

Original Article

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Effects of Mindfulness-Based Stress Reduction on Positive Affect, Negative Affect, and Emotional Exhaustion of Employees With Occupational Stress

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Abstract

Background & Aims: An increase in occupational stress can cause physical and psychological disorders as well as mental complications and emotional distress in employees. The present study aimed to investigate the effects of mindfulness-based stress reduction (MBSR) on positive affect, negative affect, and emotional exhaustion of employees with occupational stress.

Materials and Methods: This quasi-experimental research adopted a pretest-posttest control group design with follow-up. The statistical population included all employees with occupational stress at public organizations in Isfahan (Isfahan Province, Iran) in 2021. The convenience sampling method was employed to select 30 employees, who were randomly assigned to two 15-member groups called the MBSR group and the control group. The members of the MBSR group participated in eight intervention sessions, whereas the members of the control group received no intervention. After the participants completed the positive and negative affect and emotional exhaustion questionnaires in three stages, the repeated measures analysis of variance (ANOVA) was used for data analysis in SPSS 26.

Results: The posttest and follow-up results indicated that the MBSR intervention decreased negative affect and exhaustion and increased positive affect in employees with occupational stress (P<0.001). The repeated measures ANOVA results of withingroup effects showed that the effects of treatment were persistent (P<0.001).

Conclusion: According to the results, MBSR could improve positive affect and mitigate negative affect and emotional exhaustion in employees. Organizations can use MBSR courses to promote the psychological and emotional well-being of their staff. Keywords: Mindfulness, Stress, Burnout, Professional, Emotions, Occupational health

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1. Introduction

Known as a major source of stress, occupational stress has become a widespread and costly workplace problem. In recent years, the United Nations introduced it as the disease of the 20th century, and the World Health Organization recognized it as a widespread problem [1]. Occupational stress is an adverse reaction to the pressure and burden of work. In other words, it is a disequilibrium between workplace demands and the person's adaptability [2,3]. Correlated with a global and national recession, the recent rise in occupational stress can cause physical and psychological disorders as well as mental complications and emotional distress in employees [4,5].

Repeated interactions with clients can emotionally exhaust employees in the service sector, which requires extensive employee-client interaction [6]. Considered a reaction to persistent workplace stressors, emotional exhaustion includes the sense of inadequacy to present work-related information and a lack of emotional energy and perception that would convey a self-perception of emotional depletion [7]. Characterized by the sense of mental exhaustion or emotional depletion, it is a key component of burnout. This construct leads to various organizational outcomes such as excessive absenteeism and personal inadequacies (e.g., increased depression and mental health disorders) [8].

Occupational emotion is a major factor in stress-related conditions in the workplace [9]. Positive affect is achieved when a job helps employees achieve transcendental values or participate in altruistic activities. The positive affect of employees can impact group interactions beyond the personal level, such as group cooperation and team innovation. Positive affect is the current degree of fulfillment, eagerness, and progress toward the objective [10]. People with low positive affect feel languid, indifferent, and exhausted. Known as a normal stress response, negative affect means exhaustion after experiencing workplace stress, which typically leads to negative reactions to others and negative self-evaluation. Negative affect is more widespread in organizations than positive affect [11,12]. Studies have confirmed the importance of mental well-being and personal success outcomes of positive affect compared with negative affect [13]. The outcomes of negative affect include low selfesteem, dissatisfaction, stress, and physical symptoms [14]. With widespread evidence of its role in improving



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psychological performance and well-being in clinical and non-clinical settings, mindfulness has become a popular psychological intervention worldwide [15]. Mindfulness focuses attention on present internal and external experiences and leads to acceptance of events without change. It includes special and purposive attention in the present without prejudice and judgment [16]. Although most studies on mindfulness-based interactions in the workspace explore its effects on occupational stress [17,18], several studies mention cognitive-emotional variables and improved workplace conditions [19,20]. Janssen et al. [21] reported that mindfulness-based stress reduction (MBSR) improved mental health and promoted occupational engagement and performance. Fernandes et al [22] discovered that mindfulness-based interventions for primary health specialists improved astuteness and fatigue and reduced the risk of stress-related diseases. Kim et al [23] concluded that MBSR reduced perceived stress and negative affect significantly. Regarding the emotional exhaustion of health specialists, Marotta et al [24] reported that MBSR alleviated distress and occupational burnout.

Among the most important reasons for conducting this research, the following can be mentioned: In Iran, many treatments have been used to reduce occupational stress and improve the psychological well-being of different strata of society, but the method of mindfulness, which is a new approach in third-wave cognitive-behavioral treatments, has not been investigated. Therefore, this issue is one of the reasons for choosing MBSR treatment over other treatment approaches. Considering the prevalence of the problem of occupational stress among employees and taking into account the vacuum and lack of research in this field, the necessity of conducting such research is felt. Also, due to the problems and costs that job stress has on employee productivity, it seems necessary to use an effective treatment to control it. In addition, according to the theoretical and research bases, it was concluded that the treatment of stress reduction based on mindfulness is an effective approach in the field of health and may be effective in the field of occupational stress reduction. Therefore, according to the research gap, the main objective of the current study was to investigate the effectiveness of MBSR on positive affect, negative affect, and emotional exhaustion of employees with occupational stress. Based on this, the most important hypotheses of the present study were as follows: MBSR is effective on the positive and negative affect of employees with occupational stress. MBSR treatment is effective on the emotional exhaustion of employees with occupational stress.

2. Materials and Methods

This quasi-experimental research adopted a pretestposttest control group design with a one-month follow-up period. The statistical population included all employees with occupational stress in public organizations in Isfahan (Isfahan Province, Iran) in 2021. To this end, the convenience sampling technique was adopted to select 30 employees, who were then randomly assigned to two 15-member groups (i.e., MBSR and control). The MBSR group received eight 45-minute sessions, whereas the control group received no intervention. The inclusion criteria were as follows: having an office job in Isfahan, experiencing occupational stress [obtaining a low score (score below 101) in the Occupational Stress Questionnaire-HSE], being aged 25–55 years, and giving informed consent. However, the exclusion criteria were as follows: revoking consent, undergoing simultaneous psychological or psychiatrist therapy, and being absent in more than two therapy sessions.

2.1. Instruments

Emotional Exhaustion Scale: This 9-item questionnaire was prepared based on the burnout subscales of the Maslach and Jackson Burnout Inventory [25]. The items were scored on a five-point Likert scale (ranging from 5 for "completely disagree" to 1 for "completely agree") with respective maximum and minimum scores of 45 and 9. The validity of this scale was confirmed by Moalemi et al [26] in the nursing community. Moreover, Moalemi et al [26] reported a Cronbach's alpha of 0.85 for the Emotional Exhaustion Scale.

Positive Affect and Negative Affect Scale (PANAS): Developed by Watson et al [27], this self-reporting scale has 20 items (10 on positive affect and 10 on negative affect) for measuring the intensity of positive and negative affect. It is scored on a Likert scale from "completely agree" (5) to "completely disagree" (1). Lotfi et al [28] evaluated and confirmed the validity of the Persian version of PANAS in Iranian society. Lotfi et al [28] reported a Cronbach's alpha of 0.85 for the PANAS.

Occupational Stress Questionnaire: This questionnaire was developed by Cousins et al [29] in order to create a suitable tool for measuring occupational stress. The questionnaire consists of 35 questions in a 5-point Likert scale (never, rarely, sometimes, often, and always) with a score of 1 being unfavorable to 5 being favorable. The minimum score of the questionnaire is 35 and the maximum score is 175, so a high score in this questionnaire indicates low job stress, and a low score indicates a high level of stress. Azad Marzabadi and Gholami Fesharaki [30] reported a Cronbach's alpha of 0.78 for the Occupational Stress Questionnaire.

2.2. Procedure

After screening based on the inclusion and exclusion criteria, participants were randomly assigned to therapy and control groups with a pretest for all members. Then, for 60 minutes each week, the therapy group attended eight 45-minute MBSR sessions based on the Kabat–Zinn training package [31], whereas the control group received no treatment. Table 1 presents an overview of the contents

Table 1. Overview of contents in mindfulness-based stress reduction (MBSR) sessions

Session	Content	Торіся
1	Automatic guidance	Explaining the session, treatment goals, and the need for mindfulness training and the automatic guidance system.
2	Overcoming obstacles	Body scan exercise and providing feedback to participants, introducing the mindful breathing meditation
3	Mindful breathing	Mindful sitting and feedback to participants and introducing the three-minute breathing space exercise
4	Staying in the moment	Introducing the five-minute "seeing or hearing" exercise and repeating the mindful breathing and body scan exercises
5	Permission to attend	Breathing exercise, introducing the sitting meditation of "mindful breathing, body, sounds, and thoughts", information on stress, recognizing pleasant and unpleasant events on feelings, thoughts, and bodily sensations.
6	Thoughts are not facts	Mindful yoga exercise, introducing the different subject of seeing thoughts or surrogate thoughts, and sitting meditation
7	How to take the best care of myself?	Introducing mental health and listing delightful activities and exercises from previous sessions
8	Acceptance and change	Body scan exercise, checking and discussing programs

of MBSR sessions.

2.3. Data analysis

The repeated measures ANOVA and the Bonferroni post hoc test were used for data analysis in SPSS 26.

3. Results

There were no significant differences between the two groups in terms of demographic indicators including gender, marital status, and age of employees (Table 2). According to the descriptive statistics, the MBSR group had lower post-test and follow-up scores in negative affect and emotional exhaustion and higher positive affect than their pretest means (Table 3).

Before mixed ANOVA, the homogeneity of variance and normality of score distribution assumptions were checked. Levene's test for positive affect (F=0.05, P=0.829) and negative affect (F=1.07, P=0.309) and emotional exhaustion (F=1.32, P=0.275) confirmed the homogeneity of variance assumption in the MBSR and control groups. The Shapiro–Wilk test for normal score distribution verified the normal distribution of scores in positive affect (the Shapiro–Wilk test=0.951, P=0.174), negative affect (the Shapiro–Wilk test=0.975, P=0.674), and emotional exhaustion (the Shapiro–Wilk test=0.950, P=0.167) with a similar distribution to the population.

With the covariance test, the intergroup effect was examined by controlling the effect of the pretest on posttest and follow-up scores of dependent variables. After the pretest effects were eliminated, the results indicated a significant difference in the average intergroup scores of the experimental and control group in posttest on positive affect (F=116.81, P=0.001), negative affect (F=130.62, P=0.001). In the follow-up stage, there was also a significant difference in the average between-group scores of the MBSR and control groups (after the pretest effects were eliminated) in positive affect (F=162.81, P=0.001), negative affect (F=188.90, P=0.001), and emotional exhaustion (F=127.84, P=0.001).

Table 2. Demographic variables of the participants

Variables		MBSR group	Control group	Р	
Mean (SD) age (years)		35.68 ± 7.57	37.38±7.81	0.549	
	Single	8 (53.33%)	7 (46.67%)	0.719	
Marital status	Married	7 (46.67%)	8 (53.33%)		
	Male	8 (53.33%)	9 (60.0%)	0.717	
Gender	Female	7 (46.67%)	6 (40.0%)		

Table 3. Mean (SD) of research variables in experimental and control groups

Variables	Dhassa	MBSR group	Control group	_ P (between groups)	
variables	rnases	Mean ± SD	Mean ± SD		
	Pre-test	29.00 ± 1.73	28.33 ± 1.68	0.291	
Positive affect	Post-test	38.60 ± 2.86	27.60 ± 1.80	0.001	
uncet	Follow-up	39.80 ± 2.62	27.33 ± 1.79	0.001	
	Pre-test	37.13 ± 2.32	35.46 ± 2.77	0.084	
Negative affect	Post-test	26.06 ± 3.71	36.00 ± 2.36	0.001	
	Follow-up	24.73 ± 3.39	36.33 ± 2.05	0.001	
	Pre-test	36.33 ± 2.49	34.73 ± 3.15	0.134	
Emotional exhaustion	Post-test	24.26 ± 4.41	35.06 ± 2.89	0.001	
	Follow-up	25.20 ± 4.30	35.13 ± 2.87	0.001	

The persistence of therapy was examined through the repeated measures ANOVA. The within-group significance of time for positive affect (F=101.19, P=0.001), negative affect (F=164.92, P=0.001), and emotional exhaustion (F=101.72, P=0.001) confirmed the significant difference between the three measurements. The interaction effect of time with the group was also significant in positive affect (F=143.07, P=0.001), negative affect (F=206.83, P=0.001), and emotional exhaustion (F=116.92, P=0.001) (Table 4).

Moreover, the Bonferroni post hoc test was used for pairwise examination of the significance of the mean difference in different stages of measuring dependent variables. According to the results in Table 5, there was a significant difference between the average pretest, posttest, and follow-up scores of positive affect, negative affect, and emotional exhaustion (P < 0.001).

Table 4. Repeated measurement results for the effects of time and interaction time and group

Variable	Source	SS	df	MS	F	Р	η2
Desitive offerst	Time	438.82	1.13	387.23	101.16	0.01	0.78
Positive allect	Time × group	620.42	1.13	547.48	143.07	0.01	0.83
	Time	727.75	1.14	637.22	164.92	0.01	0.85
Negative affect	Time × group	612.68	1.14	799.15	206.83	0.01	0.88
Franking Laukausting	Time	527.35	1.11	472.86	101.72	0.01	0.78
emotional exhaustion	Time × group	606.15	1.11	543.52	116.92	0.01	0.80

MS, mean sum of squares; SS, sum of squares; df, degrees of freedom.

 Table 5. Results of pairwise comparison of the research variables

Variables	Phases	Mean difference	SE	Р
Desition offerst	Pre-test-post-test	-4.43	0.46	0.001
Positive allect	Pre-test-follow-up	-4.90	0.45	0.001
	Pre-test-post-test	5.76	0.47	0.001
Negative affect	Pre-test-follow-up	6.26	0.45	0.001
Emotional	Pre-test-post-test	4.86	0.50	0.001
exhaustion	Pre-test-follow-up	5.36	0.49	0.001

SE, standard error.

4. Discussion

The present study aimed to investigate the effects of MBSR on positive affect, negative affect, and emotional exhaustion of employees with occupational stress. The results illustrated that MBSR alleviated the negative affect and exhaustion and improved the positive affect of employees with occupational stress in the posttest with a persistent effect.

Regarding the effects of MBSR on positive affect and negative affect, the results are consistent with the findings reported by Kim et al [23]. Also, in line with the current study, Mirzaee and Shairi [32] reported that MBSR was effective in reducing depression symptoms and negative emotions in non-clinical population. Goudarzi et al [33] reported that cognitive therapy based on mindfulness is effective to enhance positive affect in people with depression symptoms. Mindfulness techniques are designed to improve clients' awareness and alter challenging circumstances, including emotional states and situations, without automatic and habitual reactions. Mindfulness training enables individuals to accept emotional experiences as separate elements and transitory states that could change. The explicit and implicit emotional states of mindful people are more compatible, and the greater awareness of emotions enables them to moderate their response to negative stimuli [15]. After relaxation and mindfulness-based exercises and discussion, employees observe their feelings and emotional states with a non-judgmental approach. Instead of avoiding cognitive, emotional, and physical occupational stressors, they were trained to survey and question these experiences and their roots [16]. These outcomes can back the effects of MBSR on positive affect and negative affect.

Regarding the effects of MBSR on emotional exhaustion, the findings are in line with the results reported by Menardo et al [18] and Fernandes et al [22]. Mindfulness trains individuals to be aware of their mental states at every moment and focus on different mental approaches. Perceiving internal and external realities openly and clearly, mindful individuals can properly deal with various thoughts, emotions, and experiences (both pleasant and unpleasant) [21]. By improving selfregulation and strengthening social relationships in the workplace, mindfulness makes employees more flexible in the face of challenges and promotes performance. It is therefore a novel approach for establishing more effective relations with life in order to relieve pains, enrich life, and make it more meaningful in the workspace. When they discover uncontrollable stressors outside life, such as workspace, while methods of countering stress and responding to workplace stressors can be changed, mindfulness exercises lead to positive changes to the psychological functions of employees. In addition to lower stress, they also experience lower emotional exhaustion

One limitation of this study is its restriction on government employees, which calls for caution when generalizing results to other samples. This study also employed a self-reporting questionnaire for measuring employees' positive affect and negative affect. It is therefore recommended to measure the positive affect and negative affect of employees with other instruments, such as pulse and blood pressure. It is also recommended to replicate this study on private-sector employees.

5. Conclusion

MBSR mitigated negative affect and emotional exhaustion and improved positive affect in employees with occupational stress. Therefore, organizations can employ experienced psychologists and hold MBSR courses to promote the psychological and emotional well-being of their staff.

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Authors' Contribution

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Competing Interests

The author declares that the author has no conflict of interest.

Ethical Approval

The written consent has been obtained from all participants. The Ethics Review Board of Islamic Azad University-Isfahan (Khorasgan) Branch, approved the present study (code: IR.IAU. KHUISF.REC.1399.128).

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