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Effectiveness of Mindfulness-Based Cognitive Therapy Training on Self-Efficacy and Depression among Married Female Nurses

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Abstract: Nurses are exposed to numerous occupational stressors that may lead to psychological problems such as depression and low self-efficacy. The present study aimed to determine the effectiveness of mindfulness-based cognitive therapy (MBCT) training on self-efficacy and depression among married female nurses. This study was a quasi-experimental research with a pretest–posttest design and a control group. The statistical population consisted of all married female nurses working in hospitals of District 6 in Tehran during the first half of 2019. Using a cluster sampling method, two hospitals were selected and among eligible nurses, 30 participants who had higher scores in depression and lower scores in self-efficacy were chosen and randomly assigned to an experimental group (n=15) and a control group (n=15). The experimental group received eight 90-minute sessions of mindfulness-based cognitive therapy based on the protocol developed by Segal, Williams, and Teasdale (2002). Data were collected using the General Self-Efficacy Scale developed by Sherer et al. (1982) and the Beck Depression Inventory-II at the pretest and posttest stages. Data were analyzed using multivariate analysis of covariance (MANCOVA). The results showed a significant difference between the experimental and control groups in self-efficacy and depression ($p < 0.01$). MBCT significantly increased self-efficacy ($F = 15.18$, $p < 0.001$, $\eta^2 = 0.360$) and significantly reduced depression ($F = 19.94$, $p < 0.001$, $\eta^2 = 0.425$) among married female nurses. By enhancing moment-to-moment awareness, reducing rumination, and changing individuals' relationships with negative thoughts and emotions, mindfulness-based cognitive therapy can be an effective method for improving self-efficacy and reducing depression among nurses. Therefore, implementing this intervention in healthcare settings and incorporating it into in-service training programs for nurses is recommended.

Keywords: Mindfulness-Based Cognitive Therapy, Self-Efficacy, Depression, Married Women, Nurses

Introduction

Nursing is considered one of the most sensitive and demanding professions within the healthcare system and plays a vital role in promoting community health. Due to their direct contact with patients, exposure to suffering, and sometimes death, nurses are frequently subjected to significant psychological and emotional pressures (Akar & Esmeroglu, 2019). These pressures may be even greater for married female nurses who, in addition to their professional responsibilities, must also fulfill family roles such as those of spouse and mother (Jiang et al., 2018). The conflict between family and occupational responsibilities, irregular work shifts, heavy workloads, and limited organizational support are among the factors that may threaten the mental health of this group (Goudarzian & Yaghoubi, 2019). Therefore, addressing nurses' psychological problems and providing effective intervention strategies is considered an essential necessity in the healthcare system (Rabiei, 2016).

One of the important psychological variables that plays a key role in nurses' job performance and quality of life is self-efficacy (Shao et al., 2019). Self-efficacy, a concept proposed by Bandura, refers to an

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individual's beliefs and judgments about their ability to organize and execute the actions required to achieve specific goals and manage challenging situations (Rabiei, 2016). Individuals with high self-efficacy tend to show greater intrinsic interest in their work, demonstrate perseverance when facing obstacles, and perform more effectively. In contrast, low self-efficacy may lead to feelings of helplessness, reduced effort, and avoidance of challenging situations. In the nursing profession, self-efficacy refers to nurses' belief in their ability to provide high-quality care, manage critical situations, and establish effective communication with patients and colleagues (Anli, Li, & Jiang, 2018). Factors such as heavy workload, job burnout, and repeated negative experiences may weaken nurses' self-efficacy and negatively affect the quality of care they provide (Shao et al., 2019).

Alongside self-efficacy, depression is one of the most common mental disorders worldwide and has a relatively high prevalence among nurses. Depression is characterized by symptoms such as persistent low mood, reduced energy and interest, feelings of guilt, difficulty concentrating, loss of appetite, and thoughts of death or suicide (American Psychiatric Association, 2013). It is sometimes referred to as the "common cold" of psychological disorders because of its high prevalence and the likelihood that many individuals experience it at some point in their lives. Depression among nurses not only affects their personal health and quality of life but can also lead to serious consequences for patients and the healthcare system due to its impact on job performance (Wang et al., 2020).

Several mechanisms contribute to the development and exacerbation of depression among nurses, including repeated exposure to suffering and death, stress caused by shift work, lack of social support, and conflict between occupational and family roles (Zhang et al., 2019). These factors may lead to rumination, feelings of inefficacy, and eventually depression (Asgarpour & Mazaheri Dasht-Arzhendi, 2014).

In the past two decades, third-wave cognitive-behavioral therapies, particularly Mindfulness-Based Cognitive Therapy (MBCT), have attracted considerable attention from researchers and clinicians. Mindfulness, as a way of living, uses meditation practices integrated into everyday life to help individuals become aware of different mental states and consciously utilize them within an integrated mind (Ranjbaran, 2015). MBCT, developed by Teasdale, Williams, and Segal, is a relatively new approach designed primarily to prevent relapse in depression (Duan & Barnett, 2018). This approach teaches individuals to develop a different relationship with their thoughts and emotions rather than attempting to directly change the content of negative thoughts, encouraging them to observe thoughts and feelings as transient mental events (Segal, Williams, & Teasdale, 2002; cited in Giacintoni et al., 2019).

The therapeutic mechanisms of MBCT operate through enhancing metacognitive awareness, reducing rumination, and increasing acceptance of internal experiences (Duan & Barnett, 2018). Previous research has shown that mindfulness-based cognitive therapy can increase self-efficacy in various populations (Abdellal & Al-Ashri, 2019; Masoumian et al., 2013) and reduce symptoms of depression (Akigugoz & Karaka, 2019; Haghi et al., 2014). By teaching non-judgmental awareness of thoughts and emotions, this approach helps nurses move away from automatic and ruminative reactions when facing

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occupational stressors and instead respond more adaptively. Such changes may lead to increased self-efficacy (Kim & Jang, 2018) and reduced depression (Smith et al., 2020).

Despite existing research supporting the effectiveness of mindfulness-based cognitive therapy on various psychological variables, there remains a research gap regarding its impact on self-efficacy and depression among nurses, particularly married female nurses who face the dual pressures of occupational and family responsibilities. Given the critical role of nurses in the healthcare system and the direct influence of their mental health on the quality of care they provide, conducting research in this area appears necessary. Therefore, the present study seeks to answer the following fundamental question: Is mindfulness-based cognitive therapy training effective in improving self-efficacy and reducing depression among married female nurses in District 6 of Tehran?

Material and Methods

The present study employed an experimental approach using a quasi-experimental pretest–posttest design with a control group. The statistical population consisted of all married female nurses working in hospitals located in District 6 of Tehran during the first half of 2019. For sampling, a cluster sampling method was applied: first, two hospitals—Moheb Kosar Hospital and Rajaei Hospital—were selected from among the hospitals in District 6. Subsequently, among the female nurses working in these two hospitals, those who were married and within the age range of 30 to 45 were identified, and the Beck Depression Inventory and the General Self-Efficacy Scale were administered to them.

Ultimately, 30 individuals who scored high in depression and low in self-efficacy were selected and randomly assigned to the experimental group (n = 15) and the control group (n = 15). Inclusion criteria consisted of willingness to participate in treatment sessions and complete questionnaires, holding at least a bachelor's degree, being within the age range of 30 to 45 years, and not having any other physical or psychological disorders. Exclusion criteria included lack of willingness to continue participation, absence from more than two treatment sessions, and simultaneous use of other psychological or pharmacological treatments during the study period.

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Instruments

1) Beck Depression Inventory-II (BDI-II): Depression was assessed using the Beck Depression Inventory-II, developed by Beck, Steer, and Brown (1996). This revised version aligns more closely with DSM-IV diagnostic criteria and contains 21 items assessing the severity of depression. Each item is rated on a 4-point Likert scale (0 to 3), yielding a total score range of 0 to 63, with higher scores indicating more severe depression. Psychometric properties of the BDI-II have been well supported. Beck et al. (1996) reported an alpha coefficient of 0.91, split-half reliability of 0.89, and a one-week test-retest reliability of 0.94. Caspi et al. (2008) reported convergent validity of 0.78 and Cronbach's alpha of 0.82. In non-clinical samples, internal consistency coefficients ranged from 0.89 to 0.90, with a test-retest reliability of 0.94. Other Iranian studies have confirmed its reliability, reporting Cronbach's alpha of approximately 0.91.

2) General Self-Efficacy Scale (GSES): The General Self-Efficacy Scale developed by Sherer and colleagues (1982) consists of 17 items assessing three behavioral domains: willingness to initiate behavior, persistence in completing tasks, and resilience when encountering obstacles. Items are scored on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Total scores range from 17 to 85. Items 2, 4, 5, 7, 11, 12, 14, and 16 are reverse-scored. Reliability indices reported using the Spearman-Brown method was 0.76 (equal and unequal length) and 0.76 using Guttman split-half. Cronbach's alpha has been reported as 0.79, with Iranian studies reporting values around 0.85 to 0.86.

3) Mindfulness-Based Cognitive Therapy Protocol (MBCT): The intervention was based on the program developed by Segal, Williams, and Teasdale (2002), delivered in eight 90-minute group sessions. A summary of session contents is provided in Table 1.

Table 1. Summary of MBCT Sessions (Adapted from Segal et al., 2002)

Session	Content
1	Introduction and orientation; overview of session structure; confidentiality; introduction to MBCT principles; understanding depressive disorder.
2	Training in mindfulness and breathing awareness; body scan practice.
3	Progressive muscle relaxation; mindful breathing and body awareness exercises; continuation of meditation practices.
4	Forty-five-minute seated meditation training; three-minute breathing space technique.
5	Forty-five-minute body scan; identification of common cognitive distortions associated with depression.
6	Forty-five-minute seated meditation; discussion of difficulties encountered during home practice; emotional awareness; techniques for responding to negative automatic thoughts.
7	Meditation practices; three-minute breathing space combined with presenting a personal problem and exploring bodily/mental effects.
8	Review of previous sessions; comprehensive review of learned skills; comparison of pre-t

Results

In this study, the final sample consisted of 30 married female nurses working in hospitals located in District 6 of Tehran. Participants were selected using cluster sampling and then randomly assigned to an experimental group (n = 15) and a control group (n = 15). The age range of participants was 30–45 years, with a mean and standard deviation of 36.42 ± 4.38 years. Regarding age distribution, 12

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participants (40%) were in the 30–35 age group, 10 participants (33.3%) were in the 36–40 age group, and 8 participants (26.7%) were in the 41–45 age group.

In terms of educational level, 20 participants (66.7%) held a bachelor's degree and 10 participants (33.3%) held a master's degree. The mean work experience was 11.85 ± 6.12 years, ranging from 5 to 20 years. Regarding employment status, 18 participants (60%) had permanent employment, 8 participants (26.7%) were contract employees, and 4 participants (13.3%) were employed under temporary service plans.

Statistical analyses (Chi-square tests for categorical variables and independent t-tests for age and work experience) indicated that the experimental and control groups did not differ significantly in demographic variables including age, education level, work experience, and employment status ($p > 0.05$). Therefore, the two groups were considered homogeneous in terms of demographic characteristics. Table 2 presents the descriptive statistics for the study variables.

Table 2. Descriptive Statistics of the Research Variables (N = 30)

Variable	Group	Phase	N	Mean	SD	Max	Min
Self-efficacy	Experimental	Pretest	15	37.33	5.47	45	29
		Posttest	15	40.93	6.29	51	32
	Control	Pretest	15	36.93	5.66	46	28
		Posttest	15	37.86	5.51	49	30
Depression	Experimental	Pretest	15	19.93	4.04	27	15
		Posttest	15	15.73	5.16	25	8
	Control	Pretest	15	20.66	3.67	26	15
		Posttest	15	19.93	4.43	28	12

Before conducting the main analyses, statistical assumptions including normality of data distribution and homogeneity of variance–covariance matrices were examined. The Shapiro–Wilk test was used to assess normality.

For the self-efficacy variable, results indicated normal distribution of scores in the experimental group at pretest ($W = 0.937$, $p = 0.349$) and posttest ($W = 0.960$, $p = 0.698$), as well as in the control group at pretest ($W = 0.949$, $p = 0.514$) and posttest ($W = 0.967$, $p = 0.811$).

For the depression variable, Shapiro–Wilk results in the experimental group were ($W = 0.883$, $p = 0.053$) at pretest and ($W = 0.938$, $p = 0.353$) at posttest. In the control group, the results were ($W = 0.945$, $p = 0.455$) at pretest and ($W = 0.968$, $p = 0.820$) at posttest. Since all significance values were greater than 0.05, the assumption of normality was confirmed.

The homogeneity of variance–covariance matrices was examined using Box's M test. The results (Box's $M = 0.863$, $F_{3, 41.1} = 0.265$, $p = 0.850$) indicated that this assumption was also satisfied. Therefore, given that all assumptions were met, the use of parametric tests—particularly multivariate analysis of covariance (MANCOVA) and univariate analysis of covariance (ANCOVA)—was considered appropriate for testing the research hypotheses. The results of the multivariate analysis of covariance (MANCOVA) are presented in Table 3.

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Table 3. Results of Multivariate Analysis of Covariance (MANCOVA)

Test	Value	F	df (group)	df (error)	p	Eta Squared
Pillai's Trace	0.526	13.87	2	25	0.001	0.526
Wilks' Lambda	0.474	13.87	2	25	0.001	0.526
Hotelling's Trace	1.109	13.87	2	25	0.001	0.526
Roy's Largest Root	1.109	13.87	2	25	0.001	0.526

The results indicate that all multivariate indices (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root) were statistically significant at the 0.01 level ($p = 0.001$). Therefore, there was a significant difference between the experimental and control groups in at least one of the dependent variables (self-efficacy or depression). In other words, mindfulness-based cognitive therapy training had a significant effect on the combined linear effects of self-efficacy and depression among married female nurses. The multivariate eta squared value (0.526) indicates that approximately 52.6% of the variance in the combined dependent variables was explained by group membership (experimental vs. control), representing a large effect size for the intervention. To examine the effect of the intervention on each variable separately, univariate analysis of covariance (ANCOVA) was conducted. The results are presented in Table 4.

Table 4. Summary of Univariate ANCOVA for Self-Efficacy and Depression

Source	Variable	Sum of Squares	df	Mean Square	F	p	Eta Squared
Pretest	Self-efficacy	886.22	1	886.22	253.36	0.001	0.904
Group	Self-efficacy	53.09	1	53.09	15.18	0.001	0.360
Error	Self-efficacy	94.44	27	3.49			
Pretest	Depression	533.53	1	533.53	126.00	0.001	0.824
Group	Depression	84.45	1	84.45	19.94	0.001	0.425
Error	Depression	114.32	27	4.23			

The findings in Table 4 show that after controlling for pretest scores as the covariate, a significant difference was observed between the experimental and control groups in self-efficacy ($F_{1,27}$) = 15.18, $p = 0.001$, $\eta^2 = 0.360$). This indicates that approximately 36% of the variance in posttest self-efficacy was explained by group membership.

Similarly, a significant difference was found between the two groups in depression ($F_{1,27}$) = 19.94, $p = 0.001$, $\eta^2 = 0.425$), indicating that about 43% of the variance in posttest depression scores was explained by group membership. These findings demonstrate that mindfulness-based cognitive therapy training significantly increased self-efficacy and reduced depression among married female nurses in the experimental group compared with the control group.

Discussion

The present study aimed to examine the effectiveness of mindfulness-based cognitive therapy (MBCT) training on self-efficacy and depression among married female nurses. The results of the statistical analyses indicated that mindfulness-based cognitive therapy significantly increased self-efficacy and reduced depression among married female nurses. These findings are consistent with the results of several previous studies, including those by Zahedirad et al. (2021), Kahrezi et al. (2017), Hosseini

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(2015), Duan and Barnett (2019), Giacintoni et al. (2019), Goldberg et al. (2018), McKenzie and Kocovski (2017), Eisendrath et al. (2016), Van der Waden et al. (2015), and Teasdale et al. (2010).

To explain these findings, reference can be made to Teasdale's theoretical perspective, which suggests that the human mind constantly interprets and evaluates events, and these interpretations lead to persistent emotional reactions. In individuals vulnerable to psychological disorders, the mind tends to gravitate toward distressing and negative thoughts, which in turn sustain sadness and negative emotions (Zahedirad et al., 2021). Mindfulness encourages individuals to attend to their experiences in a non-judgmental manner, facilitating more specific encoding of information in autobiographical memory and helping individuals regulate emotions through acceptance of emotional and physical experiences without judgment. Since mindfulness-based cognitive therapy includes various practices such as meditation, yoga, psychoeducation about depression, body-scan exercises, and cognitive practices that highlight the relationship among mood, thoughts, emotions, and bodily sensations, these exercises enable individuals to focus on bodily and environmental experiences in the present moment. As a result, automatic cognitive processes that contribute to depression are reduced (Giacintoni et al., 2019), and by decreasing the impact of negative thoughts, individuals' levels of self-efficacy may increase (Kim & Jang, 2020).

Furthermore, mindfulness leads to cognitive changes in individuals' thinking patterns and behaviors and benefits from principles related to reinforcement processes. Individuals strive to move toward higher levels of functioning, and this ongoing effort promotes gradual and step-by-step improvement. Mindfulness also facilitates emotional regulation through non-judgmental awareness and increased sensitivity to psychological and physical experiences, helping individuals observe and accept emotional states more clearly. From a psychological perspective, one of the major factors that makes individuals vulnerable to depression is excessive mental engagement with past memories and anticipated future events. Mindfulness, therefore, is a skill that allows individuals to maintain their attention in the present moment and prevents rumination, which is considered one of the core symptoms of depression (Khormaee et al., 2015).

Regarding the effect of this intervention on self-efficacy, mindfulness can be viewed as a form of awareness that is centered on the present moment and characterized by openness, sustained attention, and non-judgmental awareness (Mehdipour & Kord, 2018). Individuals with higher levels of mindfulness possess greater insight into their cognitive processes and personal capabilities and are more likely to employ effective strategies when dealing with tasks and challenges. Mindfulness involves specific behavioral, cognitive, and metacognitive strategies that help regulate attentional processes, thereby reducing the impact of factors that lead to negative mood and worry. This process contributes to the development of new perspectives and the emergence of more positive thoughts and emotions (Abdellal & Al-Ashri, 2019). Consequently, mindfulness training may help nurses manage occupational stress, negative thoughts, and unpleasant emotions more effectively. By developing awareness and acceptance of their internal experiences, nurses become less influenced by negative thoughts and emotions and are therefore able to enhance their sense of self-efficacy (Kim & Jang, 2020).

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In explaining the effect of mindfulness-based cognitive therapy on reducing depression, it can be noted that mindfulness helps individuals become aware of their mental modes at any given moment and learn to shift the mind from the "doing mode" to the "being mode." This shift requires training in specific behavioral, cognitive, and metacognitive strategies for focusing attention (Segal, Williams, & Teasdale, 2002). Depression is often associated with a strong desire to avoid unpleasant emotions and an increased need for certainty that such feelings will not occur. However, the process of rumination—often intended as a problem-solving strategy—can intensify this cycle (Duan & Barnett, 2019). Mindfulness helps individuals disengage from the cycle of rumination and offers a different way of relating to dysfunctional thoughts and associated emotions. In doing so, it helps individuals detach from automatic thoughts and maladaptive behavioral patterns and plays an important role in stress reduction and emotional regulation (Duan & Barnett, 2019).

Overall, based on the findings of the present study, it can be concluded that mindfulness-based cognitive therapy training is an effective method for increasing self-efficacy and reducing depression among married female nurses. This intervention, through mindfulness practices and cognitive techniques, helps nurses establish a different relationship with their thoughts and emotions, reduce rumination and engagement with negative thoughts, and increase moment-to-moment awareness of internal and external experiences. As a result, they may experience a greater sense of competence and effectiveness in both their professional and family roles.

Despite its contributions, this study had several limitations. First, the statistical population was limited to married female nurses working in hospitals in District 6 of Tehran, which may restrict the generalizability of the findings. Second, the study did not include a long-term follow-up to examine the durability of treatment effects. Third, the use of self-report instruments may have introduced response bias. In addition, the implementation of the intervention was constrained by certain time and location limitations.

Given these limitations, it is recommended that future studies be conducted in other geographical areas and include male nurses as well as participants from different age groups. Future research should also employ longitudinal follow-up designs to examine the long-term stability of treatment outcomes. Moreover, the use of diverse assessment tools, such as semi-structured interviews alongside questionnaires, may enhance the validity of findings.

From a practical perspective, it is recommended that hospital administrators organize mindfulness-based cognitive therapy training workshops as part of in-service professional development programs. Psychologists may incorporate these techniques into clinical interventions, and educational planners may consider integrating mindfulness skills into nursing curricula. Such initiatives may contribute to improving self-efficacy and reducing depression among nurses.

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