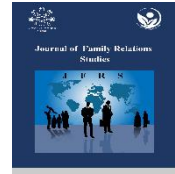




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Research Paper

How did the Mindfulness-based Cognitive Therapy (MBCT) change family employee females through Single case experimental designs (SCED)? Decreased the Work-family conflict and increased the psychological well-being



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ABSTRACT

Objective: Managing occupational burnout facilitates the restoration of psychological well-being and is influenced by factors such as work-family conflict.

Methods: The current research aimed to determine the effectiveness of MBCT on work-family conflict and psychological well-being in women with a Single Case Experimental Design of the AB type. The statistical population comprised all employed women who sought counseling at the Mehrzad Center in 2023. For data collection, Rastegar Khaled's Work-Family Conflict Questionnaire (2006) and Ryff's Psychological Well-Being Scale (1989) were utilized. It was observed that an improvement percentage below 50% indicates the intervention is not clinically significant, except for Participant 3. Additionally, the fact that the Reliable Change Index is greater than 1.96 at $P < 0.05$ suggests that the intervention holds statistical significance. With 95% confidence, it can be stated that the observed change in post-test scores is statistically significant. The analysis of the data was conducted through chart analysis, the Percentage of Non-overlapping Data (PND), and the Percentage of Overlapping Data (POD).

Results: The research revealed that the psychological well-being scores of the three subjects improved by 30.6% overall, and their work changes and overall improvement percentage were 36.9%. These scores indicate a change and increase in psychological well-being, as well as a reduction in work-family conflict. In all three participants, the acceptable change index (RCI) for both variables was $RCI \geq 1.96$, at the 95% confidence level, indicating that the intervention was statistically significant.

Conclusion: It is recommended that this method be explored and utilized as an effective intervention for enhancing psychological well-being and reducing work-family conflict.

1. Introduction

Employed women, in addition to their job responsibilities, are also tasked with household duties. Work and family constitute two primary aspects of an individual's life, each influencing a unique dimension of

human behavior (Althammer et al., 2021). It is essential for individuals to achieve a balance between these facets. As a result, they are often subject to stresses and strains resulting from extended exposure to occupational

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stressors and a lack of adequate control and support. Elements such as psychological capital, developmental resources, social support, effective role management, and self-efficacy serve as aids for married working women, who are constantly adapting to changing roles. Occupational burnout can develop when these pressures surpass an individual's coping capacity. This multidimensional psychological syndrome arises under such conditions (Althammer et al., 2021) and can lead to greater misuse of substances and alcohol, increased physical and mental health problems, reduced work efficiency, and lowered satisfaction with life (Lambert et al., 2022).

Work-family conflict (WFC) is also a type of negative entanglement between roles, wherein pressures stemming from job and family are disproportionate, and the various roles and demands are incompatible. It acts as an intermediary between the demands of the job and the work-family conflict, ultimately resulting in occupational burnout (Rhéaume, 2022). Occupational burnout is a significant concern for employees, as job stress can lead to burnout. This issue requires attention since the process of burnout increases job errors (Dick, 2023).

On the one hand, a critical index that holds special significance among individuals and can influence MBCT is Psychological Well-Being (PWB). Psychological Well-Being is the perception and evaluation of one's life cycle, measured through emotional and cognitive criteria. Its primary components include pleasant emotions, satisfaction, and a low level of negative mood (Strauss et al., 2021). This concept emphasizes its significant impact on individuals' mental and physical health. Psychological Well-Being is a state of contentment, happiness, life satisfaction, and a sense of achievement. This means that if a person is happy, satisfied with life, and feels they have accomplished their goals, they can achieve psychological satisfaction (Abolnasser et al., 2023).

Every individual possesses a unique capacity for psychological well-being. Psychological Well-Being refers to individuals having positive self-esteem, positive relationships with others, and a purpose in life. They can develop their potential through personal growth, feeling happy, capable, supported, and satisfied with life (Lim & Tierney, 2023). Embracing the dimensions of a lifestyle that enhances well-being and actively pursuing such a lifestyle can aid in maintaining and improving overall health, psychological well-being, and self-actualization (Nekoei et al., 2024).

MBCT plays an effective role in reducing occupational burnout and enhancing psychological well-being. Through various exercises, this therapeutic approach facilitates attention to physical situations in the present moment and reduces automatic processing. Research reviews indicate that mindfulness leads to increased attention to thoughts,

emotions, and practical inclinations, aligning adaptive behaviors and positive psychological states and improving individual capabilities (Querstret et al., 2020).

Consequently, metacognitive and cognitive-behavioral approaches in mindfulness offer specific strategies designed to merge attention processes and diminish inhibitory actions when confronting stressors and formulating responses to them. Within Mindfulness-Based Cognitive Therapy, the non-judgmental observation of thoughts and their recognition as mere thoughts rather than concrete realities or truths provides a pathway for transforming attitudes and lessening negative emotions across diverse situations (Mansoori & Khodabakhshi-Koolae, 2023; Segal et al., 2012; Sabetroo, et al. 2023).

Recent studies provide evidence suggesting that for the integration of work and personal life domains, or for an individual to create mental distance from work and manage their thoughts and feelings, it is necessary to cognitively and emotionally separate these life areas. Mindfulness can reduce the impact of stressors on work. The first component of the two-part model of mindfulness is presence. The second component is attention, but without ruminating on thoughts and emotions. Practitioners of mindfulness learn to become aware and then detach themselves from work-related thoughts (Althammer et al., 2021). Mindfulness techniques are practiced all day long to allow a person to react correctly to environmental stressors. Furthermore, people learn to resist "automatic pilot," conditioning, and harmful reactions. Mindfulness training breaks up rumination and anxiety, which can reduce (Zargar et al., 2024).

Based on the discussion mentioned above and considering the emergence of occupational stress and work-family conflict, which lead to decreased life satisfaction, imbalance in work and family roles, reduced organizational performance, harm to the health of female employees, marital dissatisfaction, and spousal discord (Makipour et al., 2021), the necessity of implementing appropriate educational interventions is highlighted. (Mikaeili et al, 2024).

Moreover, the effectiveness of adaptive coping training and stress reduction through Mindfulness-Based Cognitive Therapy, which focuses on tolerance to stress and various psychological and occupational components, is emphasized. Considering the influence of work-family conflicts on women and their subsequent effects on families, clinical studies have emphasized the significance of directing attention toward the management of mental health issues. However, this aspect has often been overlooked in workplace environments, especially in certain service sectors where employees are more susceptible to stress and occupational burnout (Aflakifard & Ghalehnoei, 2023; Bayighomog et al., 2023). Due to the

lack of research, training was provided individually and in the form of a one-case information plan.

In this context, as Mindfulness-Based Cognitive Therapy focuses both on stress tolerance and the enhancement of well-being, there is growing evidence that it improves stress management, mental health, and well-being in workplace environments (Strauss et al., 2021). The present study was conducted with the aim of determining whether the effectiveness of Mindfulness-Based Cognitive Therapy in addressing work-family conflict and enhancing psychological well-being among employed women experiencing occupational burnout.

2. Materials and Methods

Study design, statistical population, inclusion and exclusion criteria, the research method, considering the experimental nature of the aforementioned model, and the importance of accounting for individual differences in configuring the model under study, is a Single Case Experimental Design. This falls within the category of within-group experimental designs and is an AB-type case study (Kazdin, 2021). The study focused on examining the impact of Mindfulness-Based Cognitive Therapy on work-family conflict and psychological well-being. It centered on evaluating the effects of the variable on one or more participants. In this design, 3 participants and one participant as a control group were involved over ten sessions, divided as follows: 2 evaluation sessions (Initial baseline phase - Phase A) and eight intervention sessions (Treatment Phase - Phase B) the scores of Psychological Well-being and Work-Family Conflict over five assessment sessions – two baseline sessions and three intervention sessions. Fewer studies have been conducted using the Single Case Experimental Design, and the detrimental feedback from such research has not been addressed. This can covertly lead to a reduction in mental health components, psychological well-being, occupational burnout, and organizational productivity. The difference between this research and previous samples includes the examination of these factors, which contribute to the enhancement of psychological well-being measures. The statistical population of this research comprised all married employed women aged 30 to 45 who visited the Mehr Azin private Counseling Center in the year 2023. After announcing a call for participation in the research, readiness was declared. In the subsequent phase, following the receipt of informed consent, interviews were conducted with individuals, and all participants completed the Maslach Burnout Inventory. A score between 50 and 70 ensured the presence of occupational burnout, and three individuals were selected for the study. Burnout Inventory as a criterion for entering the research. The criteria for entering the

research included a willingness to participate and full cooperation. Failure to receive psychological treatment, especially mindfulness treatment, before entering the research. In case of drug use, it is possible to keep the type and amount of drug constant during the research. Not receiving mindfulness therapy during the study, being a government employee, and having over ten years of employment. Participants were assured that their personal information would remain confidential and they could withdraw from the study at any time if they wished. The criteria for withdrawing from the research include the person's unwillingness to cooperate in every stage of the research, the existence of risks for the person that make it impossible not to receive and keep the medicine stable, and the inability to do homework.

Maslach Burnout Inventory: The Maslach Burnout Inventory (1981) is a validated questionnaire designed to provide a new assessment of the phenomenon of stress or burnout. The conflict between expectations and desires may lead to emotional exhaustion, mental fatigue, and physical exhaustion, which is generally classified as job burnout. It focuses on measuring emotional exhaustion and depersonalization phenomena, as well as the lack of personal accomplishment in a professional context. This questionnaire contains 22 items that assess occupational burnout and has been validated (Maslach et al., 1997). The questionnaire's reliability was reported to be 0.87 for this research. The internal consistency coefficient (Cronbach's alpha) between 0.76 and 0.91 is reported.

Work-Family Conflict Scale Questionnaire (Rastgar Khaled, 2002): The questionnaire includes components that measure work-family conflict. It comprises 17 items, with eight items assessing work-family conflict and the remaining nine items measuring family-work conflict. The scoring method and response range are based on a five-point Likert scale (Rastgar Khaled, 2002), with a score that can range from 17 to 85. The questionnaire's reliability was reported to be 0.88 for this research.

Ryff's Psychological Well-Being Scale (RSPWB): The Psychological Well-Being Scale (RSPWB) is a multidimensional model of psychological well-being aimed at facilitating the flourishing of an individual's existential capabilities. A theoretical model of psychological well-being that encompasses 6 distinct dimensions of wellness (Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, Self-Acceptance) was tested. It views psychological well-being as a comprehensive developmental process that spans one's lifetime. This questionnaire contains 18 items. Scoring method: This scale consists of 18 items and is scored on a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree); the minimum score that can be obtained

is 18, and the maximum is 108. The scale comprises six factors, with three questions per factor and one total score (Ryff & Keyes, 1995). The Cronbach's alpha is approximately 0.75 reported for the present research.

Study procedure: Three participants were evaluated using an online burnout questionnaire. The initial plan was selected based on the timing, chosen approach, and hypotheses of the research. This study had two phases: a preliminary investigation and a primary examination. The first phase aimed to acquaint, orient, and prepare the individual with the therapeutic method and treatment protocol. Discussions were conducted to reach an agreement on the goals, methods of execution, and timing of the sessions, following which informed consent was obtained.

The participants commenced their involvement in the study such that, following the initial sessions conducted weekly, Mindfulness-Based Cognitive Therapy began and was carried out bi-weekly. During the initial phase, specifically in the baseline period for assessments, the Psychological Well-being and Work-Family Conflict questionnaires were filled out twice. The initial results from these questionnaires were preserved for later comparison with the final outcomes. The Mindfulness-Based Cognitive Therapy intervention followed an eight-session protocol. The Psychological Well-being and Work-Family Conflict questionnaires were completed at the end of the first, fifth, and eighth sessions, and the data collected were subsequently analyzed. Throughout the sessions, follow-up phone calls were also scheduled (Barnhofer et al., 2023).

Table 1. Topic and description of cognitive behavioral management sessions on the mind, the program was developed, and sessions were conducted as described (Barnhofer et al., 2023)

Session Topic	Session Description	Tasks
Session 1: Awareness and Auto Pilot	The concept of mindfulness is the understanding of the concept of environmental stress.	Practice body scanning to measure daily stress and how to respond to self-generated thoughts.
Session 2: Living in Our Minds - Staying in the Present	Practice thoughts and feelings, use a calendar, and try a five-minute breathing meditation exercise.	Practice breathing meditation once a day and fill out the pleasant event calendar.
Session 3: Gathering the Scattered Mind (Doing mind)	Current feelings and sensory experiences in the present state; practice and discussion of an unpleasant event calendar	Three-minute breathing space and body scan meditation practice.
Session 4: Recognizing Aversion, Cognitive Distortions, Rumination	Identifying negative thoughts; The 5-minute exercise to exit the usual automatic state; Using the metaphor of 'monkey mind'	be more present in the moment. Techniques such as 10-minute breathing meditation and the ABC form
Session 5: Teaching the Concept of Acceptance to Participants,	help them detach from internal resistance and immerse in the experience of being present.	40-minute seated meditation practice (3 times a week) and internal-external practice
Session 6: "Thoughts Are Not Reality"	Identify negative thoughts and allow them to pass without dwelling on them.	Participants develop the skill to differentiate between thoughts and reality.
Session 7: Self-Care, Compassionate	Explaining the concept of self-compassion..	Mindfulness practice to improve quality and style
Session 8: Review of Past Content and Stress	Utilize what we have learned in this session. Continuation of integration and counteractive self-talk	Discussion and individual strategies for life continuation, being attentive to even small mood changes.

Data Analysis: The analysis of the data was conducted through chart analysis, determining the percentage of improvement, a reliable change index, and inter-situational analysis, as well as the Percentage of Non-overlapping Data (PND) and the Percentage of Overlapping Data (POD).

3. Results

In this section, the progression of changes in the scores of Psychological Well-being and Work-Family is presented in the form of a table and a chart. In the improvement percentage formula, the individual's pre-test score is subtracted from their post-test score, and this result is then divided by the pre-test score and multiplied by 100. To calculate the Reliable Change Index (RCI), the difference between each subject's post-test score (X post) and pre-test score (X pre) is divided by twice the standard error of measurement squared. The standard error of measurement is determined using the standard deviation

of the variable under treatment before the treatment, and r is the reliability coefficient, which can be the test-retest reliability or the internal consistency coefficient (Cronbach's alpha) of the treatment outcome variable.

In Figure 1, by examining the pattern of changes for the four participants in the work-family conflict questionnaire during both baseline and intervention phases, the decreasing trend of the participants' scores and the overall decline in scores demonstrate the effectiveness of the intervention.

The overall improvement percentage after the therapy sessions was 30.6, but the improvement percentage from the first intervention session to the last showed an increase, indicating that, in addition to the stability of the intervention's effect, the consolidation of practices and habits occurred effectively over time. Persistence in implementing the training can lead to an increase in effectiveness.

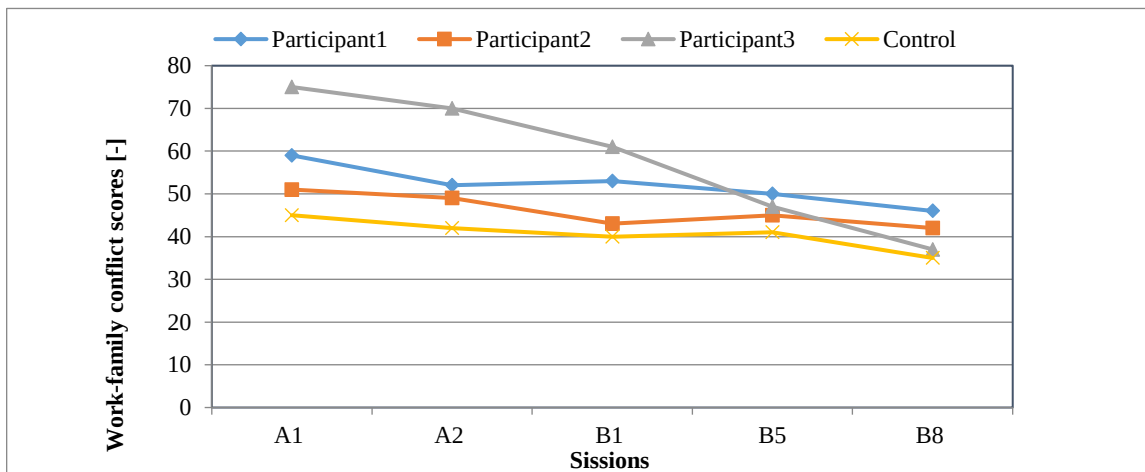


Figure 1. The trend of changes in work-family conflict scores for the three participants and the control group

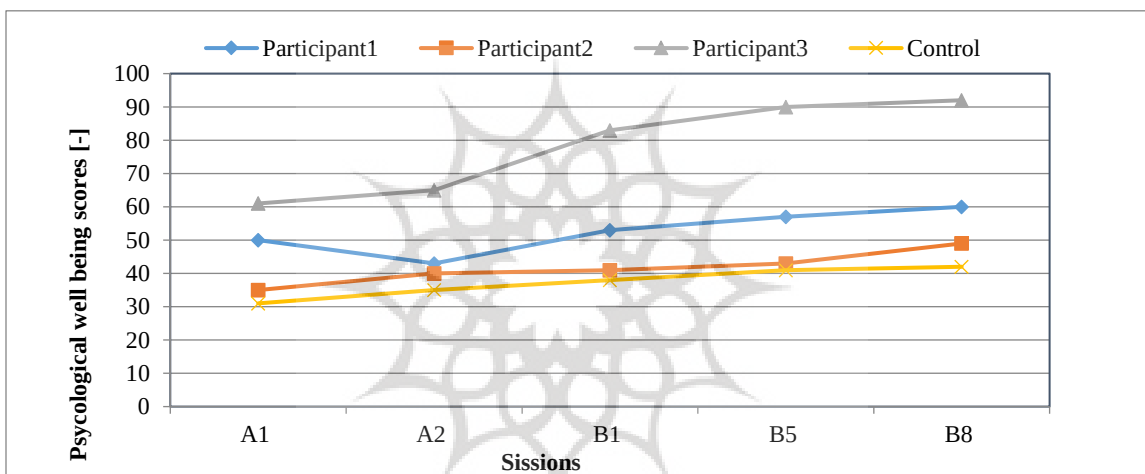


Figure 2. Trend of changes in the psychological well-being scores for the three participants and the control group

In Figure 2, observing the trend of changes for the four participants in the Psychological Well-being questionnaire during both baseline and intervention stages, the upward trend of the participants and the incremental score increase relative to the control individual indicate the effectiveness of the intervention. The overall improvement percentage after the treatment sessions was 36.9, but the improvement percentage from the first to the last intervention session showed an increase. This suggests that, in addition to the intervention's stable effect, the consolidation of practices and habits over time has been effective. Persistence in the

implementation of the training can lead to an enhanced impact.

1.1. Visual Analysis: Visual analysis involves a chart used for data interpretation following the intervention phase. In visual analysis, the level (relative value of data in the dependent variable), trend (direction of data indicating whether the data pattern is decreasing or increasing), and variability (degree of change and fluctuation in data) at various stages (baseline, treatment) are analyzed, and their comparisons across different situations form the foundation of this research's analysis (Epstein & Dallery, 2022).

Table 2. Within-condition analysis of Work-Family Conflict

Work-Family Conflict	Participant1		Participant2		Participant3	
condition	baseline	intervention	baseline	intervention	baseline	intervention
relative level	-7	-3.5	-2	-6.5	-5	-6.5
absolute level	-7	-7	-2	-3	-5	-24
resultant relative level	Descending		Descending		Descending	
resultant absolute level	Descending		Descending		Descending	
Median	53		43		61	
Index of stable change	9.2		2.8		2.8	

In the Within-condition analysis, it is observed that the decrease in both relative and absolute levels indicates an improvement in the variable. The negative trend in the

data suggests the effectiveness of the intervention. Overall, a decreasing trend was noted.

Table 3. Within-condition analysis of Psychological Well-being

Psychological Well-being condition	Participant1		Participant2		Participant3	
	baseline	intervention	baseline	intervention	baseline	intervention
relative level	7	8.5	5	3.5	4	25.2
absolute level	7	7	5	8	4	9
resultant relative level	Descending		Descending		Descending	
resultant absolute level	Descending		Descending		Descending	
Median	53		41		83	
Index of stable change	5.5		6.8		4.79	

In the Within-condition analysis, it can be observed that the increase in both relative and absolute levels indicates an improvement in the variable. The rising trend in the data suggests the effectiveness of the intervention. The overall trend was also observed to be increasing.

4.4. Within-condition analysis: For the final stage and the

Within-condition analysis of the intervention's effectiveness, we calculate the Percentage of Non-overlapping Data (PND) and the Percentage of Overlapping Data (POD). This helps to determine the main differences between the baseline (A) and the intervention (B).

Table 4. Scores of the three participants in the inter-occupational analysis and the determination of the percentage of overlap for work-family conflict

Work-Family Conflict	Participant1	Participant2	Participant3
PND	66.66	Above 70%	Above 70%
POD	33.33	Less than 50%	Less than 50%
MBD	-0.08	-0.1	-0.3
Absolute level change	-6	-8	-15
Median level change	-7	-5	-25
Average level change	-5.8	-6.6	-24

*A negative sign (-) indicates a decreasing change in scores

Table 5. Scores of the three participants in the inter-occupational analysis and the determination of the percentage of overlap for psychological well-being

Psychological Well-being	Participant1	Participant2	Participant3
PND	Above 70%	Above 70%	Above 70%
POD	Less than 50%	Less than 50%	Less than 50%
MBD	0.1	0.2	0.4
Absolute level change	3	6	31
Median level change	0	6	27
Average level change	1	8	25.3

It was predicted that Mindfulness-Based Cognitive Therapy would impact work-family conflict. An improvement percentage of less than 50% indicates that the intervention is not clinically significant, and this was only meaningful for Participant 3. The examination of the Percentage of Non-overlapping Data (PND) and the Percentage of Overlapping Data (POD) showed a satisfactory effect of the intervention on work-family conflict. It was observed that there was a negative and decreasing change in the absolute level, median level, and average level, which is consistent with the aim of the treatment to reduce work-family conflict, suggesting overall improvement. On the other hand, since the Reliable Change Index (RCI) is greater than 1.96 at $P < 0.05$, it demonstrates that the intervention is statistically significant. With 95% confidence, it can be said that the observed change in post-test scores compared to pre-test scores is not due to chance.

4. Discussion and Conclusion

This research aimed to explore the effectiveness of Mindfulness-Based Cognitive Therapy on occupational burnout in employed women. Three working women suffering from occupational burnout were selected for an eight-session intervention using Mindfulness-Based Cognitive.

This research (1) involved a mindfulness intervention that enhances work-life balance, focusing on how prioritizing influences changes in detachment, well-being, and work-life balance. It was demonstrated that reducing psychological conflict between work and life and improving satisfaction with work and work-life balance are beneficial. The method is effective for lowering mindfulness as a cognitive-emotional partitioning strategy: An intervention that enhances work-life balance. It was reported that a mindfulness training intervention, as a cognitive-emotional partitioning strategy, significantly

reduced work-family conflict based on less pressure, increased psychological separation, and greater work-life balance satisfaction. Followed by 15 days of self-monitored behavioral mindfulness and its impact on WFC. Using a baseline and two post-intervention designs, they found a significant increase in mindfulness and a significant decrease in WFC from before to after the intervention.

In analyzing the data for psychological well-being, there was an observable increasing pattern in the charts, showing the intervention's effectiveness as demonstrated by the increment in scores at each phase. The intra-occupational analysis indicated a trend toward improvement and the effectiveness of the intervention. Examining PND and POD, it was evident that the intervention had an acceptable effect on psychological well-being. It was observed that the absolute level change, median level change, and average level change were all positive, increasing, and indicative of improvement. But indicates a stable and real change in the post-test scores relative to the pre-test scores. The intra-occupational analysis indicated an improving and effective trend as a result of the intervention.

The research "Reducing Stress and Enhancing Well-being in Employees through Mindfulness-Based Cognitive Therapy for Life" (Strauss et al., 2021) highlighted that mindfulness and self-compassion have notable impacts as broader mediating strategies on stress, well-being, and mental health. MBCT aims to help individuals become aware of the effects of their cognitive reactions. MBCT can help shift the proportion of the population that is at high risk of depressive relapse into a greater state of wellness (MBCT for Depression) and a wider distribution of the population that may be relatively well into more optimal ranges of mental well-being (Maloney et al., 2024). Another paper discussing the effectiveness of mindfulness-based interventions on psychological well-being and occupational burnout (Querstret et al., 2020) reports that in non-clinical populations, the assessment of Mindfulness-Based Programs (MBPs) focuses on outcomes pertaining to mental health and psychological well-being. "These papers are in line with this research, as the main goal of Considering that MBCT has explored its impact on reducing work-family conflicts and enhancing psychological well-being. Given the scarcity of research in this area, the need for this study was particularly felt by family counselors rather than by organizational systems. After the participation of three women in the study and the completion of the initial assessment and evaluation, the summary of the sessions was as follows: This research focused on providing individual therapy for employed women experiencing emotional and

occupational burnout. These women, due to their heavy workload, often do not give much importance to therapy. Addressing this aspect of their lives, along with enhancing psychological resources and psychological well-being, leads to personal development. Consequently, these individuals can be effective spouses, mothers, and employees, motivated and inclined to experience positive emotions and a sense of satisfaction with life. Throughout the sessions, the individual's reactions were assessed. This is because MBCT is a therapeutic approach that encourages individuals to make decisions and act in the moment. This helps the person to break free from autopilot control and rescues the mind from wandering aimlessly. Preventing habitual reactions and becoming trapped in mental patterns is also important. This assists the individual in freeing their mind from conditioned states, thereby avoiding entanglement in old habits and conditioned behaviors (Ramachandran et al., 2023).

This research, while aligned with its objectives, faced certain limitations. One such limitation is the use of self-report tools to assess the study's variables. Additionally, due to the case study nature and the small sample size, this research methodology encounters challenges in generalizing findings. Therefore, caution is necessary when extending the research findings to broader contexts. The exclusive use of female participants in this study necessitates caution when generalizing the results to men. Additionally, considering that the participants belonged to middle or upper socio-economic statuses, caution is also advised in extending the findings of this research to individuals from lower socio-economic backgrounds.

Based on the findings and achievements of the current research, as well as the mentioned limitations, it is recommended that further follow-up studies be conducted to examine the outcomes after the completion of the treatment period. Given the differences in occupational burnout between men and women, it is suggested that this research be replicated with male participants. Furthermore, implementing this study in various regions of the country would likely increase the generalizability of its findings.

This research demonstrated that psychological well-being, encompassing hope, enthusiasm, and a sense of purpose in life, can be improved through the practices and teachings of MBCT. This improvement occurs when the exercises are performed correctly and not met with indifference or a mindset doubting their effectiveness. MBCT practices aid individuals in enhancing their self-awareness, enabling them to better understand their thoughts and emotions. Consequently, this leads to improved impulse control in challenging situations. It is better to use MBCT exercises and training together with

another treatment approach. As a result, the individual experiences less anxiety, lower stress, and a more positive mood through controlled and regulated emotional responses, leading to an improvement in burnout. The treatment used in this research aimed to enhance mood and reduce symptoms of depression in patients. The level of the Reliable Change Index and visual analysis for all three participants indicate success in achieving this goal.

5. Ethical Considerations

Compliance with ethical guidelines

The study process was in compliance with the ethical guidelines of the Declaration of Helsinki 2013. The article was approved by the Ethics Committee of Shahid Beheshti University (Code: IR.SBU.REC.1402.089). To comply with the ethical principles of voluntary participation, written informed consent was obtained from the participants for conducting and recording the interviews. The participants were also reassured of the confidentiality of their information.

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Authors' contributions

Both authors equally contributed to preparing the study.

Conflicts of interest

The authors declared no conflict of interest.

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