adjuncts to standard medical care.

MBCT integrates cognitive and behavioral techniques to address maladaptive cognitions, such as negative self-perceptions and catastrophic thinking, prevalent in chronic illnesses like kidney disease.<sup>13</sup> For hemodialysis patients, MBCT targets distorted beliefs about health decline and dependency by fostering focused attention on internal cognitive processes and somatic sensations, enabling intentional self-regulation.<sup>14</sup> A core principle, non-judgmental awareness, helps patients observe thoughts and emotions—such as anxiety from dialysis-related complications or fear of mortality—without evaluative reactions, reducing psychological distress.<sup>15</sup> By cultivating this mindfulness, MBCT mitigates suffering linked to hemodialysis-specific stressors, including fatigue, social isolation, and existential concerns, thereby enhancing psychophysiological well-being.<sup>16</sup> Notably, Sohn et al.<sup>17</sup> demonstrated MBCT's effectiveness in reducing depression, anxiety, and stress—key drivers of psychological suffering—in hemodialysis patients.

Complementary to MBCT, self-care competencies, particularly those emphasizing spiritual dimensions, offer significant potential to empower hemodialysis patients in managing their chronic illness and its sequelae, including hemodialysis-related suffering, thereby promoting enhanced health, well-being, and quality of life.<sup>18</sup> Self-care, broadly defined, encompasses the totality of volitional efforts, decisions, behaviors, and strategies employed by individuals to maintain and optimize their health.<sup>19</sup>

SSCT involves the strategic use of spiritual resources within the context of personal beliefs, cognitive processes, and behaviors to protect holistic health, including psychological and physiological dimensions, through the development of individual and collective skills.<sup>20</sup> SSCT addresses intrinsic spiritual needs and integrates skills derived from spiritual, personal, and religious convictions, behaviors, and decision-making frameworks across all

intrapyschic domains—behavioral, cognitive, and affective processes—from micro-level adjustments to macro-level adaptations in response to adversities, challenges, illnesses, and hardships.<sup>21</sup>

In the Iranian context, examples of spiritual practices that might be incorporated into SSCT include prayer, Quran recitation, seeking guidance from religious texts and figures, and engaging in acts of charity or service rooted in religious values. SSCT training cultivates existential and spiritual capacities, such as the need for a divine connection and the development of compassionate connections with oneself and others, to enhance resilience in overcoming suffering and challenges.<sup>19,22</sup> Empirical investigations, including Dermes et al.,<sup>22</sup> have shown that spiritual interventions can effectively reduce depression and anxiety, which are closely linked to physical, psychological, and existential suffering. Furthermore, Lin et al.<sup>6</sup> have demonstrated the mediating role of spirituality in the relationship between physical distress symptoms and demoralization among hemodialysis patients.

Hemodialysis patients frequently experience significant physical, psychological, and existential suffering, impacting their overall quality of life.<sup>6</sup> Traditional medical interventions often fall short in adequately addressing these multifaceted challenges, underscoring the necessity for complementary psychological and spiritual approaches.<sup>7,18</sup> While studies have explored the benefits of MBCT and spiritual interventions individually in hemodialysis patients,<sup>1,22</sup> a direct comparison of their efficacy in reducing the various components of suffering still remains limited.

## 2. Objectives

Addressing this gap, the present study aimed to compare the effectiveness of MBCT and SSCT in alleviating suffering among individuals undergoing hemodialysis.

## 3. Methods

This study employed a three-group quasi-experimental design, including a SSCT group, a MBCT group, and a control group, utilizing a pre-test, post-test, and 45-day follow-up assessment protocol. The target population comprised hemodialysis patients attending a comprehensive hospital center affiliated with Isfahan University of Medical Sciences during autumn 2024. Sixty participants (20 per group) were selected via convenience sampling and randomized to one of the three groups using simple random sampling. A power analysis, assuming a medium effect size ( $f = 0.25$ ),  $\alpha = 0.05$ , and 80% power for repeated-measures ANOVA, justified the sample size of  $N = 60$  to detect significant differences across groups and time points. Inclusion criteria required written informed consent, absence of chronic psychological disorders (e.g., bipolar disorder, schizophrenia) assessed via clinical interviews using DSM-5 criteria, absence of chronic

physical comorbidities, no concurrent psychiatric treatment, and an age range of 30-55 years. Exclusion criteria included non-compliance, withdrawal, failure to complete tasks, or absence from two or more training sessions.

### 3.1. Measure

The Perception of Suffering Scale: The Perception of Suffering Scale, developed by Schulz et al.,<sup>23</sup> is a 33-item instrument designed to evaluate the experience and perception of suffering. This scale operationalizes suffering across three distinct dimensions: physical, psychological, and existential. The physical suffering dimension comprises nine items distributed across two sections, with respondents indicating their level of agreement on a 4-point Likert scale, ranging from "never" (0) to "always" (3). Scores for physical suffering range from 0 to 27, with higher scores denoting greater perceived physical suffering. The psychological suffering dimension consists of 15 items, with respondents utilizing a 4-point Likert scale, ranging from "very low" (0) to "very high" (3), to rate their experiences. Resultant scores range from 0 to 45, with higher scores indicative of increased psychological suffering. Finally, the existential suffering dimension is assessed through nine items, also employing a 4-point Likert scale from "very low" (0) to "very high" (3), yielding scores ranging from 0 to 27.<sup>23</sup> In an Iranian study, Nikmanesh and Shahinfar<sup>24</sup> demonstrated the reliability of the Perception of Suffering Scale, reporting Cronbach's alpha values of 0.85 for the physical suffering subscale, 0.83 for the psychological suffering subscale, 0.82 for the existential suffering subscale, and 0.86 for the full scale.

### 3.2. Procedure

Subsequent to the assignment of participants to three groups—MBCT, SSCT, and a control group—hemodialysis patients completed the Perception of Suffering Scale at

the baseline assessment. Following this, the two intervention groups participated in their respective group-based therapeutic sessions at a designated counseling center. Both SSCT and MBCT interventions were delivered across 10 weekly, 90-minute sessions, facilitated by a therapist with extensive experience in psychotherapy. A detailed outline of the session content for both SSCT and MBCT has been presented in Tables 1 and 2. During the study period, the control group only received standard medical care without any therapeutic intervention. Upon completion of the intervention period, hemodialysis patients in all three groups completed the Life Suffering Questionnaire at the post-intervention assessment, and again after a 45-day interval at the follow-up assessment.

To ensure treatment fidelity, several measures were implemented. Both the MBCT and SSCT interventions were delivered by a single therapist with extensive experience in psychotherapy, adhering to detailed session outlines (Tables 1 and 2) to standardize the content and delivery of each intervention. Regular supervision and consultation with the therapist were conducted to monitor adherence to the protocols and address any deviations.

### 3.3. Statistical Analysis

Statistical analyses were conducted, encompassing the verification of essential assumptions. Specifically, the normality assumption was assessed using the Shapiro-Wilk test, the homogeneity of error variance assumption using Levene's test, the homogeneity of variance-covariance matrices assumption using Box's M test, and the sphericity assumption using Mauchly's test. Descriptive statistics, including means and standard deviations, were calculated. Subsequently, repeated measures analysis of variance (ANOVA) was performed, with Bonferroni post-hoc tests employed for pairwise comparisons. All statistical analyses were performed using SPSS version 26.

**Table 1.** Summary of MBCT Sessions

Sessions	Content
1	Welcome and introductions among group members and therapist, establishing rapport, outlining group goals and rules, psychoeducation and overview of the therapeutic approach, mindful raisin eating exercise, introduction to the concept of automatic pilot, and body scan exercise.
2	Body scan exercise, thought and emotion replacement exercise, training in decentering from thoughts and mental hypotheses by labeling them as hypotheses, recording pleasant events.
3	Training in seated meditation (1-10 minutes), mindfulness training on breathing, mindful movement.
4	Breathing and stretching exercise, training in breath space and being in the present moment, visual or auditory mindfulness training.
5	Seated meditation, mindful walking, acceptance and allowance, seated meditation, awareness of breath and body.
6	Awareness of how to respond to thoughts, emotions, and bodily sensations, training in paying attention to the mind, positive and negative thoughts, pleasant or unpleasant thoughts, writing daily positive and negative experiences without judgment.
7	Training in allowing positive and negative thoughts to enter the mind and easily releasing them without judgment or deep attention.
8	Seated meditation, awareness of breath, body, sounds, thoughts, and emotions, body scan meditation.
9	Application of mindfulness techniques in various life domains, such as mindful walking, mindful music, mindful eating, etc., and generalization to the entire life process.
10	Summarizing the training sessions, receiving feedback from group members on the principles taught, recommending daily planning for activities, administering the post-test, and coordinating for the follow-up period.

**Table 2.** Summary of SSCT Sessions

Sessions	Content
1	Introduction, familiarization, and setting practical and applicable goals for the training course; introduction to the concept, roles, and dimensions of feeling threatened, worry, and anxiety; group discussion on feelings of threat, worry, and anxiety based on individual lived experiences; introduction to coping strategies for feelings of threat, worry, and anxiety, particularly spiritual coping; training in mindfulness and meditation techniques.
2	Training and practice in religious coping (strengthening a secure connection with God); training and practice in spiritual coping focused on strategies for feeling unity with others, nature, and expanding the deeper meaning of life.
3	Introduction to and familiarization with the concepts of enthusiasm and tranquility; training in relaxation strategies and their functions; practice in self-compassion training.
4	Training in enthusiasm for life; training in positive thinking and optimism.
5	Introduction to and familiarization with the concept of spiritual and psychological empowerment; training in meditation strategies and their functions; training in strengthening faith in divine wisdom and providence.
6	Training in going into nature and establishing a connection with nature; training in social modeling from successful patients with a sense of efficacy, resilience, and hope.
7	Training in the need to enhance spiritual and social support; training in strategies for forming group support with other patients; training in gratitude.
8	Training in interpersonal skills to enhance social support networks; training in loving-kindness and love for God.
9	Training in the need to enhance self-awareness, self-regulation, and compassion to prevent relapse into previous states; training in strategies for self-reflection practice; training in self-regulation practice.
10	Training in practicing compassion for self and others through role-taking; training in practicing self-forgiveness and forgiveness of others; conclusion and administration of the post-test.

### 3.3. Statistical Analysis

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### 4. Results

The demographic profiles of the participant groups were compared at baseline. The mean age was 45.5 years ( $\pm 7.2$ ) for the MBCT group, 46.8 years ( $\pm 6.9$ ) for the SSCT group, and 48.2 years ( $\pm 6.5$ ) for the control group. For duration of kidney disease and hemodialysis, the mean years were 4.2 ( $\pm 1.8$ ) for the MBCT group, 4.5 ( $\pm 1.9$ ) for the SSCT group, and 4.8 ( $\pm 1.7$ ) for the control group. Gender distribution included 11 males (55%) and 9 females (45%) in both the MBCT and SSCT groups, and 8 males (40%) and 12 females (60%) in the control group. Statistical analyses revealed no significant differences between groups at baseline for age ( $P = 0.445$ ), duration of kidney disease ( $P = 0.515$ ), or gender ( $P = 0.479$ ), ensuring comparable groups.

Table 3 displays the means and standard deviations for the life suffering components, stratified by the three study groups and across the three assessment time points: pre-intervention, post-intervention, and follow-up. The mean scores for the life suffering components revealed that both the SSCT and MBCT groups exhibited greater

changes at the post-intervention and follow-up assessments compared to the control group. Prior to conducting the repeated measures ANOVA, the Shapiro-Wilk test demonstrated a normal distribution of data for the life suffering components, and Levene's test confirmed homogeneity of variance across the study groups for the outcome variable. Box's M test indicated homogeneity of variance-covariance matrices for the life suffering components. Mauchly's test yielded non-significant results for physical and psychological suffering, indicating adherence to the sphericity assumption; however, it was significant for existential suffering, suggesting a violation of sphericity for this dimension. Consequently, Greenhouse-Geisser corrections were applied to the degrees of freedom for time and group-by-time interaction effects for existential suffering to adjust for this violation, ensuring accurate F-tests and reliable interpretation of significant effects.

Table 4 details the results of repeated-measures ANOVA, which investigated the effects of time, group, and their interaction on physical, psychological, and existential suffering. For physical suffering, statistically significant main effects were found for both time ( $F = 343.65$ ,  $P < 0.001$ ,  $\eta^2 = 0.85$ ) and group ( $F = 159.76$ ,  $P < 0.001$ ,  $\eta^2 = 0.85$ ), alongside a significant time  $\times$  group interaction ( $F = 75.76$ ,  $P < 0.001$ ,  $\eta^2 = 0.73$ ). Likewise, significant main effects were observed for time ( $F = 311.78$ ,  $P < 0.001$ ,  $\eta^2 = 0.84$ ) and group ( $F = 69.87$ ,  $P < 0.001$ ,  $\eta^2 = 0.71$ ) in psychological suffering, with a corresponding significant interaction effect ( $F = 102.25$ ,  $P < 0.001$ ,  $\eta^2 = 0.78$ ). For existential suffering, significant main effects emerged for time ( $F = 213.47$ ,  $P < 0.001$ ,  $\eta^2 = 0.79$ ) and group ( $F = 33.58$ ,  $P < 0.001$ ,  $\eta^2 = 0.54$ ), as well as a significant interaction ( $F = 48.65$ ,  $P < 0.001$ ,  $\eta^2 = 0.63$ ). Collectively, these findings demonstrate significant changes in all three dimensions of suffering over time and

**Table 3.** Means and SD of Research Variables

Variables	Phases	SSCT group	MBCT group	Control group
		Mean ± SD	Mean ± SD	Mean ± SD
Physical suffering	Pre-test	24.50±1.73	24.55±1.96	25.45±1.47
	Post-test	14.30±2.23	16.75±2.17	24.55±1.67
	Follow-up	14.25±1.83	15.95±2.16	25.25±1.37
Psychological suffering	Pre-test	42.25±2.05	42.10±2.02	42.08±2.38
	Post-test	34.10±3.52	33.90±3.48	42.80±1.85
	Follow-up	25.35±4.40	31.90±2.90	42.60±1.82
Existential suffering	Pre-test	23.45±2.21	23.60±1.82	22.25±2.36
	Post-test	12.70±2.99	13.70±2.99	22.10±1.48
	Follow-up	13.05±4.31	12.90±3.97	21.80±3.02

**Table 4.** Repeated-measures ANOVA Results

Variables	Source	SS	df	MS	F	P	η <sup>2</sup>
Physical suffering	Time	1600.30	2	800.15	343.65	0.001	0.85
	Group × Time	705.60	4	176.40	75.76	0.001	0.73
	Group	1854.40	2	927.20	159.76	0.001	0.85
Psychological suffering	Time	244.43	2	1222.22	311.78	0.001	0.84
	Group × Time	1603.33	4	400.83	102.25	0.001	0.78
	Group	2348.23	2	1174.12	69.87	0.001	0.71
Existential suffering	Time	1910.01	1.56	1223.94	213.47	0.001	0.79
	Group × Time	870.66	3.12	278.96	48.65	0.001	0.63
	Group	1130.68	2	565.34	33.58	0.001	0.54

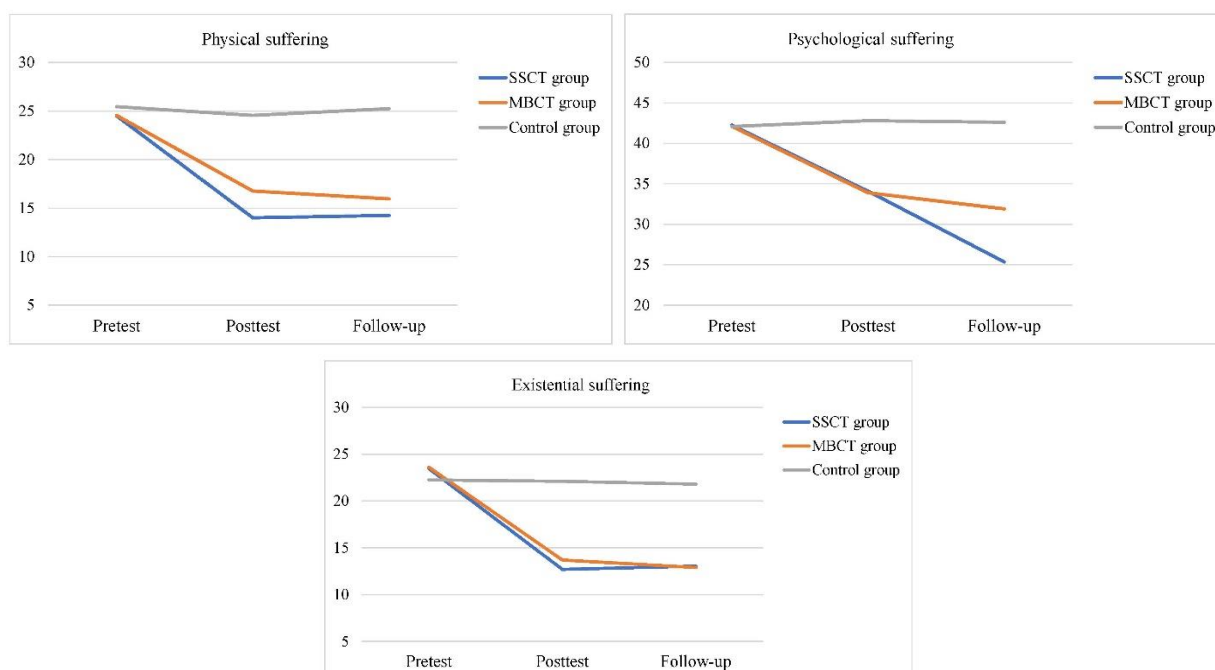
between groups. The significant interaction effects suggest that the trajectory of change across time varied significantly among the groups.

To ascertain pairwise differences among the groups, Bonferroni post-hoc analyses were performed. The outcomes of these analyses for the life suffering components have

been detailed in Table 5. The findings revealed statistically significant differences between both the SSCT and MBCT groups and the control group across all three dimensions of physical, psychological, and existential suffering ( $P<0.001$ ). Notably, significant differences were also observed between the SSCT and MBCT groups

**Table 5.** Bonferroni Post-hoc Test for Paired Comparison of the Research Variables

Variables	Groups	Mean difference	SE	P
Physical suffering	SSCT - MBCT	-1.40	0.44	0.001
	SSCT - Control	-7.40	0.44	0.007
	MBCT - Control	-6.00	0.44	0.001
Psychological suffering	SSCT - MBCT	-2.18	0.75	0.015
	SSCT - Control	-8.52	0.75	0.001
	MBCT - Control	-6.33	0.75	0.001
Existential suffering	SSCT - MBCT	0.01	0.75	0.999
	SSCT - Control	-5.32	0.75	0.001
	MBCT - Control	-5.31	0.75	0.001



**Figure 1.** Change in suffering components over time by group.

in terms of effectiveness on physical and psychological suffering, with SSCT demonstrating superior efficacy ( $P < 0.05$ ). However, no significant difference was identified between the SSCT and MBCT groups regarding their impact on existential suffering, indicating comparable effectiveness in this dimension (Figure 1).

## 5. Discussion

This research sought to determine the relative effectiveness of MBCT and SSCT in alleviating the diverse components of suffering among hemodialysis patients. Findings revealed comparable efficacy of MBCT and SSCT in alleviating existential suffering among hemodialysis patients. However, SSCT demonstrated superior effectiveness in reducing physical and psychological suffering compared to MBCT. A comprehensive literature review did not identify any studies directly comparing the efficacy of MBCT and integrated SSCT on the specific components of life suffering in this patient population. Consequently, the discussion of the present study's results is limited to comparisons with studies that share relevant findings. In this regard, Sohn et al.<sup>17</sup> investigated the effectiveness of Mindfulness-Based Cognitive Behavioral Therapy on depression, anxiety, and stress, all of which are closely associated with suffering, in hemodialysis patients. Alhawatmeh et al.<sup>25</sup> explored the impact of mindfulness-based meditation therapy on perceived stress, a significant contributor to life suffering. Furthermore, Razzera et al.<sup>14</sup> demonstrated the efficacy of MBCT in improving physiological indicators such as blood pressure, heart rate, and respiratory rate, which are pertinent to the experience of physical suffering.

The efficacy of MBCT can be explained by the reality that hemodialysis patients, confronted with the challenges inherent in kidney disease and its subsequent treatment, progressively experience a range of negative cognitions and emotions, including anxiety, depression, and stress.<sup>25</sup> These detrimental cognitive and emotional patterns, over time, impair the cognitive and behavioral functioning of these individuals. Attempts to avoid these distressing experiences, driven by a deficit in cognitive and mindfulness-based coping strategies, further aggravate their overall state.<sup>13</sup> This exacerbation inevitably intensifies the perceived suffering of these patients. Participation in MBCT, which fosters a non-judgmental, present-moment awareness, coupled with the development of self-soothing techniques at both the somatic and psychological levels, empowers patients to effectively manage negative cognitions and emotions, thereby facilitating a gradual reduction in life suffering across physical, psychological, and existential domains.

SSCT, tailored to the specific needs and theoretical frameworks relevant to hemodialysis patients, demonstrated efficacy in attenuating physical, psychological, and existential suffering in this study. This finding aligns with

the results reported by Durmuş et al.,<sup>22</sup> who observed the effectiveness of spiritual interventions in mitigating depression and anxiety—conditions intrinsically linked to physical, psychological, and existential distress—and with Hosseini et al.,<sup>26</sup> who found that spirituality-based counseling effectively reduced fear of death, a significant component of existential suffering. The efficacy of SSCT in reducing these dimensions of suffering not only highlights a distinct facet of the therapeutic needs of kidney patients, beyond conventional cognitive, behavioral, and belief-oriented interventions, but also validates the existing body of literature on self-care, particularly spiritual self-care.<sup>20</sup>

In the present study, SSCT incorporated a multifaceted approach, simultaneously addressing coping mechanisms for feelings of threat, worry, and anxiety, with a particular emphasis on spiritual coping. This included religious coping practices (strengthening a secure connection with God), spiritual coping strategies focused on fostering unity with others and nature, expanding the perceived meaning of life, and cultivating enthusiasm and tranquility. Furthermore, the training integrated relaxation techniques alongside positive thinking and self-management skills, leveraging spiritual and social support. This comprehensive approach facilitated the development of psychological and spiritual empowerment, enabling patients to manage diverse emotional experiences at both somatic and psychological levels.<sup>22</sup>

The mechanisms by which SSCT exerts its effects likely involve several interconnected psychological and spiritual processes. The emphasis on spiritual coping may provide patients with a sense of meaning and purpose, offering a framework to understand and accept their condition, which can reduce existential suffering. Strengthening a connection with a higher power or engaging in religious practices can foster feelings of hope, comfort, and support, mitigating anxiety and depression (psychological suffering). Moreover, practices like relaxation, mindfulness, and self-compassion can directly alleviate physical symptoms by reducing stress-related physiological arousal. The cultivation of social support and a sense of unity with others can buffer against the negative impacts of chronic illness, enhancing overall well-being. By addressing these multiple dimensions, SSCT holistically supports patients in coping with the challenges of hemodialysis, leading to a reduction in perceived suffering. Concurrently, it equipped them with spiritually-grounded strategies to confront existential fears and anxieties, ultimately contributing to the reduction of life suffering across multiple dimensions.

Further research is warranted to elucidate the mechanisms underlying the superior efficacy of SSCT compared to MBCT in diminishing physical and psychological suffering. Nonetheless, it is hypothesized that the enhanced effectiveness of SSCT may be attributed to the broader scope and diversity of therapeutic and educational objectives

within the integrated spiritual self-care intervention utilized in this study. Specifically, the SSCT protocol, in contrast to MBCT, concurrently addressed a more extensive array of individual techniques and skills.

It is plausible that specific components within SSCT contributed differentially to its effectiveness. For instance, religious coping strategies, such as strengthening the connection with God, may provide a unique source of comfort and resilience, particularly salient in this population, potentially leading to a greater reduction in psychological distress. Furthermore, the emphasis on social support and fostering a sense of community within SSCT might more effectively buffer the impact of chronic illness-related stressors compared to the individualistic focus of MBCT. The cultivation of kindness, compassion, and enthusiasm towards self and others may also play a role in enhancing emotional regulation and promoting a more positive outlook, contributing to the reduction in both physical and psychological suffering.

In contrast, while MBCT effectively targets anxiety and stress, which are significant contributors to existential suffering, SSCT addresses these factors and incorporates additional dimensions that appear to offer a more comprehensive approach to managing the multifaceted suffering experienced by hemodialysis patients. This comprehensive approach within SSCT, encompassing relaxation, mindfulness, and the augmentation of spiritual and religious resources, likely contributed to the observed greater reduction in physical and psychological distress. Conversely, the equivalent efficacy of SSCT and MBCT in mitigating existential suffering might stem from the significant role of anxiety and stress in this domain among hemodialysis patients. In this context, MBCT, alongside SSCT, effectively alleviated existential suffering by targeting these shared underlying factors.

While this study offers valuable insights into the management of suffering in hemodialysis patients, several inherent limitations warrant careful consideration. Firstly, the participant sample was exclusively drawn from a specific sociocultural and religious context—Isfahan, Iran. This specificity may limit the generalizability of our findings to individuals with different stages of kidney disease, those with other chronic physical conditions, or populations in secular settings. Secondly, the reliance on self-report questionnaires, a common method in psychological research, introduces the potential for social desirability bias and may not fully capture the depth and complexity of participants' lived experiences of suffering.

Future research should investigate the long-term effects of MBCT and SSCT on crucial outcomes such as patient adherence to treatment, overall quality of life trajectories, and healthcare resource utilization. Examining the cost-effectiveness of these interventions would also provide valuable data for healthcare providers and policy makers. Furthermore, exploring the optimal integration of

psychological and spiritual interventions within standard medical care, potentially through interdisciplinary collaboration among psychologists, spiritual care specialists, nurses, and physicians, could facilitate more holistic care for hemodialysis patients.

## 6. Conclusion

This study provides robust evidence for the efficacy of both MBCT and SSCT in alleviating physical, psychological, and existential suffering in hemodialysis patients. Both interventions yielded significant improvements compared to the control group, affirming their therapeutic utility. Notably, SSCT demonstrated superior efficacy in reducing physical and psychological suffering, likely due to its emphasis on somatic and emotional regulation. This suggests that SSCT may be particularly beneficial for addressing the physical discomfort and emotional distress frequently experienced by individuals undergoing hemodialysis. Conversely, MBCT and SSCT showed comparable effectiveness in mitigating existential suffering, indicating potentially shared underlying mechanisms in fostering meaning-making and acceptance. These findings underscore the importance of tailoring intervention strategies, integrating both spiritual and cognitive therapeutic modalities to comprehensively address the multidimensional nature of suffering in chronic illness. By directly comparing MBCT and SSCT, this study contributes novel insights to the literature regarding their differential impacts on patient outcomes. Clinically, the incorporation of SSCT and MBCT into routine hemodialysis care has the potential to enhance patient well-being and overall quality of life. These results strongly encourage clinicians and policy makers to adopt integrated therapeutic strategies to ensure comprehensive support for the complex needs of hemodialysis patients, ultimately advancing holistic care within chronic disease management frameworks.

### Research Highlights

#### What Is Already Known?

Hemodialysis patients experience significant suffering across psychological and existential domains, negatively impacting their quality of life. Interventions like MBCT and spiritual approaches have shown effectiveness in addressing aspects of suffering, such as depression and anxiety, in hemodialysis patients.

#### What Does This Study Add?

This study provides a direct comparison of MBCT and SSCT in reducing physical, psychological, and existential suffering in hemodialysis patients. It demonstrates that SSCT is more effective than MBCT in reducing physical and psychological suffering, while both are equally effective in addressing existential suffering.

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### Author Contributions

ASM: Conceptualized study, designed methodology, led interventions, analyzed data, drafted manuscript. MG: Supervised study, reviewed analysis, revised manuscript. ZY: Assisted in data collection, literature review, and manuscript editing. All authors approved the final manuscript.

### Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

### Ethical Approval

This research received approval from the Ethics Committee of the Islamic Azad University, Isfahan (Khorasgan) Branch, under the ethics code IR.IAU.KHUISF.REC.1403.214.

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