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Comparison of the Effectiveness of Compassion-Based Therapy and Mentalization-Based Interventions on Perceived Stress and Psychological Well-Being in Workers with Job Burnout

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A B S T R A C T

The present study aimed to compare the effectiveness of a compassion-based intervention and a mentalization-based intervention on perceived stress and psychological well-being in workers experiencing job burnout. This study employed a quasi-experimental design with a pretest–posttest control group and a two-month follow-up. The statistical population included all workers with job burnout at Mansour Industry Factory in Falavarjan County in 2024. From this population, 60 participants were selected using purposive sampling and then randomly assigned to three groups of 20 participants each (two experimental groups and one control group). Data collection instruments included the Maslach Burnout Inventory (Maslach, 1981), the Perceived Stress Scale developed by Cohen and Kamarck (1983), and Ryff's Psychological Well-Being Scale (Ryff, 1995). The first experimental group received mentalization-based training, and the second experimental group received a compassion-based intervention, each delivered in 12 sessions of 90 minutes, while the control group was placed on a waitlist. Data were analyzed using repeated-measures analysis of variance and Bonferroni post hoc tests. The results indicated that both interventions had a significant effect on perceived stress and psychological well-being, and the stability of these effects was maintained during the follow-up period ($p < .05$). Moreover, the findings showed that the compassion-based intervention was more effective than the mentalization-based intervention in reducing perceived stress and enhancing psychological well-being ($p < .05$). Accordingly, occupational and organizational counselors can utilize compassion-based and mentalization-based interventions to promote workers' mental health and organizational performance.

Keywords: *Perceived stress, psychological well-being, job burnout, compassion-based intervention, mentalization-based intervention*

1. Introduction

In contemporary occupational contexts, job burnout has emerged as one of the most pervasive and consequential psychological syndromes affecting employees across a wide range of professions. Characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, burnout develops in response to chronic job-related stressors and prolonged exposure to demanding work environments. Empirical evidence consistently demonstrates that burnout is not merely an individual-level problem but a systemic phenomenon with substantial implications for organizational functioning, employee health, and societal productivity (Agyapong et al., 2022; Murthy, 2022). Recent global workforce analyses indicate that burnout is strongly associated with elevated levels of perceived stress, anxiety, depression, absenteeism, reduced work engagement, and diminished quality of professional performance (Hodkinson et al., 2022; Le et al., 2024). As such, addressing burnout has become a critical priority in occupational health psychology.

Perceived stress plays a central role in the etiology and maintenance of job burnout. It reflects individuals' subjective appraisal of the extent to which environmental demands exceed their coping resources and psychological capacities. Unlike objective stressors, perceived stress captures the cognitive–emotional interpretation of stress experiences, which has been shown to be a stronger predictor of psychological distress and maladaptive outcomes (Ewing & Hamza, 2023; Gori et al., 2023). High perceived stress has been linked to emotional dysregulation, impaired interpersonal functioning, and vulnerability to a range of mental health problems, including depression and anxiety (Foster et al., 2023; Peng et al., 2022). In occupational settings, sustained high perceived stress contributes directly to burnout symptoms, particularly emotional exhaustion, and undermines employees' ability to adapt to work demands (Lucas et al., 2022; Yunus & Mostafa, 2022).

Parallel to the construct of perceived stress, psychological well-being represents a foundational indicator of positive mental health and optimal functioning. Ryff's eudaimonic model conceptualizes psychological well-being as a multidimensional construct encompassing self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 2013). High levels of psychological well-being are associated with resilience, adaptive coping, work engagement, and sustained professional effectiveness, whereas low levels are linked to vulnerability to stress-related disorders and burnout (Heintzelman & Diener, 2019; Páez Gallego et al., 2020). Empirical studies have shown that employees experiencing burnout consistently report lower psychological well-being, suggesting that burnout not only reflects distress but also a significant erosion of positive psychological resources (Meier & Kim, 2022; L. Moradi et al., 2023).

The prevalence and severity of burnout have been documented across diverse occupational groups, including healthcare professionals, teachers, social service employees, and industrial workers. Systematic reviews and large-scale studies reveal alarmingly high rates of burnout, depression, anxiety, and stress among workers exposed to high workload, emotional labor, time pressure, and limited organizational support (Alenezi et al., 2022; Kwak et al., 2021; Vaičienė et al., 2022). In industrial and factory-based contexts, additional risk factors such as shift work, physical strain, job insecurity, and limited autonomy further exacerbate stress and burnout levels (Firoozkouhi Moghadam et al., 2024; Firouzkouhi Moghaddam et al., 2024). These findings underscore the urgent need for evidence-based psychological interventions tailored to occupational environments.

In response to this growing challenge, contemporary occupational mental health research has increasingly emphasized preventive and therapeutic interventions that target both stress reduction and enhancement of psychological well-being. Traditional stress management programs, while beneficial, often focus primarily on symptom reduction and behavioral coping strategies without sufficiently addressing underlying emotional and interpersonal processes (Gabriel & Aguinis, 2022). Consequently, there has been a shift toward integrative, process-oriented interventions that cultivate internal psychological capacities such as emotional awareness, self-regulation, and adaptive meaning-making. Among these approaches, mentalization-based interventions and compassion-based interventions have gained substantial empirical and theoretical attention.

Mentalization refers to the capacity to understand and interpret one's own and others' behavior in terms of underlying mental states, such as thoughts, emotions, intentions, and desires. Originally developed within psychodynamic and attachment-based frameworks, mentalization has been recognized as a core psychological function essential for emotion regulation, interpersonal functioning, and adaptive stress response (Bateman & Fonagy, 2016; Bateman, 2022). Deficits in mentalization

have been linked to heightened emotional reactivity, interpersonal conflicts, and vulnerability to stress-related psychopathology (Hajek Gross et al., 2024; Yang, 2025). In occupational contexts, impaired mentalization may contribute to misinterpretation of workplace interactions, reduced empathy, and ineffective coping with job demands.

Empirical evidence supports the effectiveness of mentalization-based interventions in improving emotional regulation, interpersonal relationships, and psychological well-being across clinical and non-clinical populations. Systematic reviews and meta-analyses indicate that mentalization-based therapy produces significant improvements in affect regulation, stress tolerance, and relational functioning (Bateman, 2022; Hajek Gross et al., 2024). Recent studies have extended these findings to occupational settings, demonstrating that mentalization-based approaches can reduce burnout symptoms and enhance quality of work life among healthcare professionals and other high-stress occupational groups (Salmanian et al., 2021; Soleimani et al., 2021). Furthermore, mentalization has been identified as a mediating mechanism linking early relational experiences to adult psychological functioning, suggesting its relevance for long-term occupational adjustment (Kim & Woo, 2025; Locati et al., 2025).

Complementary to mentalization, compassion-based interventions focus on cultivating a caring, understanding, and nonjudgmental stance toward oneself and others in the face of suffering. Rooted in evolutionary, affective neuroscience, and contemplative traditions, compassion-based models emphasize the regulation of threat-based emotional systems and the activation of soothing and affiliative systems (Inwood & Ferrari, 2018; Matos et al., 2022). Self-compassion, a central construct in these interventions, involves self-kindness, recognition of common humanity, and mindful awareness of distressing experiences. Extensive research has demonstrated that self-compassion is negatively associated with stress, burnout, anxiety, and depression, and positively associated with resilience and psychological well-being (Biber & Ellis, 2021; Healy et al., 2024).

Systematic reviews and meta-analyses provide robust evidence for the efficacy of compassion-based training programs in occupational and healthcare settings. These interventions have been shown to significantly reduce perceived stress, emotional exhaustion, and self-criticism while enhancing well-being, emotional balance, and professional satisfaction (Gutiérrez-Cobo et al., 2024; Healy et al., 2024). Compassion-based approaches have also demonstrated effectiveness in improving coping with workplace adversity, fostering supportive interpersonal climates, and mitigating the negative impact of organizational stressors (Foster et al., 2023; Matos et al., 2022). Importantly, compassion training appears particularly relevant for employees experiencing high levels of burnout, as it directly targets shame, harsh self-evaluation, and threat-driven emotional responses.

Despite the growing body of research on mentalization-based and compassion-based interventions, several gaps remain in the literature. First, most studies have examined these approaches separately, limiting direct comparison of their relative effectiveness on key occupational mental health outcomes. Second, existing research has predominantly focused on healthcare and educational professionals, with comparatively limited attention to industrial and factory workers, who face distinct occupational stressors (Catană et al., 2022; Le et al., 2024). Third, few studies have simultaneously examined both perceived stress and psychological well-being as outcome variables, despite their central role in burnout processes and recovery. Addressing these gaps is essential for informing evidence-based intervention selection and implementation in organizational settings.

Furthermore, theoretical integration suggests that mentalization-based and compassion-based interventions may exert their effects through partially overlapping yet distinct mechanisms. Mentalization primarily enhances cognitive–affective understanding of mental states and improves interpersonal regulation, whereas compassion-based interventions directly modulate emotional systems related to threat, safety, and affiliation (Inwood & Ferrari, 2018; Matin et al., 2025). Comparative evaluation of these interventions can therefore provide valuable insights into differential pathways for reducing stress and promoting well-being among employees with burnout. Such knowledge is crucial for tailoring interventions to individual and organizational needs and optimizing mental health outcomes.

In the Iranian occupational context, where industrial workers often experience high workload, limited psychological support, and constrained access to mental health services, empirical evaluation of structured, group-based psychological interventions is particularly important (Firouzkouhi Moghaddam et al., 2024; L. M. Moradi et al., 2023). Group-based formats offer cost-effective and scalable solutions that align with organizational constraints while fostering peer support and shared learning. However,

rigorous comparative studies examining their effectiveness remain scarce, underscoring the need for methodologically robust research.

Accordingly, the present study was designed to address these gaps by systematically comparing the effectiveness of mentalization-based intervention and compassion-based intervention on perceived stress and psychological well-being among workers with job burnout. By employing a quasi-experimental design with pretest, posttest, and follow-up assessments, this study seeks to contribute to the growing literature on occupational mental health interventions and provide evidence-based guidance for practitioners and organizations. The aim of this study was to compare the effectiveness of mentalization-based intervention and compassion-based intervention on perceived stress and psychological well-being in workers with job burnout.

2. Methods and Materials

2.1. Study Design and Participants

This study was applied in terms of purpose and employed a quasi-experimental design with a pretest–posttest control group and a two-month follow-up phase. The statistical population consisted of all workers with job burnout at Mansour Industry Factory in Falavarjan County, Isfahan Province, in 2024. Purposive sampling was used to select the sample. Initially, a list of workers with at least five years of work experience was prepared, and the Job Burnout Questionnaire (Maslach Burnout Inventory) was administered to these individuals. Those who obtained a burnout score above the cutoff point of 60 on the questionnaire (equivalent to one standard deviation above the group mean) were considered eligible for inclusion in the study. Based on power analysis conducted using G*Power software (significance level = .05, statistical power = .80, medium effect size = .70), the minimum required sample size was estimated to be 30 participants per group; however, due to executive limitations, 60 participants were purposively selected and then randomly assigned using a random numbers table into three groups (two experimental groups and one control group), each consisting of 20 participants. Possible attrition during the study period was taken into account in the sample size estimation. Inclusion criteria included providing informed consent, being male, having at least five years of work experience, holding a minimum educational level of lower secondary school (grade 9), the ability to attend 12 weekly training sessions regularly, and obtaining a high score on the job burnout questionnaire. Exclusion criteria included absence from more than two sessions, withdrawal from the study, or failure to complete therapeutic assignments. All participants signed informed consent forms prior to entering the study and were informed about the study objectives, procedures, and their right to withdraw at any time. The study was conducted in accordance with research ethics principles and confidentiality of information was ensured. The interventions were delivered in 12 weekly group sessions (90 minutes each) for both intervention conditions. The first group received mentalization-based training according to the protocol of Bateman and Fonagy (2020), and the second group received compassion-based therapy based on the protocol of Germer and Neff (2019); meanwhile, the control group received no intervention during this period. At the end of the sessions, the questionnaires were re-administered to both experimental groups as a posttest, and they were administered again two months later at the follow-up stage.

2.2. Measures

1. Maslach Burnout Inventory (MBI):

The Maslach Burnout Inventory was developed by Maslach and Jackson in 1981 to assess the three dimensions of job burnout and consists of 22 items categorized into three subscales: Emotional Exhaustion, Depersonalization, and Reduced Personal Accomplishment. Emotional Exhaustion includes items 1, 2, 3, 6, 8, 13, 14, 16, and 20; Depersonalization includes items 5, 10, 11, 15, and 22; and Reduced Personal Accomplishment includes items 4, 7, 9, 12, 17, 18, 19, and 21. Items are scored on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree), and attention must be paid to reverse-scored items. In the original version, higher scores on Emotional Exhaustion and Depersonalization indicate greater burnout, whereas higher scores on Reduced Personal Accomplishment indicate lower burnout and therefore must be reverse-coded. The minimum possible score on this questionnaire is 22 and the maximum score is 110. Maslach and Jackson (1993) reported Cronbach's alpha coefficients of .90 for Emotional Exhaustion, .71 for Depersonalization, and .71 for Reduced Personal Accomplishment. Subsequent studies, such as Maslach et al. (2001), confirmed the validity of the questionnaire using exploratory and confirmatory factor analyses, reporting factor loadings above .41 for all items. In Iran, this instrument has been widely used. Badri Gargari (2007) confirmed its reliability using Cronbach's alpha coefficients of .84 for Emotional Exhaustion, .74 for

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Depersonalization, and .86 for Reduced Personal Accomplishment. Concurrent validity between this instrument and the Brayfield–Rothe Job Satisfaction Questionnaire yielded a negative correlation coefficient of r = −.39 (as cited in Arsineh et al., 2016). In the study by Moradi et al. (2023), the overall Cronbach's alpha coefficient was reported as .92. In the present study, Cronbach's alpha coefficients were calculated as .87 for Emotional Exhaustion, .78 for Depersonalization, .82 for Reduced Personal Accomplishment, and .89 for the total scale, indicating satisfactory reliability.

The Perceived Stress Scale was developed by Cohen and Kamarck in 1983 and consists of 16 items measuring two subscales: (a) negative perception of stress, including items 1, 2, 3, 4, 11, 12, and 14; and (b) positive perceived stress, including items 5, 6, 7, 8, 9, 10, and 13, which are reverse-scored. Each item is rated on a five-point Likert scale (never, rarely, sometimes, often, very often), scored from 0 to 4, respectively. In Ahmadian's study (2012), internal consistency reliability coefficients obtained via Cronbach's alpha were .71 for positive perceived stress and .75 for negative perceived stress, with an overall alpha coefficient of .84 for the total scale. Cohen and Kamarck (1983) reported internal consistency reliability coefficients ranging from .84 to .86 across two student samples and one group of individuals enrolled in a smoking cessation program. Mimura and Griffiths reported Cronbach's alpha coefficients of .88 for the original scale and .81 for the revised Japanese version, which were comparable to those of the original scale. In the original scale, two factors explained 53.2% of the variance, with the first factor accounting for 27.3% and the second for 25.9% of the variance; in the revised Japanese version, two factors explained 49.9% of the variance, with the first factor accounting for 28.5% and the second for 21.4% (Abolghasemi & Narimani, 2006). In the present study, Cronbach's alpha was .73.

The Ryff Psychological Well-Being Scale was developed by Ryff in 1995. This scale consists of 18 items measuring six components: Self-Acceptance, Positive Relations with Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth. Items 1, 4, and 6 assess Environmental Mastery; items 9, 12, and 18 assess Autonomy; items 3, 11, and 13 assess Positive Relations with Others; items 7, 15, and 17 assess Personal Growth; items 5, 14, and 16 assess Purpose in Life; and items 2, 8, and 10 assess Self-Acceptance. The sum of these six components constitutes the total psychological well-being score. This self-report instrument is rated on a six-point Likert scale ranging from strongly agree to strongly disagree (1 to 6), with higher scores indicating better psychological well-being. The score range varies from 18 to 108. Of the total items, 10 are scored directly and 8 items (3, 4, 5, 9, 10, 13, 16, and 17) are reverse-scored. Ryff (1995) reported Cronbach's alpha coefficients of .93 for Self-Acceptance, .91 for Positive Relations with Others, .86 for Autonomy, .90 for Environmental Mastery, and .87 for Personal Growth. In Akin's study (2008), concurrent validity of this scale with the Self-Compassion Questionnaire was examined, yielding correlations of .55 for Self-Acceptance, .51 for Positive Relations with Others, .49 for Autonomy, .47 for Environmental Mastery, .36 for Purpose in Life, and .39 for Personal Growth. In Iran, Mikaeili Maniee (2010) examined the reliability and validity of the Psychological Well-Being Scale in a sample of 376 university students. Test–retest reliability over a two-week interval yielded coefficients of .90 for the total score, .74 for Self-Acceptance, .76 for Positive Relations with Others, .72 for Autonomy, .79 for Environmental Mastery, .81 for Purpose in Life, and .84 for Personal Growth. Bayani et al. (2008) reported construct validity through correlation with the Satisfaction With Life Scale (SWLS) as .48. In the present study, the overall reliability of the instrument assessed via Cronbach's alpha was .88.

2.3. Interventions

The mentalization-based intervention was delivered in a group format in accordance with the Bateman and Fonagy protocol (2020) across 12 weekly sessions (90 minutes each) facilitated by a psychologist at the factory site. Each session combined psychoeducation (concept clarification), guided group discussion, practical in-session exercises, and homework assignments. The intervention was grounded in the theoretical framework of mentalization and focused on strengthening participants' capacity to accurately perceive, interpret, and reflect on their own and others' mental states (e.g., thoughts, emotions, intentions) to reduce misunderstandings and maladaptive reactions. Session content progressed from introducing the concept and stance of mentalization, identifying indicators of weak versus effective mentalizing, and building emotion identification and understanding, to mentalizing emotions in self and others, linking attachment patterns with mentalization, and practicing effective interpersonal skills such as empathy and active listening. The protocol then emphasized applying

mentalization skills to common workplace challenges, reconstructing maladaptive internal narratives, and using mentalization under occupational stress and burnout conditions, followed by generalization and consolidation of learned skills, and concluding with review, addressing participants' questions, and posttest/follow-up questionnaire administration.

The compassion-based therapy intervention was implemented as a group program based on the Germer and Neff protocol (2019) in 12 weekly 90-minute sessions led by a trained psychologist at the factory. Sessions incorporated structured psychoeducation, experiential practices, group-based reflection, and homework tasks, with the overarching aim of cultivating self-compassion skills to enhance psychological resilience, increase self-kindness, reduce self-criticism and shame, and improve adaptive emotion regulation. The intervention sequence began with establishing therapeutic alliance and introducing core compassion concepts and their distinctions from pity or weakness, then moved to emotion regulation using the tripartite model (threat, drive/arousal, and soothing systems), and positioning compassion as a felt sense of safety through compassionate imagery. Subsequent sessions targeted self-criticism and shame with compassion-focused practices, self-kindness during difficult situations through the components of self-compassion (self-kindness, common humanity, and mindfulness), extending compassion to others and addressing barriers, and applying compassion skills to challenging workplace emotions (e.g., anger, anxiety, hopelessness). The protocol further included compassionate imagery and writing exercises (e.g., compassionate letter to the wounded self), compassionate re-authoring of personal narratives, learning to receive compassion from others and accept care, and finally planning for maintenance of self-compassion practices in daily life, with a closing session devoted to consolidation, practical recommendations, and administration of outcome measures.

2.4. Data analysis

To examine the homogeneity of the groups at the pretest stage, one-way analysis of variance was used. Data analysis was conducted using SPSS software (Version 26). Repeated-measures analysis of variance was employed to examine changes across the pretest, posttest, and follow-up stages.

3. Findings and Results

Table 1 presents the means and standard deviations of the study variables (perceived stress and psychological well-being) among workers with job burnout by group membership.

Table 1

Means and Standard Deviations of the Control and Experimental Groups on the Study Variables Across Measurement Times

Variable	Descriptive Index	Pretest	Posttest	Follow-up	Pretest	Posttest	Follow-up	Pretest	Posttest	Follow-up
		Compassion-Based Intervention			Mentalization-Based Intervention			Control Group		
Perceived Stress	Mean	42.55	34.45	34.45	43.75	38.35	38.00	43.75	44.15	43.00
	SD	5.64	5.64	4.89	4.38	4.28	3.42	4.67	3.94	4.12
Psychological Well-Being	Mean	46.35	54.30	53.55	44.50	50.45	49.10	46.75	46.90	46.85
	SD	5.99	6.38	6.14	4.55	5.40	5.55	5.41	5.17	4.49

Based on the results presented in Table 1, there were no substantial differences among the three groups in mean scores at the pretest stage; however, after the intervention, greater differences emerged in the experimental groups. To examine the key assumption of normality of score distributions in the study population, the Shapiro–Wilk test was applied. The results indicated that the null hypothesis of normality was supported for the distributions of scores in the compassion-based intervention group, the mentalization-based intervention group, and the control group for perceived stress ($p = .056$, $p = .831$, $p = .079$, respectively) and psychological well-being ($p = .177$, $p = .623$, $p = .097$, respectively) ($p > .05$). Thus, the assumption of normal distribution of scores at the pretest stage for both experimental groups and the control group was confirmed. The results of the repeated-measures analysis of variance for the study variables are presented in Table 2.

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Table 2

Effects of Time and the Interaction Between Time and Group Membership on Perceived Stress and Psychological Well-Being

Variable	Source	Sum of Squares	df	Mean Square	F	p	Effect Size
Perceived Stress	Time	845.911	2	422.956	88.906	< .001	.609
	Time × Group	437.089	4	109.272	22.969	< .001	.446
	Error	542.333	114	4.757			
Psychological Well-Being	Time	763.633	2	381.817	93.977	< .001	.622
	Time × Group	396.533	4	99.133	24.400	< .001	.461
	Error	463.167	114	4.063			

As shown in Table 2, the Greenhouse–Geisser–corrected F values and degrees of freedom indicate that both the main effect of time and the interaction effect of time and group membership were statistically significant ($p < .001$). These findings indicate that, for perceived stress and psychological well-being, there were significant differences between at least two groups with respect to the effect of time and the interaction between time and group membership. The results of the Bonferroni post hoc test used to determine the effect of time on the study variables by group are presented in Table 3.

Table 3

Bonferroni Post Hoc Test Results for the Effect of Time on the Study Variables by Group

Variable	Phase	Experimental (1)–Experimental (2)			Experimental (1)–Control			Experimental (2)–Control		
		Mean Difference	SE	p	Mean Difference	SE	p	Mean Difference	SE	p
Perceived Stress	Pretest–Posttest	2.939	1.044	.030	5.800	1.037	< .001	8.739	1.044	< .001
	Pretest–Follow-up	2.519	0.817	.002	5.000	0.826	< .001	7.519	0.821	< .001
Psychological Well-Being	Pretest–Posttest	2.112	0.848	.047	5.664	0.852	< .001	7.776	0.840	< .001
	Pretest–Follow-up	2.820	0.954	.014	4.233	0.958	< .001	7.052	0.944	< .001

Note. Experimental Group 1 = Mentalization-based intervention; Experimental Group 2 = Compassion-based intervention.

As shown in Table 3, there were significant differences between the mean scores of perceived stress and psychological well-being at the pretest and posttest stages in both experimental groups ($p < .05$). Significant differences were also observed between the mean scores of perceived stress and psychological well-being at the pretest and follow-up stages in both experimental groups ($p < .05$). Accordingly, although both interventions had significant effects on perceived stress and psychological well-being and the stability of both interventions was maintained at the follow-up stage, the compassion-based intervention demonstrated a greater effect, and this difference was statistically significant.

4. Discussion

The findings of the present study demonstrated that both the mentalization-based intervention and the compassion-based intervention led to significant reductions in perceived stress and significant improvements in psychological well-being among workers with job burnout, and that these effects were maintained at the two-month follow-up. These results provide empirical support for the effectiveness of process-oriented psychological interventions in occupational contexts characterized by chronic stress and burnout. The absence of significant differences between groups at the pretest stage confirms baseline equivalence and strengthens the internal validity of the observed post-intervention changes, suggesting that the improvements can be attributed to the interventions rather than pre-existing differences.

The significant reduction in perceived stress observed in both intervention groups is consistent with a substantial body of literature emphasizing the central role of psychological capacities such as emotion regulation, cognitive appraisal, and interpersonal understanding in shaping stress experiences. Perceived stress reflects individuals' subjective evaluation of environmental demands relative to their coping resources, and interventions that enhance reflective functioning and emotional awareness are particularly well

positioned to influence this appraisal process (Ewing & Hamza, 2023; Gori et al., 2023). The results align with prior findings indicating that interventions targeting underlying emotional and cognitive mechanisms can produce meaningful reductions in stress beyond those achieved by surface-level stress management techniques (Gabriel & Aguinis, 2022; Le et al., 2024).

With respect to the mentalization-based intervention, the observed decreases in perceived stress and increases in psychological well-being can be understood in light of the core mechanisms of mentalization. Mentalization enhances individuals' capacity to recognize and interpret internal mental states and those of others, thereby reducing misinterpretations, emotional reactivity, and interpersonal conflict. Deficits in mentalization have been associated with heightened stress sensitivity, emotional dysregulation, and burnout-related symptoms, particularly in high-demand occupational environments (Bateman & Fonagy, 2016; Yang, 2025). By strengthening reflective functioning, the intervention likely enabled participants to respond more flexibly to workplace stressors, reducing automatic threat-based reactions and fostering more adaptive coping strategies. These findings are consistent with evidence from clinical and occupational studies showing that mentalization-based approaches improve emotional regulation, interpersonal functioning, and overall psychological well-being (Hajek Gross et al., 2024; Salmanian et al., 2021; Soleimani et al., 2021).

The improvement in psychological well-being in the mentalization group is also in line with Ryff's eudaimonic framework, which emphasizes autonomy, environmental mastery, and positive relations with others as core components of well-being (Ryff, 2013). Enhanced mentalization may facilitate a greater sense of agency and environmental mastery by helping individuals understand the psychological drivers of their own behavior and that of colleagues and supervisors. This enhanced understanding can foster more effective interpersonal interactions and a stronger sense of meaning and competence at work, thereby contributing to improved well-being (Heintzelman & Diener, 2019; Locati et al., 2025).

The compassion-based intervention, however, demonstrated a significantly greater effect than the mentalization-based intervention in reducing perceived stress and enhancing psychological well-being. This finding is theoretically coherent with compassion-focused models that directly target the emotional systems most implicated in chronic stress and burnout. Compassion-based interventions aim to downregulate the threat system and activate the soothing and affiliative systems, thereby reducing self-criticism, shame, and hyperarousal—processes that are particularly salient in burnout (Inwood & Ferrari, 2018; Murthy, 2022). Workers experiencing burnout often engage in harsh self-evaluation and persistent rumination about perceived failures or inadequacies, which amplify stress and erode well-being. By cultivating self-kindness, common humanity, and mindful awareness, compassion-based interventions directly counter these maladaptive patterns.

The superior effectiveness of the compassion-based intervention is consistent with systematic reviews and meta-analyses demonstrating robust effects of compassion training on stress reduction and well-being in occupational and healthcare settings (Biber & Ellis, 2021; Gutiérrez-Cobo et al., 2024). Empirical studies have shown that even brief compassion-focused interventions can lead to significant improvements in emotional balance and reductions in perceived stress among stressed employees (Healy et al., 2024; Matos et al., 2022). The present findings extend this literature by providing comparative evidence suggesting that compassion-based approaches may be particularly potent for workers with established burnout, likely due to their direct focus on emotional safety and self-soothing processes.

Another important finding of this study is the stability of intervention effects at follow-up. The maintenance of reduced stress levels and enhanced psychological well-being suggests that both interventions fostered enduring changes rather than transient symptom relief. This durability may reflect the acquisition of transferable psychological skills—such as reflective awareness in mentalization and self-compassion practices in compassion-based therapy—that participants could continue to apply in their daily work lives. Previous longitudinal research similarly indicates that interventions targeting core emotional and cognitive processes are more likely to produce sustained benefits compared to interventions focused solely on situational coping strategies (Foster et al., 2023; Meier & Kim, 2022).

The findings also have implications for understanding differential mechanisms of change. While both interventions improved outcomes, their distinct emphases may explain the observed difference in magnitude. Mentalization primarily enhances cognitive–affective understanding and interpersonal insight, which may indirectly reduce stress by improving communication and emotion regulation (Bateman, 2022; Kim & Woo, 2025). Compassion-based intervention, by contrast, directly addresses affective suffering and threat-based emotional responses, offering

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immediate relief from self-criticism and emotional overload. In high-stress industrial environments, where workers may have limited control over external demands, interventions that rapidly increase emotional safety and self-soothing may exert stronger effects on perceived stress and well-being (Firoozkouhi Moghadam et al., 2024; Firouzkouhi Moghaddam et al., 2024).

These results are particularly relevant in light of evidence indicating high prevalence rates of burnout, anxiety, and depression among workers in demanding occupational contexts. Studies across healthcare, education, and industrial sectors consistently document strong associations between burnout, perceived stress, and diminished well-being (Alenezi et al., 2022; Kwak et al., 2021; Vaičienė et al., 2022). The present study contributes to this literature by demonstrating that structured, group-based psychological interventions can meaningfully mitigate these outcomes even in non-clinical, workplace-based populations.

The findings also align with broader organizational psychology research emphasizing the importance of employee mental health for performance, engagement, and organizational sustainability. Burnout has been linked to reduced productivity, increased turnover intentions, and compromised quality of work (Hodkinson et al., 2022; Lucas et al., 2022). By reducing stress and enhancing psychological well-being, interventions such as those examined in this study may indirectly contribute to improved organizational outcomes. This is consistent with models proposing that employee well-being is a key mediator between workplace conditions and performance-related outcomes (Catană et al., 2022; Le et al., 2024).

In the Iranian industrial context, where psychological interventions in workplaces are still relatively limited, the present findings provide valuable empirical support for the feasibility and effectiveness of group-based interventions delivered on-site. Previous Iranian studies have highlighted elevated levels of burnout and emotional difficulties among workers and healthcare professionals, underscoring the need for accessible and culturally adaptable interventions (L. Moradi et al., 2023; L. M. Moradi et al., 2023). The current study extends this line of research by offering comparative evidence that can inform intervention selection and policy decisions.

5. Conclusion

Overall, the results suggest that while both mentalization-based and compassion-based interventions are effective for reducing perceived stress and enhancing psychological well-being among workers with job burnout, compassion-based intervention may offer greater benefits in contexts characterized by high emotional burden and chronic stress. These findings support integrative occupational mental health models that prioritize both reflective capacities and emotional safety, while also highlighting the particular value of compassion-focused approaches for burnout prevention and recovery.

Despite its contributions, this study has several limitations that should be considered when interpreting the findings. First, the sample was limited to male workers from a single industrial factory, which restricts the generalizability of the results to other occupational groups, sectors, and female workers. Second, the reliance on self-report measures may have introduced response biases such as social desirability or common method variance. Third, although a follow-up assessment was conducted, the duration was relatively short, and longer-term outcomes remain unknown. Finally, the quasi-experimental design, while methodologically robust, does not allow for full causal inference to the same extent as randomized controlled trials with larger and more diverse samples.

Future studies are encouraged to replicate these findings using randomized controlled designs with larger and more diverse samples across different industries and cultural contexts. Longitudinal research with extended follow-up periods would be valuable for examining the long-term sustainability of intervention effects. Additionally, future research could explore mediating mechanisms, such as changes in emotion regulation, self-criticism, or interpersonal functioning, to better understand how mentalization-based and compassion-based interventions exert their effects. Comparative studies integrating physiological indicators of stress alongside self-report measures may also provide a more comprehensive understanding of intervention outcomes.

From a practical perspective, organizations are encouraged to integrate structured psychological interventions into workplace health programs, particularly in high-stress environments. Compassion-based interventions may be prioritized for employees experiencing pronounced burnout and emotional exhaustion, while mentalization-based approaches may be especially useful for improving interpersonal functioning and team dynamics. Delivering these interventions in group formats within the workplace can enhance accessibility and cost-effectiveness. Training occupational psychologists and human resource

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professionals in these evidence-based approaches may contribute to sustainable improvements in employee mental health and organizational functioning.

Authors' Contributions

M.M.B. was responsible for the study conception, design, and development of the intervention protocols. M.G.P. coordinated participant recruitment, oversaw data collection at the industrial site, and contributed to the methodological framework. T.S. conducted the statistical analyses, interpreted the results, and drafted the initial version of the manuscript. All authors contributed to the refinement of the manuscript, reviewed it critically for important intellectual content, and approved the final version for publication.

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

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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