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Mindfulness-based cognitive therapy as a psychological strategy for mitigating emotional exhaustion among critical care nurses

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Abstract:

BACKGROUND: Emotional exhaustion is a key factor undermining the quality of patient care in critical care environments. It is associated with reduced clinical performance, increased medical errors, and inconsistent adherence to safety measures, all increasing the risk of adverse outcomes for patients. Addressing emotional exhaustion by healthcare providers is, therefore, deemed essential for enhancing patient safety and improving the overall quality of care. The present study aims to determine the effect of mindfulness-based cognitive therapy on mitigating emotional exhaustion among critical care nurses.

MATERIALS AND METHODS: A quasi-experimental design was conducted on 90 critical care nurses using a repeated measures approach from June 7, 2024 to November 13, 2024. The study was carried out in Al-Hussein Medical City and Imam Al-Hassan Al-Mujtaba Teaching Hospital in the Holy Karbala. The participants were randomly assigned to either the intervention group or the control group. The data collection instrument was the emotional exhaustion subscale of the Maslach Burnout Inventory-Human Services Survey. The participants in the intervention group attended an 8-week Mindfulness-Based Cognitive Therapy (MBCT) program. At the end of the eight-week program, all participants in both the intervention and control groups completed the post-test.

RESULTS: The findings showed higher percentages of emotional exhaustion (69.7%) with a mean score of 31.2 ± 10.7 in the experimental group. Following the intervention, it reduced significantly, with the mean score decreasing to 19.8 ± 6.59 . This difference was statistically significant ($P < 0.001$). Following the intervention, the level of emotional exhaustion reduced significantly, with the mean score decreasing to 19.8 ± 6.59 . This difference was statistically significant ($P < 0.001$). This reduction corresponds to a 36.5% decrease in emotional exhaustion, compared to an 8.5% reduction in the control group. These results suggest that the intervention may contribute to enhanced cognitive functioning, reduced burnout, and improved patient care outcomes.

CONCLUSION: The study revealed a high prevalence of emotional exhaustion, particularly among younger and less experienced nurses. The use of MBCT resulted in a statistically significant and clinically meaningful reduction in emotional exhaustion.

Keywords:

Burnout, cognitive behavioral therapy, critical care nursing, emotional exhaustion, mindfulness, nurses, professional

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Introduction

Emotional exhaustion is a prominent concern among critical care nurses,

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often manifesting as profound fatigue, diminished motivation, and a persistent sense of emotional overload. This condition is primarily attributed to sustained exposure to high-stress environments characterized by elevated patient mortality rates,

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suboptimal working conditions, and insufficient time to address the complex needs of critically ill patients.^[1,2] These challenges also contribute to compassion fatigue, which exacerbates emotional exhaustion and has been associated with increased medical errors, compromised patient safety, and higher rates of healthcare-associated infections.^[3]

Recognizing the severity of this issue, the International Council of Nurses (ICN) and the World Health Organization (WHO) have designated the working conditions of critical care nurses as a global health emergency, calling for urgent international efforts to address the multifaceted challenges confronting the profession.^[4-6] The intense nature of critical care work is further compounded by interrelated stressors, including the emotional toll of supporting patients and families, the complexities of interprofessional collaboration, and the need for rapid clinical decision-making in life-threatening situations.^[7-9]

According to the American Nurses Association's health risk assessment, up to 70% of healthcare professionals report experiencing high levels of stress and emotional exhaustion. This vulnerability not only threatens personal health but also undermines the quality of care delivered. Physical manifestations include migraines, hypercholesterolemia, chronic fatigue, and musculoskeletal pain, while psychological effects encompass anxiety, depression, insomnia, substance use, and, in severe cases, suicidal ideation.^[10-12]

Critical care nurses, who are responsible for delivering specialized care supported by advanced monitoring technologies, frequently experience alarm fatigue and a desensitization to the constant barrage of alerts. This phenomenon can compromise patient safety and further heighten emotional exhaustion.^[13,14] In light of these demands, critical care nurses must possess not only advanced clinical expertise but also strong emotional and interpersonal competencies to perform effectively under pressure. The consequences of emotional exhaustion are far-reaching, contributing to increased absenteeism, high turnover rates, diminished job performance, and a decline in patient care quality, including more frequent medical errors and lower patient satisfaction.^[15,16]

Addressing emotional exhaustion is therefore vital for safeguarding the psychological well-being of healthcare professionals and maintaining high standards of patient care. Mindfulness-Based Cognitive Therapy (MBCT), is an integrative approach combining mindfulness practices with cognitive-behavioral strategies has shown promise in mitigating stress and emotional exhaustion. By fostering heightened awareness of thoughts and emotions and promoting adaptive coping mechanisms,

MBCT may enhance nurses' mental health and, subsequently, improve patient outcomes.^[16-18]

MBCT incorporates principles of cognitive therapy and mindfulness to help individuals recognize and disengage from negative thought patterns and maladaptive emotional responses. This approach has demonstrated efficacy in reducing symptoms of burnout, particularly emotional exhaustion, among critical care nurses.^[19] For instance, a randomized controlled trial reported significant improvements in resilience and reductions in emotional exhaustion following MBCT participation,^[20] and a systematic review further confirmed the effectiveness of mindfulness-based interventions in reducing stress and emotional exhaustion in nursing populations.^[21]

Key components of MBCT include present-moment awareness, nonjudgmental acceptance, and emotional regulation. The program encourages full engagement with present experiences, minimizes rumination about past or future concerns, and cultivates self-compassion. These mechanisms foster emotional resilience and psychological flexibility, enabling individuals to perceive distressing thoughts and emotions as transient mental events rather than immutable realities.^[20-23]

Despite the established benefits of MBCT, questions remain regarding its feasibility and effectiveness in high-intensity environments such as critical care units, where nurses must manage complex clinical demands, technological overload, and significant emotional burdens.^[24] Accordingly, this study aims to explore the application of MBCT within this specific context. It represents one of the first quasi-experimental investigations conducted in Iraq to assess the effectiveness of MBCT in reducing emotional exhaustion among critical care nurses. The study's significance lies in its potential to provide evidence supporting the cultural relevance and practical utility of MBCT in improving nurse well-being in resource-constrained healthcare settings. Findings may inform strategies to enhance workforce stability and patient safety.

Theoretical framework

This study is grounded in the Neuman Systems Model and Orlando's Nursing Process Theory to guide the application of MBCT for critical care nurses. According to Neuman's model, stressors disrupt the individual's physiological, psychological, and sociocultural systems, potentially leading to emotional exhaustion.^[25] MBCT functions as a secondary prevention strategy, enhancing the nurse's ability to self-regulate and respond adaptively to internal and external stressors. In alignment with Orlando's theory, which emphasizes the role of nurses in identifying and addressing patients' expressed needs

through responsive interaction,^[26] MBCT supports the development of emotional awareness and self-reflection, thereby strengthening the nurse's capacity to manage stress, reduce burnout, and maintain therapeutic effectiveness.

Materials and Methods

Study design and setting

A quasi-experimental design was employed using a repeated measures approach, conducted from June 7, 2024, to November 13, 2024. The study was set in the intensive care units (ICUs) and Coronary Care Units (CCUs) of Al-Hussein Medical City and Imam Al-Hassan Al-Mujtaba Teaching Hospital, which are the primary healthcare providers in the Holy Karbala.

Study participants and sampling

Sample size

The total population of the previous setting was 118 critical care nurses, and the estimated was 88 critical care nurses, calculated using the Steven Thompson equation, with a known population size, a 95% confidence interval, and a standard deviation of 0.5. The sample was divided into two groups, with participants randomly assigned to either the intervention group (MBCT) or the control group using a simple random technique.

Inclusion criteria

The eligible participants were both male and female nurses working in critical care units with at least one year of experience in the units. They voluntarily agreed to participate in the study.

Exclusion criteria

Exclusion criteria included the individual's unwillingness to continue the study for any reason, transfer from the CCU and ICU wards of the hospital to other wards, and nurses were excluded if they had previously participated in mindfulness-based intervention (MBI) training programs, received psychosocial or psychiatric treatment, or failed to complete the questionnaire.

Instrument

The study used a questionnaire of two main sections. The first section, critical care nurse characteristics, inquired about demographic information, including age, marital status, education level, and other relevant details, as well as clinical characteristics such as unit of assignment, years of experience, and shift duration. The second section comprised the emotional exhaustion subscale from the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) for Medical Personnel.^[26,27] Permission to use this instrument was granted by Mind Garden, Inc., the international publisher of the instrument. The emotional exhaustion subscale includes

9 items designed to assess emotional exhaustion among nurses working in critical care units. This self-reported instrument is evaluated using a seven-point Likert scale, with participants rating the frequency of specific behaviors or experiences. The responses ranged from 0 to 6, indicating the frequency of each item during the survey administration. The responses ranged from "never" (score of 0) to "every day" (score of 6). The overall survey score ranged from zero to 54.

Validity and reliability

The content validity of the instrument and the MBCT intervention program was established through consultations with experts from various specialties related to the field of study. All expert suggestions were considered to ensure that the objectives of the study were effectively addressed. The reliability of the questionnaire was assessed using a test-retest method and Pearson's Correlation Coefficient (PCC). The value of 0.88 shows that the questionnaire enjoyed adequate reliability, with a reliability score well above 0.70.

Data collection tool and technique

Having explained the overall purpose of the study, the researcher labeled the test form as the "Human Services Survey" to assess job-related attitudes, thereby minimizing the risk of sensitizing participants to emotional exhaustion. The researcher then provided a detailed explanation of the research purpose and significance to the critical care nurses. Upon confirming their willingness to participate, the researcher administered the pretest using the emotional exhaustion subscale of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), ensuring that respondents were reassured of the confidentiality of responses.

The researcher divided the sample into two groups, an experimental group and a control. The former was given a comprehensive explanation of the MBCT program, covering the topic, objectives, potential benefits, any risks (if applicable), and the methods involved. The participants were encouraged to ask questions, which were addressed as they arose. Those who agreed to participate signed informed consent forms.

A group of participants participated in an eight-week MBCT program from July 6 to November 2, 2024. The program was designed for high-demand ICUs, with each session lasting 10 to 15 minutes. The sessions were held three times per week within the hospital setting. The sessions included brief psychoeducation, guided mindfulness exercise, and quick debriefing and reflection. To reinforce practice, participants received a booklet with summaries of each session and daily mindfulness exercises. Nurses were encouraged to integrate these practices into routine moments during their shifts.

At the end of the eight-week program, all participants, including those in both control and experimental groups, completed a post-test using the emotional exhaustion subscale of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) to evaluate and measure emotional exhaustion.

Ethical considerations

First, an official approval letter is provided by the Scientific Research Committee in the College of Nursing—University of Babylon No. (30) on 19-5-2024, then an official approval is attained from the Health Directorate of Karbala City No. (1058) on 30-5-2024. Finally, after providing an overview of objectives, potential hazards, and advantages of research, the participants were requested to voluntarily decide whether to join or not. Once they agreed, they were provided with an anonymous instrument to ensure the privacy of their information. In addition, they were reassured that their data would only be used for research purposes. Having written consent to participate or leave the study, assuring the participants that all information would remain confidential were other considerations.

Statistical analysis method

Data were collected, coded, and analyzed using IBM SPSS Statistics version 25. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were employed to summarize demographic characteristics. We used different statistical tests, like paired *t*-tests, independent-samples *t*-tests, analysis of variance (ANOVA), and Chi-square tests, to look at how variables are related and to see the impact of the intervention. Statistical significance level was determined at ($P \leq 0.05$).

Results

Based on a comparison of demographic variables of critical care nurses in the experimental and control groups, results showed that the distribution of single and married participants is fairly balanced. Regarding academic qualifications, a bachelor's degree or higher is the most common level of education. Most participants work 40 hours or fewer a week. In terms of the patient load, the majority of nurses handle 1–2 patients per shift, with no significant difference between the groups ($P = 0.375$) [Table 1].

Table 2 presents the descriptive statistics of the variables, including age, years of experience, and daily patient load for the experimental and control groups. The results confirm a good match between the job-related characteristics of the two groups, showing no significant differences across any variables. This guarantees that the intervention, not the pre-existing work-related

differences, will be responsible for any observed effects in subsequent analyses.

Table 3 presents the pretest distribution of emotional exhaustion among critical care nurses in both experimental ($N = 43$) and control ($N = 45$) groups; the control group reported higher percentages in the high emotional exhaustion category (80%) than the experimental group (69.7%). However, the incidence of moderate and low emotional exhaustion in the experimental group (16.3% and 14%, respectively) was notably higher than in the control group (11.1% vs. 8.9%, respectively). However, there is no statistically significant difference in the pretest scores ($P = 0.619$).

Table 4 shows that there was no important difference between the two groups before the test, with the experimental group averaging a score of 31.2 ± 10.7 and the control group averaging 32.1 ± 8.94 ($P = 0.619$). Following the intervention, the experimental group showed a significant decrease in emotional exhaustion, with the mean score decreasing to 19.8 ± 6.59 , while the control group showed a slight increase to 32.3 ± 9.7 . This difference was statistically significant ($P < 0.001$) and accompanied by a large between-group effect size (1.51). Following the intervention, the experimental group showed a significant decrease in emotional exhaustion, with the mean score decreasing to 19.8 ± 6.59 , while the control group showed a slight increase to 32.3 ± 9.7 . This difference was statistically significant ($P < 0.001$) and accompanied by a large between-group effect size (1.51). Furthermore, the experimental group showed a significant mean difference between pretest and post-test scores (11.4 ± 5.81), whereas the control group showed only a minimal change (0.22 ± 7.52), with this difference also reaching statistical significance ($P < 0.001$). The within-group effect size was large in the experimental group (1.38), compared to the negligible effect size in the control group (0.02). Additionally, the percentage reduction in emotional exhaustion was considerably greater in the experimental group (36.5%) than in the control group (8.5%). These findings imply that MBCT intervention significantly reduces emotional strain in critical care nurses, improving cognitive functioning and job satisfaction. This, in turn, leads to better patient care, fewer clinical errors, and enhanced safety outcomes, especially in resource-constrained settings.

Table 5 shows that nurses working in government and private hospitals had a higher pretest emotional exhaustion score ($M = 35.93$, $SD = 8.18$) than those in public hospitals only ($M = 29.03$, $SD = 11.20$). Post-intervention scores show a decrease in emotional exhaustion, though the P value of 0.012 signifies a statistically significant difference. Regarding the other variables, there were no statistically significant differences.

Table 1: Qualitative variables of demographic characteristics of the study participants

Variables		Groups				P
		Experimental (n 43)		Control (n 45)		
		No.	%	No.	%	
Marital Status	Single	23	53.5	29	64.4	0.296 Ns
	Married	20	46.5	16	35.6	
Type of family	Nuclear (Father/Mother)	21	48.9	23	51.1	0.480 Ns
	Nuclear (Husband/Wife)	15	34.9	17	37.8	
	Extended	7	16.2	5	11.1	
Academic qualification	Bachelor's degree or Higher	22	51.2	24	53.3	0.776 Ns
	Nursing diploma	14	32.6	16	35.6	
	Nursing secondary school	7	16.2	5	11.1	
Current Area of Assignment	Intensive care unit	25	58.1	27	60.0	0.859 Ns
	Coronary care unit	18	41.9	18	40.0	
Weekly hour work	40 hours or less	25	58.1	27	60.0	0.859 Ns
	More than 40 hours	18	41.9	18	40.0	

Ns=not significant. (P not significant indicating a high level of Homogeneity of the research groups), Chi-square test used in all comparisons

Table 2: Quantitative variables of demographic characteristics of the study participants

Variables	Groups				P
	Experimental (n 43)		Control (n 45)		
	Mean	SD	Mean	SD	
Age (Years)	27.72	4.981	27.26	4.291	0.247 ns
Years of experience	2.77	3.459	3.30	3.799	0.647 ns
Load of patients/day	1.96	0.550	1.96	0.588	0.395 ns

Ns=not significant. Independent-samples t-test is used in all comparison

Discussion

The present study aimed to evaluate the effectiveness of MBCT in mitigating emotional exhaustion among critical care nurses. The baseline results indicated a high degree of comparability between the experimental and control groups, with no statistically significant differences observed across any of the assessed variables. One of the initial objectives was to determine the prevalence and severity of emotional exhaustion within the study population. The findings revealed that both groups experienced similarly high levels of emotional exhaustion, with mean scores suggesting widespread emotional fatigue. These results align with previous research highlighting elevated levels of emotional exhaustion among nursing professionals, particularly those working in intensive care settings.^[3,28] Yousif and Al Fayyadh^[9] similarly identified burnout as a significant health concern among Iraqi critical care nurses, underscoring the need to prioritize their mental well-being.

In terms of severity, the majority of participants in both groups fell within the high emotional exhaustion category. This is consistent with the findings of Efil *et al.* and Alzahrani *et al.*,^[29,30] who reported that nearly three-quarters of critical care nurses experienced severe emotional exhaustion. The high intensity of critical

care nursing including patient acuity, complex clinical decision-making, and frequent exposure to trauma likely contributes to this elevated burden.

A primary objective of the current study was to assess the impact of MBCT on reducing emotional exhaustion. The post-intervention data demonstrated a statistically significant reduction in emotional exhaustion among the experimental group, with a marked decline in mean scores from pre- to post-test. These findings provide compelling evidence supporting the efficacy of MBCT in alleviating emotional exhaustion. The results are in line with prior studies that highlight the role of mindfulness-based interventions in enhancing work engagement and coping mechanisms in high-stress clinical environments. These outcomes emphasize the utility of mindfulness practices in addressing stress, psychological vulnerability, and emotional fatigue among healthcare workers.^[31-35]

Beyond statistical significance, the effect size analyses offer further insight into the magnitude of MBCT's impact. The between-group effect size (Cohen's $d = 1.51$) was large, indicating a substantial difference in emotional exhaustion reduction between the experimental and control groups. Similarly, the within-group effect size for the experimental group (Cohen's $d = 1.38$) suggests a clinically meaningful decrease in emotional exhaustion. These findings underscore the practical relevance of MBCT as an effective intervention for enhancing emotional well-being, supporting workforce sustainability, and improving patient care quality in critical care environments. In contrast, the control group exhibited no meaningful change in emotional exhaustion, as reflected by a non-significant pre-post difference ($P = 0.914$). This stability further supports the conclusion that MBCT, rather than natural recovery, accounted for the observed improvements.

Table 3: Distribution of critical care nurses' emotional exhaustion in both groups in the pretest

Variables		Groups								P
Domains	Score	Experimental (n 43)				Control (45)				
		n	%	M.s	SD	n	%	M.s	SD	
Emotional exhaustion (9Q)	Low (0–18)	6	14	31.2	10.7	4	8.9	32.1	8.94	0.619 Ns
Min=0	Moderate (19–26)	7	16.3			5	11.1			
Max=54	High (27–54)	30	69.7			36	80			

NS=not significant at $P>0.05$, Sig; significant at $P<0.05$

Table 4: Comparison of emotional exhaustion before and after the program in both research groups

Time point	Groups				Effect size between	P
	Experimental		Control			
	M.s	SD	M.s	SD		
Pretest	31.2	10.7	32.1	8.94	-	0.619 Ns
Post-test	19.8	6.59	32.3	9.7	1.51	<0.001 sig
Mean difference Pre-Post	11.4	5.81	0.22	7.52		<0.00 sig
Effect Size (within)	1.38		0.02			<0.001 sig
Percentage change	36.5%		8.5%			
P	<0.001 sig		0.914			

Highly significant difference and a large effect size at pretest-post-test between groups ($P<0.001$) and similarly within experimental group ($P<0.001$)

These results match those of Abu-Horirrah *et al.*,^[36] who found a significant drop in emotional exhaustion after eight weeks of mindfulness training in Egypt, with a P value < 0.001. Similarly, Ramachandran *et al.*^[37] found in their review and analysis that mindfulness-based interventions effectively lowered psychological distress, stress, depression, and emotional exhaustion in nurses.

Another noteworthy finding pertains to the working environment for the participants. Nurses employed in both governmental and private healthcare institutions reported higher pre-intervention emotional exhaustion scores compared to those working exclusively in public hospitals. This is consistent with the findings of Shah *et al.*,^[38] who identified that dual practice across healthcare settings contributes to elevated stress levels and burnout, primarily due to increased workloads and the need to manage diverse patient populations. Several factors may explain this discrepancy, including higher workload demands, financial pressures, and increased administrative expectations in private sector settings. Following the MBCT intervention, emotional exhaustion scores significantly decreased across all employment settings, with the most pronounced improvement observed among nurses working in both public and private sectors.

This significant reduction highlights the responsiveness of this subgroup to mindfulness training. These results are supported by the findings of Mealer *et al.*,^[18] who demonstrated that MBCT reduces emotional exhaustion and enhances psychological resilience in critical care nurses. A plausible explanation for this outcome is that

nurses managing responsibilities across multiple settings may be more intrinsically motivated to seek strategies that improve their well-being. Participation in MBCT may have reinforced this motivation, fostering enhanced self-awareness, emotional regulation, and coping ability.

Limitations

This study has faced several limitations. The intensive and unpredictable nature of the critical care environment may have impacted participants' engagement with the intervention and affected the accuracy of their responses, thereby potentially influencing the results. The reliance on self-reported questionnaires to assess emotional exhaustion introduces the risk of response bias, as participants may underreport or overreport their symptoms due to social desirability or recall difficulties.

Iraqi cultural perceptions also played a role in shaping the uptake of MBCT. As mindfulness is neither culturally embedded nor widely understood in this context, some nurses might question its clinical relevance. Consequently, MBCT may be perceived as peripheral to professional responsibilities or associated with non-medical practices, which can diminish both engagement and adherence.

Additionally, the lack of national or local studies on mindfulness-based interventions in the Iraqi healthcare system makes it hard to compare results and understand them in a larger cultural context. Finally, the relatively small sample size may reduce the statistical power of the analysis and limit the generalizability of the findings to the wider population of critical care nurses.

Barriers to Adoption of MBCT in Clinical Practice

Despite the promising outcomes of this study, several barriers may hinder the broader implementation of MBCT in clinical settings, particularly within critical care environments. One of the primary challenges is the constraint of time. The demanding workload of critical care nurses, marked by long shifts, high patient acuity, and limited rest periods, makes consistent engagement in mindfulness practices difficult. Although the intervention was adapted to include brief 10–15-minute sessions to align with ICU schedules, sustaining regular practice outside these structured sessions remains a significant obstacle. In addition to time limitations,

Table 5: Comparison of nurses' emotional exhaustion and demographic and clinical variables before and after the program in experimental group

Variable		Experimental group				Paired <i>t</i> / ANOVA <i>P</i>
		Post-test (43)		Post-test (43)		
		Ms	SD	Ms	SD	
Marital Status	Single	30.70	10.43	18.30	4.83	0.543 Ns
	Married	31.95	11.28	17.35	4.13	
Type of family	Nuclear (Fa/Mo)	29.43	10.59	18.05	5.13	0.615 Ns
	Nuclear (Hus/Wife)	32.71	11.0	16.57	2.63	
Academic qualification	Extended	33.20	11.06	18.20	4.36	0.404 Ns
	Bachelor or Higher	27.71	12.10	15.14	2.19	
	Nursing diploma	30.43	10.55	20.14	4.47	
	Nursing secondary school	32.95	10.57	17.27	4.51	
Current Area of Assignment	Intensive Care Unit	32.44	9.84	17.96	5.03	0.490 Ns
	Coronary care Unit	29.67	11.95	17.72	3.75	
Weekly hour work	40 h or less	30.52	11.67	18.84	5.38	0.256 Ns
	More than 40 h	32.33	9.48	16.50	2.38	

Paired *t*-test and ANOVA are used for association of variables within group. NS=not significant at $P>0.05$, Sig; significant at $P<0.05$

cultural perceptions and skepticism regarding the efficacy of MBCT may further impede its adoption.

Conclusion

This study examined the impact of MBCT on emotional exhaustion among critical care nurses, revealing a high baseline prevalence of exhaustion, particularly among younger and less experienced staff. The MBCT program significantly lowered emotional exhaustion in the group that participated, with strong evidence showing that it was effective in a real-world setting and could contribute to enhanced cognitive functioning, reduced burnout, and improved patient care outcomes. Notably, nurses from both government and private hospitals who initially reported the highest exhaustion levels due to workload intensity and financial strain exhibited the greatest improvements post-intervention, which may, in turn, promote nurse well-being in resource-constrained healthcare settings and contribute to enhanced workforce stability and patient safety.

Future research is recommended to explore long-term effects, cost-effectiveness, and scalability of MBCT interventions across different healthcare settings and professional roles.

AI policy

The authors utilized ChatGPT, an AI-based language model developed by OpenAI, to assist in refining the academic English and enhancing the clarity, coherence, and grammatical accuracy of the manuscript.

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Abbreviation

EE: Emotional exhaustion; MBCT: Mindfulness-Based Cognitive Therapy; CCNs: Critical Care Nurses; ICN: International Council of Nurses; ICUs: Intensive Care Units; CCUs: Coronary Care Units; MBI: Mindfulness-Based Intervention; MBI-HSS: Maslach Burnout Inventory-Human Services Survey; SPSS: Software Package used for Statistical Analysis; ANOVA: Analysis of Variance.

Author's contributions

The manuscript has been read and approved by all the authors, All authors contributed to the preparation of the final manuscript.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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