



Experimental Research

The effect of conscious mindfulness-based program (MBP) applied to emergency nurses on their anxiety and quality of life: A randomized controlled study

Behice Belkıs Çalışkan,¹ Ayşegül Güneş,¹ Yasemin Eda Tekin,² Meryem Yıldız Ayvaz,³ Hamiyet Kızıl¹

¹Department of Nursing, İstanbul Beykent University Faculty of Health Sciences, İstanbul, Türkiye

²Department of Nursing, Mudanya University Faculty of Health Sciences, Mudanya, Bursa

³Department of Nursing, Koç University Faculty of Nursing, İstanbul, Türkiye

Abstract

Objectives: This study aimed to examine the effect of a mindfulness-based program applied to nurses working in the emergency department on their anxiety and professional quality of life.

Methods: The study was conducted as a randomized controlled experimental study with 50 nurses working in the emergency department. Data were collected with a sociodemographic information form, state-trait anxiety inventory (STAI), and quality of life scale for employees (ProQOL-30). Mindfulness-Based Program (FTP), which lasted for 8 weeks and was an application of 2.5 h/week, was applied to the experimental group. A pre-test before the application and a post-test after the application (1 week after the application was completed) were administered to the experimental and control groups. In evaluating the data, number, percentage, mean, standard deviation, Kurtosis, Skewness, Chi-Square, and Fisher's exact tests were used.

Results: It was found that the STAI state and trait anxiety pre-test mean scores of emergency nurses were not significantly different between the experimental and control groups ($p>0.05$), but the STAI state anxiety post-test mean score was significantly lower in the experimental group ($t=-3.527$, $p=0.01$). In addition, no significant difference was detected between the ProQOL-30 scale general and all subscale pre-test scores of the experimental and control groups ($p>0.05$). In addition, while there was no significant difference between the ProQOL-30 scale general and sub-dimension pre-test and post-test scores of the control group ($p>0.05$), it was found that the ProQOL-30 general score average increased significantly after the application ($t=-2.113$).

Conclusion: It was concluded that the mindfulness-based program is a program that reduces the anxiety levels of emergency room nurses and increases their work-life satisfaction levels.

Keywords: Anxiety; mindfulness; nurse; quality of work life.

Emergency services are one of healthcare institutions' most active, stressful, and complex units. They are also one of the areas where the workload is high and requires effective crisis management.^[1] Negative situations that emergency room nurses encounter, such as patient circulation, long working hours, insufficient tools and equipment, excessive

workload, and patient deaths, cause them to be exposed to intense physical and emotional load, experience more anxiety, burnout, and compassion fatigue, and increase their job satisfaction level compared to other health professionals. It also causes a decrease. In addition, the current workload of the emergency department, negative working conditions,

Address for correspondence: Behice Belkıs Çalışkan, Department of Nursing, İstanbul Beykent University Faculty of Health Sciences, İstanbul, Türkiye

Phone: +90 533 482 45 55 **E-mail:** bhcbilksayan@gmail.com **ORCID:** 0000-0001-7249-2954

Submitted Date: July 30, 2023 **Revised Date:** June 03, 2024 **Accepted Date:** June 06, 2024 **Available Online Date:** September 06, 2024

Journal of Psychiatric Nursing - Available online at www.phdergi.org



high expectations from nurses, and shortage of staff cause an increase in the anxiety level of emergency department nurses and a decrease in their quality of work life after a while.^[2-7]

When the literature is examined, it is seen that nurses' anxiety levels are high, and their work-life quality is moderate and low.^[8-11] Kebapçı and Akyolcu found that nurses working in emergency departments have high burnout levels and low job satisfaction.^[12] In the study of Barbagianni et al.,^[13] they concluded that the anxiety levels of healthcare workers were high, and their quality of work life was at a medium level. A systematic review emphasized that personal, professional, and psychological factors affect nurses' quality of work life.^[14] The importance of nurses' anxiety levels and quality of work life and the reasons affecting these factors are emphasized in the literature.

Mindfulness-based practices, which have become increasingly important in recent years, express increased attention by focusing on the individual's current experience or reality openly and in the present moment and accepting it without judgment.^[15,16] Its primary purpose is to pay attention to all events occurring in the present moment with a non-judgmental consciousness.^[17,18] It is stated in the literature that as health-care professionals discover mindfulness practices, there is an increase in the level of development and well-being in their personal and professional lives and improvements in their quality of life.^[15,16]

In this context, mindfulness practices are widely used in the anxiety management of nurses who are exposed to an intense physical, cognitive, and spiritual load.^[19] In descriptive studies, the mindfulness levels of nurses were determined to be low.^[20,21] Duarte and Pinto-Gouveia, in their study with 84 nurses (n=45 experimental, n=48 control group), found that mindfulness practices were effective in nurses' effectiveness. It has been stated that it reduces compassion fatigue and avoidance behavior.^[22] In a systematic review published by Burton et al.,^[19] it was found that mindfulness-based practices increased the professional satisfaction of nurses by reducing their stress and burnout levels. In the study of Muir and Keim-Malpass, the mindfulness-based practice given to nurses working in emergency services has shown that nurses' burnout levels decrease.^[23] In another similar study, short-term mindfulness practice positively affected emergency service workers.^[24] In a study examining the effects of mindfulness, it is emphasized that it plays a mediating role in explaining the relationship between stress and quality of life and that mindfulness-based interventions will improve nurses' quality of life by increasing their stress management skills.^[25,26]

Many studies in the literature evaluate the effectiveness of mindfulness practices applied to empower emergency room nurses to cope with the problems they experience.^[1,2,6,7] Although it is seen in the literature that the mindfulness levels of nurses are low, it is known that mindfulness practices help

What is presently known on this subject?

- It has been shown in the literature that mindfulness-based programs reduce nurses' stress levels and increase their mental well-being. However, studies examining the effects of mindfulness-based interventions on the anxiety levels and quality of work life of nurses working in the emergency department are not sufficient.

What does this article add to the existing knowledge?

- This study shows that the mindfulness-based program positively affects the state anxiety levels, quality of work life, burnout, and compassion fatigue levels of nurses working in the emergency department.

What are the implications for practice?

- With this study, it can be said that mindfulness-based practices will effectively reduce nurses' anxiety levels and increase their quality of work life by being more regular, comprehensive, and applicable to each nurse.

to increase the well-being of health-care professionals and nurses working in the emergency room. The lack of resources for this issue draws attention. As stated, the fact that there are primarily descriptive studies and the insufficiency of studies involving intervention reveals the originality of this study. In light of this information, this study was carried out to evaluate the effectiveness of the mindfulness-based program applied to nurses working in emergency departments on their anxiety levels and professional quality of life.

Materials and Method

Type of Research

The independent variable of the study is a mindfulness-based program (MBP). The dependent variable is the anxiety and professional quality of life of nurses working in the emergency department. Individual characteristics of nurses were determined as control variables.

Research Hypotheses

H1: The anxiety levels of emergency room nurses participating in MBP will decrease.

H2: Emergency room nurses' professional quality of life participating in MBP will increase.

Population and Sample of the Research

A randomized controlled study design was used in this research. The universe consisted of nurses working in emergency departments in Turkey. The snowball method reached the nurses who were to be included in the experimental and control groups. The sample size was based on the study conducted by Kang et al.^[26] (2009), using the G-Power 3.1 package program (t-test difference between two independent means (two groups) with an effect size of 0.75, with 80% power and a significance level of 0.05, based on 23 experiments and 23 experiments. It was calculated as 46 nurses, including 23 controls. Anticipating possible sample losses during the research process, it was decided to start the research with 54 nurses, which is 20% more than the sample size. Having at least 3 years of emergency department

work experience, not having participated in any mindfulness-based program before, and having participated in at least 70% of the program during the research process.

Data Collection Tools

The sociodemographic information form created by the researcher, the State-Trait Anxiety Inventory (STAI), and the Quality of Life Scale for Employees (ProQOL-30) were used to collect data.

Sociodemographic information form

In the form created by the researchers, nurses' characteristics, such as age, gender, years of work, and length of time working in the emergency department, were evaluated.^[27,28]

STAI

Was developed by Spielberger and his colleagues in 1970. The validity and reliability of the scale in Türkiye were determined by Öner (1977). There are 20 questions on the scale, 5-point Likert-type questions are asked, and scores vary between 20 and 80. A high score indicates a high level of anxiety, and a low score indicates a low level of anxiety. In the reliability analysis, the Cronbach's alpha internal consistency coefficient was between 0.94 and 0.96.^[29-31] In this study, the Cronbach's alpha value of state anxiety was 0.815, while the Cronbach's alpha value of trait anxiety was 0.806.

ProQOL-30

The Turkish validity and reliability of the scale prepared by Stamm (2005) was conducted by Yeşil et al.^[32] (2010). The scale consists of 30 questions in total and three sub-dimensions: Professional satisfaction, burnout, and compassion fatigue.

- Job satisfaction is the first of the sub-dimensions. A high score that can be obtained from this section indicates that the individual has a high sense of satisfaction with their profession.
- The second sub-dimension, burnout, measures the feeling of exhaustion that occurs when an individual experiences hopelessness and difficulty coping with business problems. A high score from this section indicates a high level of burnout.
- The last sub-dimension, compassion fatigue, is a test created to determine the symptoms that occur in individuals as a result of encountering stressful events. It determines that employees who score high in this section have high levels of compassion fatigue.

While the Cronbach's alpha value of the scale was calculated as 0.848, in this study, quality of life for employees was calculated as 0.841, professional satisfaction as 0.825, burnout as 0.807, and compassion fatigue as 0.836.

Application of Research

To determine which nurses should be included in the research, the program was announced through the social media tool "Instagram," and 62 nurses who wanted to participate in the research applied. Since six of these nurses did not work in the emergency department and two had previously participated in a program on a similar subject, they were excluded from the study. After the evaluation, 54 nurses included in the study were randomly assigned to the experimental (n=27) and control (n=27) groups using the "randomiser.org" program (Fig. 1). Two separate "WhatsApp" groups were created for the experimental and control groups; communication was ensured this way, and after the implementation dates of the program were determined, pre-tests (Socio-demographic characteristics from STAI and ProQOL-30) were applied to all participants through "Google survey" (Fig. 1). After the groups were formed and the preliminary tests were carried out, the MBP application was applied to the experimental group through the "Zoom" program. MBP, consisting of 2.5-h weekly sessions for 8 weeks, was applied to the nurses selected for the experimental group. It was applied by BBC, who has application competence, is a mindfulness-based cognitive therapy, compassion cultivation training, and mindfulness and self-compassion trainer, and has a doctorate in mental health and psychiatric nursing. MBP is a standard program that includes mindfulness and self-compassion practices developed in line with John Kabat-Zinn's research and includes content that includes basic theoretical knowledge and practical applications for breath, body, and mind (Table 1).^[33-35] MBP After the application was completed, a post-test was applied to the experimental and control groups.

Statistical Analysis of Data

The data obtained in the study were analyzed using the Statistical Package for Social Sciences for Windows 22.0 (IBM Corp, Chicago, Illinois, USA) program. Number, percentage, mean, and standard deviation were used for descriptive statistical methods to evaluate the data. Kurtosis and Skewness values were examined to determine whether the research variables showed normal distribution. In the relevant literature, results regarding the kurtosis and skewness values of variables between +1.5 and -1.5 are considered normal distributions.^[36] It was determined that the research variables showed normal distribution. Differences between the proportions of categorical variables in independent groups were analyzed using the Chi-Square and Fisher's exact tests. The t-test was used to compare quantitative continuous data between two independent groups.^[36]

Ethics Committee

To conduct the research, permission was received from Beykent University Publication Ethics Board for Social Sciences and Humanities dated April 14, 2021 and numbered 22. Permission was

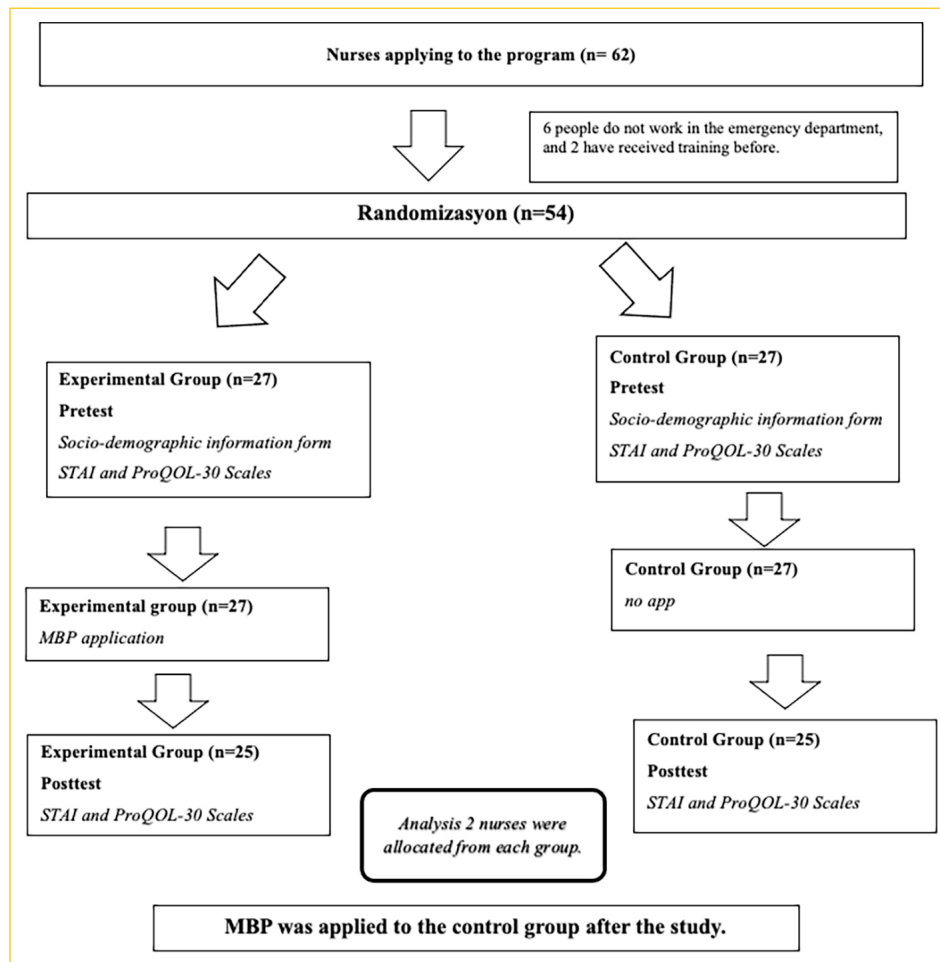


Figure 1. Flow chart for the implementation of the mindfulness-based program applied to emergency nurses based on CONSORT 201.

STAI: State and trait anxiety inventory; ProQOL-30: Quality of life scale for employees; MBP: Mindfulness-based program.

obtained from the researchers for the scales used in the study. Participation in the study was voluntary, and informed consent was obtained from all participants, with a commitment that private information about the participants would be kept confidential. The study was conducted in accordance with the Declaration of Helsinki. MBP was applied to the nurses in the control group after the final test of the study (3 months later) (Fig. 1).

Results

When Table 2 is examined, it is seen that the nurses participating in the study are similar in age, gender, working years, and working hours ($p>0.05$). When the nurses' STAI state and trait anxiety pre-test mean scores are examined in Table 3, it is seen that there is no significant difference between the experimental and control groups ($p>0.05$). There was no significant difference in the STAI trait anxiety post-test mean score ($p>0.05$). However, it is seen that the STAI state anxiety post-test mean score is significantly lower in the experimental group ($t=-3.527$, $p=0.01$).

While the STAI state anxiety score of the experimental group decreased significantly after the application ($t=3.689$, $p=0.01$), the trait anxiety score was similar to the control group ($p>0.05$). No significant difference was found in the STAI state and trait anxiety scores of the control group after the application ($p>0.05$).

In Table 4, no significant difference was detected between the ProQOL-30 scale general and all subscale pre-test scores of the experimental and control groups ($p>0.05$). There is a significant difference between the ProQOL-30 general ($t=2.588$), burnout ($t=-2.350$), and compassion fatigue ($t=-2.665$) subscale post-test scores of the experimental and control groups ($p<0.05$). In addition, while there was no significant difference between the ProQOL-30 scale general and sub-dimension pre-test and post-test scores of the control group ($p>0.05$), the ProQOL-30 general score average increased significantly after the application ($t=-2.113$), burnout ($t=3.488$) and compassion fatigue ($t=2.208$) subscale mean scores were found to decrease significantly ($p<0.05$).

Table 1. Content of the mindfulness-based program (MBP)

1. Week: What is mindfulness?	After orientation, conscious mindfulness and practices related to breathing and body will be discussed.
2. Week: What is self-compassion?	The concept of self-compassion will be introduced, and its effects and practical applications will be discussed.
3. Week: Getting rid of resistance	By understanding the resistant emotions, areas where the individual feels safe will be discussed, and practices will be carried out.
4. Week: Developing loving kindness	Developing kindness towards ourselves by deepening self-compassion practices will be discussed.
5. Week: Self-compassionate motivation and the body	The motivational sources brought by self-compassion will be explored, and their effects on the body will be discussed.
6. Week: Living deeply	Our fundamental values and needs will be discussed, with emphasis on the concept of empathy.
7. Week: Difficult emotions	Theoretical and practical applications will be made to manage anger with self-compassion by contacting emotional pain.
8. Week: Embrace the good	The discovery of good emotions and the individual's self-appreciation and self-compassion will be discussed.

Table 2. Distribution of socio-demographic characteristics of nurses by groups

	Experimental group		Control group		Total		p	X ²
	n	%	n	%	n	%		
Woman	23	92.0	20	80.0	43	86.0	p=0.209	X ² =1.495
Male	2	8.0	5	20.0	7	14.0		
	Mean	SD	Mean	SD	t	SD		
Age	34.480	8.084	35.960	8.853	-0.617	48	0.540	
Working time as a nurse	13.600	9.188	11.920	8.246	0.680	48	0.500	
Working time in the Emergency Department	9.040	9.316	7.640	3.967	0.691	48	0.494	

Chi-Square Analysis; independent groups t-test. SD: Standard deviation.

Table 3. Comparison of nurses' state and trait anxiety inventory (STAI) scale scores within and between groups (n=50)

Groups	Experimental group (n=25)		Control group (n=25)		t ^a	p
	Mean	SD	Mean	SD		
STAI state anxiety pretest	45.200	5.627	45.840	5.907	-0.392	0.697
STAI state anxiety posttest	40.960	3.758	45.880	5.876	-3.527	0.001
t ^b	3.689		-1.000			
p	0.001		0.327			
STAI trait anxiety pretest	47.040	6.308	46.280	6.773	0.411	0.683
STAI trait anxiety posttest	46.120	6.760	46.200	6.513	-0.043	0.966
t ^b	0.617		0.569			
p	0.543		0.574			

^a: Independent Groups t-test; ^b: Dependent groups t-test. SD: Standard deviation.

Discussion

This study revealed how the mindfulness-based program affected emergency room nurses' anxiety levels and profes-

sional quality of life. At the beginning of the study, it was observed that the anxiety and professional quality of life levels of the experimental and control groups were the same. However, the difference between the two groups was significant after

Table 4. Comparison of nurses' quality of life scale for employees (ProQOL-30) general and sub-dimension mean scores within and between groups (n=50)

Groups	Experimental groups (n=25)		Control groups (n=25)		t ^a	p
	Mean	SD	Mean	SD		
ProQOL-30 overall score pretest	94.160	14.035	95.240	11.896	-0.294	0.770
ProQOL-30 overall score posttest	101.480	8.554	94.680	9.974	2.588	0.013
t ^b		-2.113		0.682		
p		0.045		0.502		
ProQOL-30 subscale vocational satisfaction pretest	34.920	7.065	34.200	8.047	0.336	0.738
ProQOL-30 subscale vocational satisfaction posttest	37.000	5.188	33.840	7.793	1.688	0.098
t ^b		-1.131		1.809		
p		0.269		0.083		
ProQOL-30 subscale burnout pretest	25.360	4.803	24.280	4.878	0.789	0.434
ProQOL-30 subscale burnout posttest	21.560	3.305	24.320	4.854	-2.350	0.023
t ^b		3.488		-0.569		
p		0.002		0.574		
ProQOL-30 subscale compassion fatigue pretest	15.240	8.904	14.680	6.283	0.257	0.798
ProQOL-30 subscale compassion fatigue posttest	11.040	3.434	14.720	5.990	-2.665	0.011
t ^b		2.208		-0.272		
p		0.037		0.788		

^a: Independent Groups t-test; ^b: Dependent groups t-test. SD: Standard deviation.

the intervention. Looking at the results of the study, it can be seen that there was a significant decrease in the STAI-state anxiety levels of the emergency nurses in the experimental group at the end of the program ($p=0.001$), but their STAI-trait anxiety levels did not change ($p>0.05$). In the literature review study conducted by Smith, findings are presented that mindfulness-based interventions reduce anxiety in nurses.^[37] It was determined that the mindfulness-based intervention applied to nurses by Ghawadra et al.^[38] reduced the anxiety levels of nurses and increased their professional satisfaction levels ($p<0.001$). In a mixed-design study conducted by dos Santos et al.,^[39] it was found that mindfulness-based practices reduced nurses' anxiety levels ($p<0.001$). In the meta-analysis study conducted by Kang and Myung, it was found that mindfulness-based interventions applied to nurses were effective in reducing anxiety.^[40] It was determined that this study is parallel to the literature. In line with this result, it can be said that mindfulness-based interventions reduce nurses' anxiety levels. One of the other significant findings of this study was the changes in the professional quality of life of nurses working in the emergency department. After MBP, it was observed that there was a significant change in the ProQOL-30 scale of the experimental group ($p=0.045$), and there was a significant difference between the ProQOL-30 scores of the experimental and control groups ($p=0.013$). Ceravolo et al.^[41] reported that MBP positively affects nurses' professional quality of life. In the study of Duarte and Pinto Gouveia (2017), it was reported that

it contributed to an increase in nurses' professional quality of life.^[42] Mindfulness was reported by Cascales-Pérez et al.^[43] In a randomized controlled study investigating the effects of based practices on health-care professionals, it was concluded that their professional quality of life improved. In a meta-analysis study that analyzed randomized controlled studies, it is emphasized that mindfulness-based practices increase the quality of life of nurses.^[40] MBP increases the quality of nurses' professional lives. Study findings are parallel to the literature. Other findings obtained in the study are: While there is no significant difference in the professional satisfaction level of nurses working in the emergency department ($p>0.05$), there is a significant change in the levels of burnout ($p=0.023$) and compassion fatigue ($p=0.01$). The level of professional satisfaction is essential for nurses to maintain both individual well-being and quality of care while continuing their profession. Considering that the level of job satisfaction is affected by more than one parameter (working conditions, wages, professional prestige, etc.) and is shaped over a long period, it can be naturally interpreted that the research results differ.^[44] When the literature is examined, In the studies of Ghawadra et al.^[38] and Lin et al.,^[45] it is emphasized that MBP increases professional satisfaction in nurses. It is stated in the literature that emergency nurses have high burnout levels due to their intense work schedule and high-stress levels.^[46] In the studies of Duarte and Pinto Gouveia (2017), it was reported that the stress experienced by nurses contributed to an increase in compassion fatigue and burnout levels.^[42] A systematic study

conducted by Smith (2014) reported that mindfulness-based interventions reduced burnout in nurses.^[37] Another study emphasizes that mindfulness-based interventions reduce nurses' burnout levels.^[43] A meta-analysis study^[41] found that MBP was effective in reducing burnout and maintaining well-being, that MBP helped reduce burnout and stress levels, and in another study,^[47] it was found to reduce burnout similarly. When studies in the literature on nurses' compassion fatigue are examined, King et al.^[24] (2019) found in their qualitative study that MBP helps nurses show a more empathetic approach when assisting patients, and Boellinghaus et al.^[48] (2014) and another study also emphasize that it helps to reduce the level of compassion fatigue. MBP affects the professional satisfaction and burnout levels of nurses working in the emergency department.

Although the study's results parallel the literature, MBP effectively reduces nurses' burnout and compassion fatigue; it requires long-term follow-up to evaluate professional satisfaction.

Limitations

The results of this study cannot be generalized due to its limitations with the current sample and the participants being women. The study's limitations are that it is challenging to reach nurses, that they have problems finding time even though they are willing to participate, and that they sometimes have difficulty finding a quiet and empty environment where they need to be to perform the practices.

Conclusion and Recommendations

This study provides findings that predict the effects of mindfulness-based practices on anxiety and professional quality of life in the face of many difficulties experienced by nurses working in the emergency department. The study's findings show that FTP positively affects emergency room nurses' state anxiety, compassion fatigue, and burnout levels. Online implementation of the current study, which yields similar results to the literature, is advantageous in many aspects, such as reaching many individuals, high participation, effective use of time, and no financial expense. However, the study's limitations were that it was cross-sectional, needed more sustainability for the continuity of the practices, and that the participants were female.

Although this study shows that the mindfulness-based program is effective, its effects can only be evaluated in the short term. It may be recommended that studies be planned with longer follow-ups for long-term effects. Although mindfulness-based practices can be used as a standalone health promotion tool, future studies or institutional projects should consider combining such interventions with broader organizational programs to reduce nurse anxiety and improve well-being. Conducting studies with larger populations through mixed-method studies with nurses working in different fields is recommended.

Ethics Committee Approval: The study was approved by the Beykent University Ethics Committee (No: 22, Date: 14/04/2021).

Authorship Contributions: Concept – B.B.Ç, A.G., Y.E.T., M.Y.A., H.K.; Design – B.B.Ç, A.G., Y.E.T., M.Y.A., H.K.; Supervision – B.B.Ç, A.G.; Fundings – B.B.Ç.; Materials – B.B.Ç, A.G.; Data collection &/or processing – B.B.Ç, A.G.; Analysis and/or interpretation – B.B.Ç, A.G., Y.E.T., M.Y.A., H.K.; Literature search – B.B.Ç, A.G., Y.E.T., M.Y.A., H.K.; Writing – B.B.Ç, A.G., Y.E.T., M.Y.A., H.K.; Critical review – B.B.Ç, A.G., Y.E.T., M.Y.A., H.K.

Conflict of Interest: There are no relevant conflicts of interest to disclose.

Use of AI for Writing Assistance: No AI technologies utilized.

Financial Disclosure: The authors declared that this study has received no financial support.

Peer-review: Externally peer-reviewed.

References

1. Vasli P, Dehghan-Nayeri N. Emergency nurses' experience of crisis: A qualitative study. *Jpn J Nurs Sci* 2016;13:55–64.
2. Ducar DM, Penberthy JK, Schorling JB, Leavell VA, Calland JF. Mindfulness for healthcare providers fosters professional quality of life and mindful attention among emergency medical technicians. *Explore (NY)* 2020;16:61–8.
3. Kushal A, Gupta SK, Mehta M, Singh MM. Study of stress among health care professionals: A systemic review. *Int J Res Foundation Hosp Healthc Adm* 2018;6:6–11.
4. Patel RS, Bachu R, Adikey A, Malik M, Shah M. Factors related to physician burnout and its consequences: A review. *Behav Sci (Basel)* 2018;8:98.
5. Şengül H, Çınar F, Bulut A. The effects of anxiety levels on burnout syndrome in nurses. *Kocaeli Med J* 2019;8:219–29.
6. Gómez-Urquiza JL, De la Fuente-Solana EI, Albendín-García L, Vargas-Pecino C, Ortega-Campos EM, Cañadas-De la Fuente GA. Prevalence of burnout syndrome in emergency nurses: A meta-analysis. *Crit Care Nurse* 2017;37:e1–9.
7. Trygg Lycke S, Airoso F, Lundh L. Emergency department nurses' experiences of a mindfulness training intervention: A phenomenological exploration. *J Holist Nurs* 2023;41:170–84.
8. Altıntoprak AE, Karabilgin S, Çetin Ö, Kitapcioğlu G, Çelikkol A. Sources of stress in nurses' work environments: Depression, anxiety and quality of life levels: A comparison study among nurses serving in intensive care and inpatient units. *Psychiatry in Turkey*. 2008;10:9–17.
9. Tamer E, Ozturk H. Determination of nurses' quality of work life and influencing factors. *J Ege Univ Nurs Fac [Article in Turkish]* 2021;37:107–19.
10. Catak T, Bahcecik N. Determination of nurses' quality of work life and influencing factors. *J Marmara Univ Health Sci Inst [Article in Turkish]* 2015;5:85–95.
11. Brooks BA, Anderson MA. Defining quality of nursing work life. *Nurs Econ* 2005;23:319–26.
12. Kebapci A, Akyolcu N. The effects of the work environment on nurse burnout in emergency department *Turk J Emerg Med [Article in Turkish]* 2011;11:59–67.

13. Barbagianni S, Moisoglou I, Meimeti E, Dimitriadi I, Gialama M, Galanis P. Quality of working life in relation to occupational stress, anxiety and depression of workers in primary and secondary healthcare workplaces. *Int J Car Sci* 2023;16:1684–93.
14. Sibuea ZM, Sulastiana M, Fitriana E. Factor affecting the quality of work life among nurses: A systematic review. *J Multidiscip Healthc* 2024;17:491–503.
15. Irving JA, Dobkin PL, Park J. Cultivating mindfulness in health care professionals: A review of empirical studies of mindfulness-based stress reduction (MBSR). *Complement Ther Clin Pract* 2009;15:61–6.
16. Escuriex BF, Labbe EE. Health care providers' mindfulness and treatment outcomes: A critical review of the research literature. *Mindfulness* 2011;2:242–53.
17. Kabat-Zinn J. *Full Catastrophe Living*. 1st ed. New York, NY: Delacorte Press; 1990.
18. Wong KU, Palladino L, Langan ML. Exploring the effect of mindfulness on burnout in a pediatric emergency department. *Workplace Health Saf* 2021;69:467–73.
19. Burton A, Burgess C, Dean S, Koutsopoulou GZ, Hugh-Jones S. How effective are mindfulness-based interventions for reducing stress among healthcare professionals? a systematic review and meta-analysis. *Stress Health* 2017;33:3–13.
20. Unsar S, Kozali A, Ozdemir O, Karakoc K. Mindfulness levels of nurses. *J Nephrol Nurs* [Article in Turkish] 2023;18:78–86.
21. Asik E, Albayrak S. Determining mindfulness levels of the nurses working in a university hospital. *J Duzce Univ Health Sci Inst* [Article in Turkish] 2021;11:16–20.
22. Duarte J, Pinto-Gouveia J. Effectiveness of a mindfulness-based intervention on oncology nurses' burnout and compassion fatigue symptoms: A non-randomized study. *Int J Nurs Stud* 2016;64:98–107.
23. Muir KJ, Keim-Malpass J. The emergency resiliency initiative: A pilot mindfulness intervention program. *J Holist Nurs* 2020;38:205–20.
24. King C, Rossetti J, Smith TJ, Raison M, Gallegos D, Gorman R, et al. Effects of a mindfulness activity on nursing service staff perceptions of caring behaviors in the workplace. *J Psychosoc Nurs Ment Health Serv* 2019;57:28–36.
25. Hwang E. Effect of stress on quality of life of shift nurses in tertiary general hospital: The mediating effect of mindfulness. *Healthcare (Basel)* 2022;11:71.
26. Kang YS, Choi SY, Ryu E. The effectiveness of a stress coping program based on mindfulness meditation on the stress, anxiety, and depression experienced by nursing students in Korea. *Nurse Educ Today* 2009;29:538–43.
27. Lee YW, Dai YT, Park CG, McCreary LL. Predicting quality of work life on nurses' intention to leave. *J Nurs Scholarsh* 2013;45:160–8.
28. Smith B, Metzker K, Waite R, Gerrity P. Short-form mindfulness-based stress reduction reduces anxiety and improves health-related quality of life in an inner-city population. *Holist Nurs Pract* 2015;29:70–7.
29. Oner N, Le Compte A. *Durumluk sürekliliği kaygı envanteri el kitabı*. 1st ed. İstanbul: Boğaziçi Üniversitesi Yayınları; 1983. [In Turkish]
30. Spielberger CD, Gorsuch RL, Lushene RE. *Manual for the state trait anxiety inventory*. 1st ed. California: Consulting Psychologists Press; 1970.
31. Arlı Karadağ Ş. Evaluation of preoperative anxiety with APAIS and STAI-I scales. *J Hacettepe Univ Fac Nurs* [Article in Turkish] 2017;4:38–47.
32. Yesil A, Ergun U, Amasyali C, Er F, Olgun NN, Aker AT. Validity and reliability study of the Turkish version of the professional quality of life scale. *Arch Neuropsychiatry* [Article in Turkish] 2010;47:111–7.
33. Kabat-Zinn J. Meditation is not what you think. *Mindfulness* 2021;12:784–7.
34. Atalay Z. *Mindfulness-bilinçli farkındalık*. İstanbul: İnkılap Kitabevi; 2019. [In Turkish]
35. Atalay Z. *Mindfulness: Şimdi ve burada bilinçli farkındalık*. İstanbul: Psychonet Yayıncılık; 2018. [In Turkish]
36. Tabachnick BG, Fidell LS. *Using multivariate statistics*. 6th ed. Boston: Pearson; 2013.
37. Smith SA. Mindfulness-based stress reduction: An intervention to enhance the effectiveness of nurses' coping with work-related stress. *Int J Nurs Knowl* 2014;25:119–30.
38. Ghawadra SF, Lim Abdullah K, Choo WY, Danaee M, Phang CK. The effect of mindfulness-based training on stress, anxiety, depression and job satisfaction among ward nurses: A randomized control trial. *J Nurs Manag* 2020;28:1088–97.
39. dos Santos TM, Kozasa EH, Carmagnani IS, Tanaka LH, Lacerda SS, Nogueira-Martins LA. Positive effects of a stress reduction program based on mindfulness meditation in Brazilian nursing professionals: Qualitative and quantitative evaluation. *Explore (NY)* 2016;12:90–9.
40. Kang MJ, Myung SK. Effects of mindfulness-based interventions on mental health in nurses: A meta-analysis of randomized controlled trials. *Issues Ment Health Nurs* 2022;43:51–9.
41. Ceravolo D, Raines DA. The impact of a mindfulness intervention for nurse managers. *J Holist Nurs* 2019;37:47–55.
42. Duarte J, Pinto-Gouveia J, Cruz B. Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: A cross-sectional study. *Int J Nurs Stud* 2016;60:1–11.
43. Cascales-Pérez ML, Ferrer-Cascales R, Fernández-Alcántara M, Cabañero-Martínez MJ. Effects of a mindfulness-based programme on the health- and work-related quality of life of healthcare professionals. *Scand J Caring Sci* 2021;35:881–91.
44. Lopez J, Bindler RJ, Lee J. Cross-sectional analysis of burnout, secondary traumatic stress, and compassion satisfaction among emergency nurses in Southern California working through the COVID-19 pandemic. *J Emerg Nurs* 2022;48:366–75.e2.
45. Lin L, Liu X, He G. Mindfulness and job satisfaction among hospital nurses: The mediating roles of positive affect and resilience. *J Psychosoc Nurs Ment Health Serv* 2020;58:46–55.
46. Yu H, Qiao A, Gui L. Predictors of compassion fatigue, burnout, and compassion satisfaction among emergency nurses: A cross-sectional survey. *Int Emerg Nurs* 2021;55:100961.

-
47. Horner JK, Piercy BS, Eure L, Woodard EK. A pilot study to evaluate mindfulness as a strategy to improve inpatient nurse and patient experiences. *Appl Nurs Res* 2014;27:198–201.
48. Boellinghaus I, Jones FW, Hutton J. The role of mindfulness and loving-kindness meditation in cultivating self-compassion and other-focused concern in health care professionals. *Mindfulness* 2014;5:129–38.