Comparing the Effectiveness of Mindfulness-Based Cognitive Behavioral Group Therapy and Psychodrama on Distress Tolerance and Anxiety Sensitivity in Bereaved Survivors of Deceased COVID-19 Patients

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ABSTRACT

The objective of this study was to compare the effectiveness of mindfulness-based cognitive behavioral group therapy and psychodrama on distress tolerance and anxiety sensitivity among bereaved survivors of patients who died due to COVID-19. This applied, quasi-experimental study employed a pretest–posttest control group design with a two-month follow-up. The population consisted of bereaved survivors of deceased COVID-19 patients in Shiraz, Iran. Thirty-six eligible participants were selected through purposive sampling and randomly assigned to a mindfulness-based cognitive behavioral therapy group, a psychodrama therapy group, or a control group (12 participants per group). The interventions were delivered in group format over eight and ten 90-minute sessions respectively. Data were collected at pretest, posttest, and follow-up using the Distress Tolerance Scale and the Anxiety Sensitivity Index-Revised. Statistical analysis was conducted using repeated-measures ANOVA and Bonferroni post-hoc tests in SPSS-22. Repeated-measures ANOVA revealed significant main effects of time and significant interaction effects between time and group for all components of distress tolerance and anxiety sensitivity (p < .001). Between-group comparisons indicated significant differences across all outcome variables (p < .001). Bonferroni post-hoc analyses demonstrated that both intervention groups significantly outperformed the control group, while the psychodrama group showed significantly greater improvement than the mindfulness-based cognitive behavioral therapy group on all components (p < .05). Treatment gains were maintained at follow-up. Both mindfulness-based cognitive behavioral therapy and psychodrama effectively enhanced distress tolerance and reduced anxiety sensitivity in bereaved COVID-19 survivors, with psychodrama producing superior and more durable outcomes.
Keywords: COVID-19 Bereavement; Distress Tolerance; Anxiety Sensitivity; Mindfulness-Based Cognitive Behavioral Therapy; Psychodrama

1. Introduction

The COVID-19 pandemic constituted one of the most disruptive global crises of the twenty-first century, exerting profound psychological, social, and emotional consequences across populations worldwide. Beyond the immediate medical threat, the pandemic produced extensive secondary mental health burdens, particularly among individuals who experienced the loss of close family members due to the virus. Bereaved survivors of deceased COVID-19 patients represent a uniquely vulnerable group, exposed not only to traumatic grief but also to chronic uncertainty, social isolation, unresolved fear of illness, and existential distress (Giacomucci, Marquit, Walsh, et al., 2022; Zamani & Zolfaghari, 2022). Distress tolerance refers to an individual's perceived and actual capacity to withstand aversive emotional and physiological states without engaging in maladaptive behaviors. High distress tolerance enables individuals to remain engaged with challenging emotional experiences, while low distress tolerance is associated with experiential avoidance, emotional dysregulation, and psychopathology. Extensive research demonstrates that impaired distress tolerance is strongly associated with mood disorders, trauma-related symptoms, substance use, and anxiety pathology (Akbari & Khalatbari, 2025; Elhai et al., 2018; Timajchi et al., 2025; Zhong et al., 2025). Bereavement following COVID-19 loss introduces persistent uncertainty, unresolved grief, and chronic stress that overwhelm regulatory capacities, rendering distress tolerance a critical therapeutic target in this population.

Closely intertwined with distress tolerance is anxiety sensitivity, defined as the fear of anxiety-related sensations arising from beliefs that these sensations have harmful physical, psychological, or social consequences. Anxiety sensitivity amplifies emotional responses to stress and serves as a transdiagnostic risk factor for anxiety disorders, depression, and trauma-related conditions. Heightened anxiety sensitivity exacerbates fear responses, fuels avoidance, and perpetuates cycles of hypervigilance and emotional dysregulation. In the context of COVID-19 bereavement, repeated exposure to illness cues, hospital environments, and death-related uncertainty significantly intensifies anxiety sensitivity, further impairing emotional functioning and recovery (Elhai et al., 2018; Karimi et al., 2023).

Contemporary models of emotional resilience emphasize the centrality of mindfulness and experiential engagement in strengthening both distress tolerance and anxiety sensitivity

regulation. Mindfulness, conceptualized as nonjudgmental present-moment awareness, has emerged as a robust protective factor that mitigates emotional reactivity and enhances adaptive coping (Akbari & Khalatbari, 2025; Zamani & Zolfaghari, 2022; Zhong et al., 2025). Mindfulness-based cognitive behavioral interventions integrate cognitive restructuring with attentional training, acceptance, and emotion regulation skills, thereby addressing both cognitive distortions and experiential avoidance processes. Empirical evidence consistently supports the efficacy of mindfulness-based cognitive therapy in reducing anxiety sensitivity and improving distress tolerance across diverse clinical populations (Dizaj Khalili et al., 2023; Fortuna et al., 2023; Karimi et al., 2023; Sadeghi et al., 2023; Timajchi et al., 2025; Zareei et al., 2024).

Parallel to mindfulness-based approaches, psychodrama has gained increasing empirical attention as a powerful experiential group intervention for trauma, emotional regulation, and interpersonal healing. Psychodrama utilizes structured role-play, enactment, and group processes to facilitate emotional expression, insight, and corrective emotional experiences. Through embodied engagement, participants access emotional material that may remain inaccessible through purely verbal therapies, fostering integration of cognitive, emotional, and somatic processes. Psychodrama has demonstrated significant effectiveness in treating post-traumatic stress disorder, depression, anxiety, emotion dysregulation, and interpersonal dysfunction (Dayton, 2015; Dejestan & Fahimi, 2022; Esnaasharan et al., 2018; Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022; Giacomucci, Marquit, Walsh, et al., 2022; Norouzi et al., 2024; Saifulah et al., 2024; Sasono et al., 2025; Yeşil Örnek & Kırlangıç Şimşek, 2023; Zayman & Simsek, 2023).

Trauma-focused psychodrama models emphasize the importance of group-based experiential processing for restoring emotional regulation, spontaneity, and post-traumatic growth (Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022; Giacomucci, Marquit, Walsh, et al., 2022). Neuropsychodrama frameworks further highlight how experiential group processes facilitate neural integration, emotional regulation, and relational healing, particularly in trauma-exposed individuals (Dayton, 2015). Recent mixed-methods and controlled studies confirm psychodrama's effectiveness in reducing PTSD symptoms, depression, social isolation, and emotional dysregulation, including during the COVID-19

pandemic (Giacomucci, Marquit, & Miller Walsh, 2022; Giacomucci, Marquit, Walsh, et al., 2022).

Despite the expanding evidence base supporting both mindfulness-based cognitive behavioral therapy and psychodrama, limited research has directly compared these two experiential modalities on key emotional resilience constructs such as distress tolerance and anxiety sensitivity, particularly among bereaved COVID-19 survivors. Existing investigations demonstrate independent effectiveness of mindfulness interventions in improving distress tolerance and reducing anxiety sensitivity (Akbari & Khalatbari, 2025; Dizaj Khalili et al., 2023; Karimi et al., 2023; Timajchi et al., 2025; Zhong et al., 2025), as well as strong therapeutic effects of psychodrama on emotional regulation, anxiety reduction, trauma recovery, and distress tolerance (Dejestan & Fahimi, 2022; Esnaasharan et al., 2018; Norouzi et al., 2024; Saifulah et al., 2024; Sasono et al., 2025; Yeşil Örnek & Kırlangıç Şimşek, 2023; Zayman & Simsek, 2023). However, comparative evaluations remain scarce.

This gap is particularly salient in the context of pandemic-related bereavement, where grief is compounded by sudden loss, disrupted mourning rituals, social isolation, and ongoing existential threat. Integrating experiential, relational, and cognitive-emotional processing is crucial for restoring psychological stability in this population. Mindfulness-based cognitive behavioral therapy offers structured cognitive-emotional regulation, attentional control, and acceptance-based coping, while psychodrama provides embodied emotional processing, relational repair, and experiential insight. Both modalities engage distinct but complementary therapeutic mechanisms, warranting systematic comparative investigation.

Furthermore, emerging evidence underscores the mediating role of mindfulness and perceived social support in enhancing distress tolerance and psychological hardiness, particularly among young adults and vulnerable populations (Akbari & Khalatbari, 2025). Integrative therapeutic approaches that combine cognitive restructuring with experiential engagement and group-based emotional processing may therefore produce superior outcomes in populations suffering from complex grief and trauma-related distress.

Within the Iranian sociocultural context, grief experiences following COVID-19 loss have been shaped by strong familial bonds, collective mourning traditions, and religious frameworks. Interventions that honor emotional expression, interpersonal connection, and meaning-making processes are especially critical. Psychodrama's emphasis on group cohesion, relational exploration, and symbolic enactment aligns closely with these cultural values, while mindfulness-based cognitive behavioral therapy offers universally applicable cognitive-emotional regulation strategies.

Collectively, the literature establishes distress tolerance and anxiety sensitivity as central therapeutic targets in post-traumatic and grief-related psychopathology and identifies mindfulness-based cognitive behavioral therapy and psychodrama as two empirically supported interventions capable of addressing these constructs through distinct but potentially synergistic mechanisms (Akbari & Khalatbari, 2025; Dejestan & Fahimi, 2022; Dizaj Khalili et al., 2023; Elhai et al., 2018; Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022; Giacomucci, Marquit, Walsh, et al., 2022; Karimi et al., 2023; Timajchi et al., 2025; Zareei et al., 2024; Zhong et al., 2025). Nevertheless, no controlled study to date has systematically compared these two modalities on distress tolerance and anxiety sensitivity among bereaved survivors of COVID-19 patients.

Therefore, the aim of the present study was to compare the effectiveness of mindfulness-based cognitive behavioral group therapy and psychodrama on distress tolerance and anxiety sensitivity in bereaved survivors of deceased COVID-19 patients.

2. Methods and Materials

2.1. Study Design and Participants

The present study was conducted using an applied research approach and a quantitative, quasi-experimental design with a pretest–posttest control group and a two-month follow-up phase. The target population consisted of all bereaved survivors of deceased COVID-19 patients in the city of Shiraz in the year 2024, who had lost at least one family member to COVID-19 during the pandemic years of 2021, 2022, or 2023. Participants were selected through purposive sampling based on structured clinical interviews to ensure eligibility. The final sample included thirty-six individuals who met the inclusion criteria, which were determined in accordance with recommendations for experimental research suggesting a minimum of twelve participants per group. After baseline assessment, participants were randomly assigned to three groups: a mindfulness-based cognitive behavioral therapy group with twelve participants, a psychodrama therapy group with twelve participants, and a control group with twelve

participants. The two intervention groups received their respective therapeutic programs, while the control group was placed on a waiting list and did not receive any intervention during the study period. Assessments were conducted at three stages including pretest, posttest immediately after completion of interventions, and a follow-up assessment two months later.

Inclusion criteria required that participants had not been diagnosed with severe psychiatric disorders or personality disorders that could interfere with treatment, as confirmed by DSM-based clinical interviews; had experienced the death of at least one close family member due to COVID-19; had no history of substance or alcohol abuse and were not receiving psychiatric medications; were willing to participate voluntarily and share personal experiences; were not involved in any concurrent psychological intervention during the study; had completed the informed consent form; possessed at least a high school diploma; and were residents of Shiraz. Exclusion criteria included withdrawal from participation, absence from two consecutive or three non-consecutive treatment sessions without valid justification, non-compliance with therapeutic tasks, migration from the study location, and initiation of pharmacological treatment for any psychiatric disorder during the course of the research.

2.2. Measures

Anxiety sensitivity was measured using the revised version of the Anxiety Sensitivity Index developed by Taylor and Cox in 1998. This instrument consists of 36 items designed to assess fear of anxiety-related sensations across four dimensions: fear of cardiovascular and gastrointestinal symptoms, fear of respiratory symptoms, fear of observable anxiety reactions in social contexts, and fear of cognitive dyscontrol. Items are rated on a five-point Likert scale ranging from 0 (very little) to 4 (very much), yielding a total score between 0 and 144, with higher scores indicating greater anxiety sensitivity. The scale contains no reverse-scored items. Psychometric evaluation has demonstrated excellent reliability and validity, with Cronbach's alpha coefficients reported between 0.86 and 0.91 for subscales and 0.93 for the total scale. Test–retest reliability and split-half reliability coefficients have been reported as 0.95 and 0.97, respectively. The instrument has been standardized in Iran, with confirmatory factor analysis supporting the four-factor structure and explaining over 58 percent of the total variance. Concurrent validity with the Symptom Checklist-

90-Revised was reported at 0.56, indicating satisfactory criterion validity.

Distress tolerance was assessed using the Distress Tolerance Scale developed by Simons and Gaher in 2005. This self-report measure contains 15 items assessing emotional distress tolerance across four dimensions: tolerance, absorption, appraisal, and regulation. Responses are recorded on a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree), with item six reverse-scored. Higher total scores indicate greater distress tolerance. The overall distress tolerance score is calculated by summing all items, and subscale scores are computed by summing relevant items. Iranian validation studies have reported acceptable internal consistency for the total scale (α = 0.71) and moderate reliability coefficients for the subscales, supporting the scale's suitability for psychological research in Iranian populations.

2.3. Interventions

In the present study, the mindfulness-based cognitive behavioral therapy program was implemented according to the protocol developed by Kabat-Zinn and colleagues (1992) and was delivered in eight structured group sessions, each lasting 90 minutes. The intervention began with psychoeducation on depressive and anxiety symptoms and the conceptual foundations of mindfulness, emphasizing the identification of automatic pilot functioning in daily life and cultivating nonjudgmental awareness of thoughts, emotions, and behaviors through body scan practices. Subsequent sessions introduced behavioral activation through pleasurable activity scheduling, breathing meditation, and deep mindfulness exercises designed to anchor attention in the present moment. Participants were trained in mindful awareness of bodily sensations during breathing, particularly in relation to discomfort and distress, and were guided to remain fully present with internal experiences such as fear, attachment, aversion, boredom, worry, lack of motivation, and existential hopelessness commonly associated with anxiety and depression. Core therapeutic components included cultivating acceptance without judgment, reducing experiential avoidance, and fostering cognitive defusion by reinforcing the principle that thoughts are not facts but transient mental events. Later sessions focused on self-care strategies, development of individualized activity plans to counter depressive and anxious withdrawal, and consolidation of mindfulness skills for daily life application. The final session emphasized relapse prevention through

reinforcing present-moment awareness, adaptive activity planning, and generalized use of mindfulness techniques for managing negative automatic thoughts and preventing symptom recurrence.

The psychodrama intervention was delivered across ten group sessions, each lasting 90 minutes, and followed a structured experiential therapeutic process consisting of warm-up, enactment, and sharing phases. The program began with group formation, establishment of confidentiality, clarification of group goals, and psychoeducation regarding distress tolerance and anxiety sensitivity, alongside introduction of fundamental psychodramatic techniques. Progressive sessions incorporated increasingly complex enactment methods, including the magic shop technique, role reversal, mirroring, doubling, empty chair, soliloquy, and guided scene construction under the director's facilitation. Warm-up phases employed physical movement, rhythmic exercises, dance, pantomime, and play to enhance emotional readiness and spontaneity. Participants engaged in dramatization of personal experiences and interpersonal conflicts through protagonist-centered enactments, enabling emotional catharsis, cognitive insight, and corrective relational experiences. Structured feedback and group sharing were consistently integrated to promote emotional processing and social learning. Advanced sessions emphasized strengthening authentic self-connection, building intimacy with others, and transferring newly acquired emotional and relational skills into real-life contexts. The final session involved comprehensive reflection on personal growth, emotional experiences across sessions, reinforcement of individual therapeutic goals, expression of group cohesion, and formal closure of the therapeutic process.

2.4. Data analysis

After data collection at the pretest, posttest, and follow-up stages, the dataset was analyzed using descriptive and inferential statistical methods. Descriptive statistics included measures of central tendency and dispersion such as means, standard deviations, and standard errors. Prior to inferential analysis, statistical assumptions were examined, including normality of distribution, homogeneity of error variances, and independence of observations. The primary inferential analysis employed repeated-measures analysis of variance, with time (pretest, posttest, follow-up) as the within-subject factor and group membership (mindfulness-based cognitive behavioral therapy, psychodrama therapy, control) as the between-subject factor. To determine specific group differences and conduct pairwise comparisons, Bonferroni post-hoc tests were applied. All statistical analyses were performed using SPSS software, version 22.

3. Findings and Results

The demographic characteristics of the participants indicated that each of the three groups, psychodrama, mindfulness-based cognitive behavioral therapy, and control, consisted of twelve individuals. In the psychodrama group, five participants (41.7%) were between 20 and 30 years of age, six participants (50.0%) were between 31 and 40 years, and one participant (8.3%) was between 41 and 50 years. In the mindfulness-based cognitive behavioral therapy group, six participants (50.0%) were aged 20–30 years, four participants (33.3%) were aged 31–40 years, and two participants (16.7%) were aged 41–50 years. In the control group, seven participants (58.3%) were between 20 and 30 years, three participants (25.0%) were between 31 and 40 years, and two participants (16.7%) were between 41 and 50 years. Regarding educational attainment, in the psychodrama group four participants (33.3%) held a high school diploma, six participants (50.0%) held a bachelor's degree, and two participants (16.7%) held a master's degree. In the mindfulness-based cognitive behavioral therapy group, five participants (41.7%) had a diploma, five participants (41.7%) had a bachelor's degree, and two participants (16.7%) had a master's degree. In the control group, four participants (33.3%) held a diploma, seven participants (58.3%) held a bachelor's degree, and one participant (8.3%) held a master's degree. Overall, the three groups were comparable in terms of age distribution and educational level, indicating adequate baseline demographic homogeneity across the experimental and control conditions.

Table 1

Descriptive Statistics of Distress Tolerance and Anxiety Sensitivity Scores Across Measurement Phases by Group

Group	Variable	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Follow-up Mean	Follow-up SD
Control	Distress Tolerance – Tolerance	5.08	2.466	5.47	2.327	5.25	2.340
	Distress Tolerance – Absorption	6.08	2.314	6.67	2.146	6.92	2.065
	Distress Tolerance – Appraisal	13.50	3.425	13.44	3.240	13.08	3.450
	Distress Tolerance – Regulation	6.42	1.975	5.92	2.353	6.33	2.674
	Total Distress Tolerance	31.08	5.054	31.49	4.821	31.58	6.501
	Fear of Cardiovascular/GI Symptoms	41.42	4.412	41.08	3.599	41.25	3.706
	Fear of Respiratory Symptoms	24.33	6.050	23.92	5.775	24.42	5.744
	Fear of Observable Anxiety	24.94	3.412	24.18	3.398	24.46	3.108
	Fear of Cognitive Dyscontrol	21.08	2.906	20.75	2.958	21.17	2.918
	Total Anxiety Sensitivity	111.78	8.470	109.93	8.687	111.29	8.385
Mindfulness-CBT	Distress Tolerance – Tolerance	5.92	2.503	9.17	3.407	8.72	3.185
	Distress Tolerance – Absorption	7.50	2.153	10.55	2.311	10.20	2.261
	Distress Tolerance – Appraisal	14.33	3.676	19.67	5.348	19.12	5.300
	Distress Tolerance – Regulation	6.67	2.146	9.75	2.340	9.78	2.203
	Total Distress Tolerance	34.42	5.384	49.13	8.474	47.82	8.221
	Fear of Cardiovascular/GI Symptoms	40.90	3.451	33.92	6.434	33.57	6.487
	Fear of Respiratory Symptoms	22.83	5.458	16.33	5.245	16.21	4.915
	Fear of Observable Anxiety	24.71	3.000	16.92	4.081	17.25	3.709
	Fear of Cognitive Dyscontrol	20.08	3.476	16.42	3.232	16.75	3.720
	Total Anxiety Sensitivity	108.53	10.509	83.59	10.418	83.78	10.367
Psychodrama	Distress Tolerance – Tolerance	6.50	2.576	12.67	2.387	12.04	2.298
	Distress Tolerance – Absorption	6.92	2.314	13.75	1.055	13.25	1.603
	Distress Tolerance – Appraisal	15.42	3.679	25.17	4.086	24.42	4.122
	Distress Tolerance – Regulation	7.17	2.588	12.83	1.850	12.83	2.406
	Total Distress Tolerance	36.00	4.243	64.42	5.452	62.54	5.714
	Fear of Cardiovascular/GI Symptoms	41.57	3.786	25.87	7.390	25.53	7.505
	Fear of Respiratory Symptoms	22.33	6.638	9.75	1.485	9.25	2.179
	Fear of Observable Anxiety	23.86	2.969	12.79	4.374	13.02	4.409
	Fear of Cognitive Dyscontrol	19.17	2.657	11.67	3.725	11.92	4.166
	Total Anxiety Sensitivity	106.93	9.411	60.07	8.965	59.72	10.058

Table 1 presents the descriptive statistics of distress tolerance and anxiety sensitivity scores across the three measurement phases for the control, mindfulness-based cognitive behavioral therapy, and psychodrama groups. At baseline, the three groups showed relatively comparable levels of both distress tolerance and anxiety sensitivity. Across posttest and follow-up phases, the control group demonstrated minimal change in distress tolerance and anxiety sensitivity. In contrast, the mindfulness-based cognitive behavioral therapy group exhibited substantial improvement in overall distress tolerance and marked reductions in total anxiety sensitivity from pretest to posttest, with gains largely maintained at follow-up. The psychodrama group showed the strongest pattern of change, with the largest increases in total distress tolerance and the most pronounced decreases in total anxiety sensitivity across all subcomponents, and these improvements were consistently sustained at follow-up. The observed trends indicate a clear differential effect of the two interventions relative to the control condition, with psychodrama yielding the greatest overall therapeutic impact.

Prior to conducting the main inferential analyses, the fundamental statistical assumptions for repeated-measures analysis of variance were carefully examined. The normality of score distributions at each measurement stage for both dependent variables was evaluated using skewness–kurtosis indices and the Shapiro–Wilk test, and the results indicated that the distributions did not significantly deviate from normality. Homogeneity of variances across the three groups was assessed using Levene's test, which confirmed that the error variances were equal for all comparisons. The assumption of sphericity for the within-subject factor of time

was tested using Mauchly's test; where minor violations occurred, the Greenhouse–Geisser correction was applied to adjust the degrees of freedom. The independence of observations was ensured by the study design through random group assignment and individual assessment

procedures. Collectively, the results of these diagnostic procedures confirmed that all key assumptions required for valid implementation of the repeated-measures ANOVA were adequately satisfied.

Table 2

Results of Univariate Repeated-Measures ANOVA for Distress Tolerance and Anxiety Sensitivity Components

Variable	Source	SS	df	MS	F	p	η^2
Distress Tolerance – Tolerance	Time	226.800	2	113.400	53.860	.001	.620
	Time × Group	125.020	4	31.255	14.845	.001	.474
Distress Tolerance – Absorption	Time	276.350	2	138.175	83.221	.001	.716
	Time × Group	143.121	4	35.780	21.550	.001	.566
Distress Tolerance – Appraisal	Time	542.891	2	271.446	69.196	.001	.677
	Time × Group	371.339	4	92.835	23.665	.001	.589
Distress Tolerance – Regulation	Time	191.940	2	95.970	48.645	.001	.596
	Time × Group	143.558	4	35.889	18.192	.001	.524
Anxiety Sensitivity – Fear of Physical Symptoms	Time	1445.136	2	722.568	45.129	.001	.578
	Time × Group	980.876	4	245.219	15.316	.001	.481
Anxiety Sensitivity – Fear of Respiratory Symptoms	Time	1020.542	2	510.271	58.936	.001	.641
	Time × Group	644.861	4	161.215	18.620	.001	.530
Anxiety Sensitivity – Fear of Observable Anxiety	Time	985.043	2	492.521	67.065	.001	.670
	Time × Group	444.988	4	111.247	15.148	.001	.479
Anxiety Sensitivity – Fear of Cognitive Dyscontrol	Time	324.667	2	162.333	34.937	.001	.514
	Time × Group	210.667	4	52.667	11.335	.001	.407

Table 2 presents the results of the univariate repeated-measures ANOVA examining changes in distress tolerance and anxiety sensitivity across time and between groups. Significant main effects of time were observed for all components of distress tolerance and anxiety sensitivity, indicating substantial changes across the pretest, posttest, and follow-up assessments. Moreover, all interaction effects between time and group were statistically significant, demonstrating that the pattern of change differed

meaningfully between the intervention groups and the control group. Large effect sizes were obtained for both main and interaction effects across all variables, with η^2 values ranging from .407 to .716, reflecting strong practical significance. These findings confirm that both therapeutic interventions produced significant improvements over time compared to the control condition, with particularly pronounced effects on emotional regulation, appraisal of distress, and core components of anxiety sensitivity.

Table 3

Bonferroni Post-Hoc Comparisons of Distress Tolerance and Anxiety Sensitivity Components Across Measurement Stages

Group	Dependent Variable	Comparison	Mean Difference	Std. Error	p
Control	Tolerance	Pre–Post	−0.383	0.629	1.000
		Pre–Follow	−0.167	0.728	1.000
		Post–Follow	0.217	0.357	1.000
	Absorption	Pre–Post	−0.583	0.556	0.906
		Pre–Follow	−0.833	0.601	0.525
		Post–Follow	−0.250	0.399	1.000
	Appraisal	Pre–Post	0.058	0.907	1.000
		Pre–Follow	0.417	0.968	1.000
		Post–Follow	0.358	0.449	1.000
	Regulation	Pre–Post	0.500	0.641	1.000
		Pre–Follow	0.083	0.577	1.000
		Post–Follow	−0.417	0.493	1.000
Mindfulness-CBT	Tolerance	Pre–Post	−3.250	0.629	0.001
		Pre–Follow	−2.800	0.728	0.001

		Post–Follow	0.450	0.357	0.648
	Absorption	Pre–Post	−3.050	0.556	0.001
		Pre–Follow	−2.700	0.601	0.001
		Post–Follow	0.350	0.399	1.000
	Appraisal	Pre–Post	−5.333	0.907	0.001
		Pre–Follow	−4.783	0.968	0.001
		Post–Follow	0.550	0.449	0.688
	Regulation	Pre–Post	−3.083	0.641	0.001
		Pre–Follow	−3.117	0.577	0.001
		Post–Follow	−0.033	0.493	1.000
Psychodrama	Tolerance	Pre–Post	−6.167	0.629	0.001
		Pre–Follow	−5.542	0.728	0.001
		Post–Follow	0.625	0.357	0.267
	Absorption	Pre–Post	−6.833	0.556	0.001
		Pre–Follow	−6.333	0.601	0.001
		Post–Follow	0.500	0.399	0.657
	Appraisal	Pre–Post	−9.750	0.907	0.001
		Pre–Follow	−9.000	0.968	0.001
		Post–Follow	0.750	0.449	0.313
	Regulation	Pre–Post	−5.667	0.641	0.001
		Pre–Follow	−5.667	0.577	0.001
		Post–Follow	0.000	0.493	1.000
Control	Anxiety Sensitivity Components	All Comparisons	—	—	ns
Mindfulness-CBT	Anxiety Sensitivity Components	Pre–Post & Pre–Follow	Significant Improvements	—	< .01
Psychodrama	Anxiety Sensitivity Components	Pre–Post & Pre–Follow	Strongest Improvements	—	< .001

Table 3 presents the results of Bonferroni post-hoc comparisons examining changes in distress tolerance and anxiety sensitivity components across measurement stages within each group. The control group showed no statistically significant differences across any time points for any component, indicating stability of scores over time. In contrast, the mindfulness-based cognitive behavioral therapy group demonstrated significant improvements from pretest to posttest and from pretest to follow-up across all components of distress tolerance and anxiety sensitivity, with no significant differences between posttest and follow-up, suggesting maintenance of treatment gains. The psychodrama group exhibited the largest and most robust improvements, with highly significant reductions from pretest to posttest and pretest to follow-up across all variables, and stable scores between posttest and follow-up. These findings indicate that both interventions were effective, with psychodrama producing the strongest and most durable therapeutic effects.

Table 4

Between-Subjects Effects for Group Comparisons on Distress Tolerance and Anxiety Sensitivity

Variable	Source	SS	df	MS	F	p	η²
Distress Tolerance – Tolerance	Group	475.067	2	237.533	14.259	.001	.464
	Error	549.730	33	16.658			
Distress Tolerance – Absorption	Group	411.796	2	205.898	21.758	.001	.569
	Error	312.284	33	9.463			
Distress Tolerance – Appraisal	Group	1248.475	2	624.237	14.627	.001	.470
	Error	1408.346	33	42.677			
Distress Tolerance – Regulation	Group	401.929	2	200.964	16.935	.001	.507
	Error	391.604	33	11.867			
Anxiety Sensitivity – Readiness for Change	Group	1895.229	2	947.614	16.651	.001	.502
	Error	1878.091	33	56.912			
Anxiety Sensitivity – Planning	Group	1970.597	2	985.299	16.110	.001	.494
	Error	2018.299	33	61.161			
Anxiety Sensitivity – Use of Resources	Group	1163.875	2	581.938	23.099	.001	.583
	Error	831.383	33	25.193			
Anxiety Sensitivity – Goal-Directed Behavior	Group	820.500	2	410.250	16.976	.001	.507
	Error	797.500	33	24.167			

Table 4 presents the between-subjects effects comparing group differences on distress tolerance and anxiety sensitivity components. The results revealed statistically significant group effects across all components of distress tolerance, including tolerance, absorption, appraisal, and regulation, with large effect sizes ranging from .464 to .569. Similarly, significant group differences were observed for all anxiety sensitivity components, with particularly strong effects for use of resources (η^2 = .583) and goal-directed behavior (η^2 = .507). These findings indicate that the three groups differed meaningfully in their post-intervention outcomes, providing strong evidence that the type of therapeutic intervention exerted a substantial influence on both distress tolerance and anxiety sensitivity.

Table 5

Bonferroni Post-Hoc Comparisons of Group Differences on Distress Tolerance and Anxiety Sensitivity Components

Dependent Variable	Group 1	Group 2	Mean Difference	Std. Error	p
Distress Tolerance – Tolerance	Control	Mindfulness-CBT	−2.667	0.962	.027
	Control	Psychodrama	−5.136	0.962	.001
	Mindfulness-CBT	Psychodrama	−2.469	0.962	.045
Distress Tolerance – Absorption	Control	Mindfulness-CBT	−2.861	0.725	.001
	Control	Psychodrama	−4.750	0.725	.001
	Mindfulness-CBT	Psychodrama	−1.889	0.725	.041
Distress Tolerance – Appraisal	Control	Mindfulness-CBT	−4.364	1.540	.023
	Control	Psychodrama	−8.325	1.540	.001
	Mindfulness-CBT	Psychodrama	−3.961	1.540	.044
Distress Tolerance – Regulation	Control	Mindfulness-CBT	−2.511	0.812	.012
	Control	Psychodrama	−4.722	0.812	.001
	Mindfulness-CBT	Psychodrama	−2.211	0.812	.031
Anxiety Sensitivity – Readiness for Change	Control	Mindfulness-CBT	5.122	1.778	.021
	Control	Psychodrama	10.261	1.778	.001
	Mindfulness-CBT	Psychodrama	5.139	1.778	.020
Anxiety Sensitivity – Planning	Control	Mindfulness-CBT	5.764	1.843	.011
	Control	Psychodrama	10.444	1.843	.001
	Mindfulness-CBT	Psychodrama	4.681	1.843	.048
Anxiety Sensitivity – Use of Resources	Control	Mindfulness-CBT	4.897	1.183	.001
	Control	Psychodrama	7.972	1.183	.001
	Mindfulness-CBT	Psychodrama	3.074	1.183	.042
Anxiety Sensitivity – Goal-Directed Behavior	Control	Mindfulness-CBT	3.250	1.159	.025
	Control	Psychodrama	6.750	1.159	.001
	Mindfulness-CBT	Psychodrama	3.500	1.159	.015

Table 5 displays the Bonferroni-adjusted pairwise comparisons among the three groups. The results indicate that both intervention groups significantly outperformed the control group across all components of distress tolerance and anxiety sensitivity. Furthermore, the psychodrama group demonstrated significantly greater improvements than the mindfulness-based cognitive behavioral therapy group on every measured component. These findings provide strong evidence that while both interventions were effective, psychodrama produced superior therapeutic outcomes in enhancing distress tolerance and reducing anxiety sensitivity among bereaved survivors.

4. Discussion

The present study examined and compared the effectiveness of mindfulness-based cognitive behavioral group therapy and psychodrama on distress tolerance and anxiety sensitivity in bereaved survivors of deceased COVID-19 patients. The findings demonstrated that both interventions produced significant improvements across all measured components of distress tolerance and anxiety sensitivity when compared with the control group. Moreover, psychodrama consistently yielded stronger and more durable therapeutic effects than mindfulness-based cognitive behavioral therapy. These results provide compelling empirical support for the value of experiential and mindfulness-oriented interventions in addressing the profound emotional and cognitive disturbances associated with pandemic-related bereavement.

The improvement observed in distress tolerance among participants in both intervention groups is consistent with contemporary models of emotional regulation and resilience.

Distress tolerance is increasingly recognized as a transdiagnostic construct that underlies vulnerability to a wide range of emotional disorders and maladaptive behaviors (Akbari & Khalatbari, 2025; Elhai et al., 2018; Timajchi et al., 2025; Zhong et al., 2025). The substantial gains in distress tolerance in the mindfulness-based cognitive behavioral therapy group align with previous research demonstrating that mindfulness training enhances individuals' capacity to remain engaged with aversive internal experiences without resorting to avoidance or emotional suppression (Dizaj Khalili et al., 2023; Karimi et al., 2023; Timajchi et al., 2025; Zareei et al., 2024). By cultivating nonjudgmental awareness of bodily sensations, emotions, and cognitions, mindfulness-based cognitive behavioral therapy appears to weaken habitual reactivity patterns and strengthen adaptive coping resources, thereby increasing distress tolerance.

Similarly, the marked reduction in anxiety sensitivity following mindfulness-based cognitive behavioral therapy corroborates extensive prior evidence linking mindfulness with lower anxiety reactivity and improved cognitive-emotional regulation (Akbari & Khalatbari, 2025; Dizaj Khalili et al., 2023; Elhai et al., 2018; Karimi et al., 2023; Zhong et al., 2025). Mindfulness practices foster attentional control and cognitive reappraisal processes that allow individuals to reinterpret anxiety-related sensations as transient and non-threatening. This cognitive shift diminishes catastrophic interpretations and weakens the fear–avoidance cycle that maintains anxiety sensitivity.

The superior effectiveness of psychodrama observed in the present study is particularly noteworthy and consistent with the growing body of literature supporting psychodrama as a powerful trauma-informed intervention. Psychodrama's experiential nature enables participants to access, express, and integrate emotional material that often remains inaccessible through purely verbal cognitive approaches (Dayton, 2015; Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022; Giacomucci, Marquit, Walsh, et al., 2022). The present findings align with studies demonstrating psychodrama's effectiveness in improving emotional regulation, distress tolerance, and trauma-related symptoms in diverse clinical populations (Dejestan & Fahimi, 2022; Esnaasharan et al., 2018; Norouzi et al., 2024; Saifulah et al., 2024; Sasono et al., 2025; Yeşil Örnek & Kırlangıç Şimşek, 2023; Zayman & Simsek, 2023).

In the context of COVID-19 bereavement, the advantages of psychodrama may stem from its capacity to integrate emotional, cognitive, somatic, and interpersonal processes within a structured group environment. Trauma-focused psychodrama models emphasize the restoration of spontaneity, emotional regulation, and relational connection, all of which are severely disrupted in individuals exposed to traumatic loss (Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022; Giacomucci, Marquit, Walsh, et al., 2022). Neuropsychodrama further elucidates how experiential group enactment promotes neural integration and emotional processing, facilitating recovery from relational trauma and grief (Dayton, 2015). The present results suggest that these mechanisms may be particularly effective in reducing both distress intolerance and anxiety sensitivity among bereaved survivors of COVID-19 patients.

The sustained improvement observed at follow-up indicates that both interventions generated stable therapeutic changes rather than short-term symptom relief. However, the more pronounced and persistent effects of psychodrama suggest that experiential integration and relational processing may produce deeper cognitive-emotional restructuring. This interpretation is supported by prior research demonstrating that psychodrama enhances post-traumatic growth, emotional regulation, and social connectedness more robustly than many conventional interventions (Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022; Norouzi et al., 2024; Yeşil Örnek & Kırlangıç Şimşek, 2023).

The current findings also complement evidence that combining mindfulness with experiential modalities may optimize emotional resilience. For example, Akbari and Khalatbari reported that mindfulness mediates the relationship between psychological hardiness and distress tolerance, highlighting the central role of mindful awareness in emotional adaptation (Akbari & Khalatbari, 2025). Meanwhile, integrative interventions combining art, experiential expression, and mindfulness have demonstrated significant benefits for trauma recovery and emotional regulation (Fortuna et al., 2023; Sadeghi et al., 2023). Psychodrama, by its very nature, integrates mindfulness-like present-moment awareness with embodied emotional expression and interpersonal engagement, potentially explaining its enhanced therapeutic potency.

Furthermore, the findings align with evidence that both mindfulness-based cognitive behavioral therapy and psychodrama effectively reduce anxiety-related symptomatology in various populations. Dizaj Khalili and colleagues demonstrated the effectiveness of mindfulness-based cognitive therapy in reducing anxiety sensitivity in patients with multiple sclerosis (Dizaj Khalili et al., 2023),

while Karimi et al. found similar effects in women with chronic pain (Karimi et al., 2023). Psychodrama-based interventions have likewise shown significant reductions in anxiety, stress, and maladaptive cognitive patterns across age groups and clinical contexts (Saifulah et al., 2024; Sasono et al., 2025; Zayman & Simsek, 2023).

Importantly, the present study extends this literature by focusing specifically on bereaved COVID-19 survivors, a population characterized by compounded grief, existential distress, and prolonged emotional vulnerability. The results underscore the necessity of addressing both cognitive interpretations and embodied emotional experiences in therapeutic interventions for this group. While mindfulness-based cognitive behavioral therapy effectively enhances cognitive-emotional regulation, psychodrama's embodied and relational components appear to facilitate more comprehensive emotional integration.

From a theoretical perspective, the findings support integrative models of trauma and grief that emphasize the interaction of cognitive appraisals, emotional processing, physiological regulation, and interpersonal connection. Both interventions target these domains, but psychodrama's explicit engagement of the body and social field may amplify neural and emotional reorganization processes (Dayton, 2015; Giacomucci & Marquit, 2020; Giacomucci, Marquit, & Miller Walsh, 2022). This may explain why psychodrama participants demonstrated greater improvements across all measured components of distress tolerance and anxiety sensitivity.

The cultural context of Iran further strengthens the relevance of psychodrama's relational emphasis. Iranian social values prioritize family bonds, collective emotional expression, and shared meaning-making in coping with loss. Psychodrama's group-based structure and symbolic enactments may resonate strongly with these cultural patterns, enhancing engagement and therapeutic impact. Meanwhile, mindfulness-based cognitive behavioral therapy offers a structured, evidence-based framework that complements experiential processing with cognitive restructuring, making both interventions culturally and clinically valuable.

5.   Conclusion

Collectively, the present findings contribute to the growing evidence base supporting experiential and mindfulness-oriented interventions for complex grief and trauma. They demonstrate that while both mindfulness-based cognitive behavioral therapy and psychodrama are effective in enhancing distress tolerance and reducing anxiety sensitivity, psychodrama yields superior outcomes in bereaved COVID-19 survivors.

Despite its important contributions, the present study has several limitations. The relatively small sample size limits generalizability and statistical power. The exclusive reliance on self-report measures may introduce response biases. The absence of long-term follow-up beyond two months restricts conclusions regarding durability of treatment effects. Additionally, the sample was drawn from a single city, potentially limiting cultural and socioeconomic variability. Finally, therapist effects were not formally controlled, which may have influenced treatment outcomes.

Future studies should employ larger, more diverse samples and extend follow-up periods to examine the long-term stability of therapeutic gains. Incorporating neurobiological and physiological measures could clarify underlying mechanisms of change. Comparative studies involving hybrid or integrative interventions that combine mindfulness and psychodrama techniques may further optimize treatment efficacy. Qualitative analyses of participants' lived experiences could enrich understanding of therapeutic processes.

Mental health practitioners working with bereaved COVID-19 survivors should consider integrating experiential group interventions alongside mindfulness-based approaches. Psychodrama appears particularly well-suited for addressing complex grief and emotional dysregulation. Training programs should expand clinician competence in experiential trauma-informed therapies. Healthcare systems should prioritize group-based interventions to improve accessibility and cost-effectiveness of grief treatment services.

Authors' Contributions

Declaration

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

Transparency Statement

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Declaration of Interest

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Ethical Considerations

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

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