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EFFECTIVENESS OF COMPLEMENTARY YOGA AND LEMON AROMATHERAPY THERAPY ON SCORES OF BURNOUT SIGNS AND SYMPTOMS IN HEALTH WORKERS IN HOSPITALS

Eko Budi Laksono*, Rukmini Syahleman, Wahyono, Larantika Hidayati
Sekolah Tinggi Ilmu Kesehatan Borneo Cendekia Medika, Jl. Sutan Syahrir No.11, Madurejo, Arut Selatan, Kotawaringin Barat, Kalimantan Tengah 74112, Indonesia
* Ekokalteng@gmail.com

ABSTRACT
Schizophrenia is a condition characterized by abnormal social behavior and an inability to understand reality. Mental health Schizophrenia is a severe and serious mental disorder that can become chronic from a young age because it involves changes in physical, psychological and socio-cultural aspects. Inappropriate treatment of schizophrenia patients will always have an impact on anxiety conditions, slurred or confused thinking, decreased auditory hallucinations, reduced social involvement and emotional expression, and lack of motivation. Management is carried out with pharmacological and non-pharmacological complementary, one of which is Burnout is a chronic stress condition related to work and can cause psychological disorders such as low self-esteem, which can ultimately lead to depression and reduce work ability, and affect patient satisfaction with nursing services. One way to overcome burnout is through non-pharmacological therapy, such as yoga and aromatherapy. The purpose of this study was to analyze the application of complementary yoga and aromatherapy to the score of signs and symptoms of burnout in nurses in hospitals. The research method used the Quasi experimental method with two control groups. The population in this study were nurses in hospitals consisting of group 1 (Combination of Yoga Therapy and Lemon Aromatherapy), 2 (Aromatherapy Therapy) and 3 for (Yoga) with 15 pieces each then put into a sealed envelope as many as 45 respondents. The results of the study showed the effect of the combination of yoga and lemon aromatherapy on the score and signs of burnout in nurses in hospitals.

Keywords: aromatherapy; burnout; complementary therapies; health workers; yoga

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INTRODUCTION

Burnout is a phenomenon of psychological problems at work caused by chronic stress in the workplace (Ramya Nagarajan). Based on the type of profession, data obtained that the general practitioner profession experienced moderate burnout 81%, the specialist doctor profession 80%, the dentist profession 82%, the nurse profession 84%, the midwife profession 83%, the laboratory officer profession 87% and the pharmacist profession 84% (Santoso). Burnout not only affects a person's professional status, but also plays an important role in the development of various mental health problems (Marvaldi et al, 2021). Insomnia and depression are common mental health problems in individuals who experience burnout. This also causes job dissatisfaction and absenteeism from the workplace (Salvagioni at al, 2017) . Nurses who experience burnout have complaints such as not enjoying their work, belittling patients, being rude in caring for patients, being incompetent, and ineffective (McCaffery at al, 2000); Dominguez at al, 2009)). One of the efforts to overcome burnout is with non-pharmacological therapy, which includes behavioral approaches, cognitive approaches, and relaxation (Samodara.C, 2015). One type of therapy that can cause relaxation so that it can reduce burnout is doing yoga and lemon aromatherapy.

Yoga therapy physiologically increases breathing in the body; relaxes muscles; strengthens mental function by reducing stress hormone levels; reduces levels of fatigue, depression, and anxiety; has a positive impact on quality of life; improves sleep quality; and provides psychological well-being by improving interpersonal relationships and social interactions (D. Janeway, 2020); M.D. Dogan, 2020; (S.I. Shattla, S.M. Mabrouk, 2019). In addition to yoga, non-pharmacological therapy to overcome burnout is by administering lemon aromatherapy. Aromatherapy can reduce sympathetic nerve activity, increase parasympathetic nerve activity, relax muscles, and regulate the circadian clock, thereby improving sleep quality and eliminating stressful (Lin at al, 2017; Shin, 2015). The purpose of this study was to analyze the application of complementary yoga and aromatherapy to the score of signs and symptoms of burnout in health workers.

METHOD

The research method used is a quasi-experimental method with two control groups. The population in this study consists of nurses at a hospital, divided into three groups: Group 1 (a combination of yoga therapy and lemon aromatherapy), Group 2 (lemon aromatherapy therapy), and Group 3 (yoga therapy), each consisting of 15 participants, making a total of 45 respondents who were selected through closed-envelope randomization. The study found the effect of combining yoga and lemon aromatherapy on burnout scores and symptoms among hospital nurses. Data collection was conducted over one month, from August to September 2024. The instrument used to measure burnout syndrome was the Maslach Burnout Inventory (MBI) questionnaire, adapted into the Indonesian language by Esti Andarini (2018). The indicators consisted of emotional exhaustion, depersonalization, and reduced personal accomplishment. The burnout scale in this study included 21 validated statements. Validity tests showed r-values ranging from 0.301 to 0.713, with a critical r-value of 0.361. The reliability test for the MBI-SS questionnaire showed an alpha reliability coefficient of 0.870 (>0.361), indicating that the MBI-SS questionnaire is reliable. Each respondent was provided with an informed consent form to participate, and ethical approval for this study was obtained from the Faculty of Medicine, Sultan Agung Islamic University, Semarang, with the ethical clearance letter numbered 238/VII/2024/Komisi Bioetik.

RESULT

Data on respondent characteristics were collected after respondents completed the demographic questionnaire. Data on burnout signs and symptoms scores were collected using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). The data were then processed using statistical software (SPSS). The bivariate tests used were the Wilcoxon test for paired group tests and the Mann-Whitney test for different test groups.

Tabel 1.
Distribution of Respondent Characteristics Based on Age

Age Group	N	Min	Max	Mean
Combination of Yoga and Lemon Aromatherapy	15	24	44	32,33
Lemon Aromatherapy	15	26	38	30,60
Yoga	15	27	40	31,67

Based on the table above, it shows that the youngest age of respondents was 24 years in the experimental group (Combination of Yoga and Aromatherapy), 26 years in the control group (Aromatherapy) and 38 years in the control group (Yoga) with an average age of 32.33 years.

Tabel 2.
Distribution of Respondent Characteristics Based on Gender

Gender	Group					
	Combination of Yoga and Lemon Aromatherapy		Lemon Aromatherapy		Yoga	
	N	%	N	%	N	%
Female	15	100	8	53,3	0	0
Male	0	0	7	46,7	15	100,0

Based on the table above, it shows that the female gender of the Yoga and Aromatherapy Combination group is the largest respondent with details of 100%, in the Aromatherapy group the largest number of respondents are female with details of 53.3% and the yoga group the largest number of respondents are male with details of 100%.

Tabel 3.
Distribution of Respondent Characteristics Based on Occupation

Education	Group					
	Combination of Yoga and Lemon Aromatherapy		Lemon Aromatherapy		Yoga	
	f	%	f	%	f	%
D3	7	46,7	4	26,7	1	6,7
S1	1	6,7	2	13,3	2	13,3
Profesi	7	46,7	9	60,0	12	80,0
Total	15	100	15	100	15	100

Based on the table above, it shows that the highest level of education in each group is the Professional education level with details of 46.7% in the Yoga and Aromatherapy Combination group, 60% in the Aromatherapy group and 80% in the Yoga group.

Tabel 4.
Pre Test Burnout

Group	Burnout			
	N	Min	Max	Mean
Combination of Yoga and Lemon Aromatherapy	15	29	65	43,67
Lemon Aromatherapy	15	35	65	42,80
Yoga	15	30	66	42,00

Based on the table above, it shows that the pre-test burnout in the experimental group (combination of Yoga and Aromatherapy) had an average score of 43.67 in the moderate category, in the control group (Aromatherapy) the average pre-test burnout score was 42.80 in the mild category, while in the control group (Yoga) the average pre-test burnout score was 42 in the mild category.

Tabel 5.
Post Test Burnout

Group	Burnout			
	N	Min	Max	Mean
Combination of Yoga and Lemon Aromatherapy	15	21	40	30,60
Lemon Aromatherapy	15	27	61	39,13
Yoga	15	28	61	40,13

Based on the table above, it shows that the post-test burnout in the experimental group (combination of Yoga and Aromatherapy) had an average score of 30.60 in the mild category, in the control group (Aromatherapy) the average pre-test burnout score was 39.13 in the mild category, while in the control group (Yoga) the average pre-test burnout score was 40.13 in the mild category.

Tabel 6.
Paired Test Group Combination of Yoga and Lemon Aromatherapy with Aromatherapy

Group		Burnout			
		N	Mean	Selisih	Sig
Combination of Yoga and Lemon Aromatherapy	Post Eksperimen	15	30,60	8,53	,043
Lemon Aromatherapy	Post_Control 1	15	39,13		

Based on the table above, it shows the results of the difference test of the experimental combination of yoga and lemon aromatherapy with lemon aromatherapy with a mean difference value of 8.53 and a sig value of 0.43.

Tabel 7.
Paired Test Group Combination of Yoga and Lemon Aromatherapy with Yoga

Group		Burnout			
		N	Mean	Selisih	Sig
Combination of Yoga and Lemon Aromatherapy	Post Eksperimen	15	30,60	9,53	,006
Yoga	Post_Control 1	15	40,13		

Berdasarkan tabel diatas menunjukan hasil uji beda uji eksperimen kombinasi yoga dan aromaterapi lemon dengan yoga dengan nilai selisih mean 9,53 dan nilai sig 0,06

DISCUSSION

Overview of Burnout Signs and Symptoms Scores in Pre-Test Hospital Nurses

In this study, researchers identified the score of signs and symptoms of burnout in nurses in hospitals before being given a combination of yoga and lemon aromatherapy. In accordance with the purpose of this study, the results showed the highest burnout score of 65 in the experimental group and aromatherapy control group, and 66 in the yoga control group. This indicates that many nurses in hospitals have a high risk of burnout and are worried about reducing service performance, experiencing depression, reducing empathy, and decreasing work enthusiasm. This study found that the average age of respondents was 30 years. This finding is consistent with previous research by (Chintia, 2018), which reported that the majority of respondents were aged 20–30 years, with a total of 74 individuals (79.7%). According to (Gibson, R., & Prima, 2017), age is one of the internal factors that influence workload. Younger nurses tend to have less work experience, which can affect their ability to manage emotions as their emotional development may not yet be fully mature.

Most respondents in this study were female, totaling 23 individuals (53.3%). This result aligns with the study by Kavurmacı et al. (2014), which stated that women are at a higher risk of experiencing burnout compared to men. Age is also known to have a significant relationship with burnout levels. The findings of Kusumaningrum (2016) also support this, where the majority of respondents were female (45 individuals or 78.95%). Psychologically, women are considered more suitable for the nursing profession, which requires not only medical skills but also emotional and affective abilities. Therefore, female nurses tend to possess higher skills and patience in providing patient care. According to (Rudman, at all 2020) early symptoms of nurse burnout have been shown to have long-term consequences on psychological health regarding cognitive function and sleep when controlling for concurrent levels of burnout symptoms and other outcome variables (i.e. cognitive problems, depression, and insomnia). In addition, a nurse is always faced with the demands of professional idealism and faces various problems from both patients and co-workers. Previous studies have shown that work burnout is related to a stressful workplace and causes poor health for nurses (Mo Y, at all. 2020). Work burnout in nurses can cause fatigue, lack of compassion for others (depersonalization), and lack of achievement and inefficiency. These effects can have a

negative impact on the general health of nurses (Cotel A, at all. 2021). In addition, adverse reactions to clients may be associated with the experience of emotional exhaustion (Abdollahimohammad, 2020).

Burnout refers to the body's reaction to challenges or demands. This condition often causes students to feel anxious, restless, frustrated, emotionally negative, fatigued, experience sleep disturbances, and face eating pattern disruptions. Burnout can result in various physical and emotional symptoms. In some cases, these symptoms, commonly experienced by nurses, might go unrecognized as signs of burnout. In their daily duties, nurses can become overwhelmed by their work if proper stress management is not implemented. When managed appropriately, stress can be effectively resolved; however, if left unmanaged, it may lead to prolonged stress. Data findings on stress levels before yoga intervention revealed that most respondents experienced moderate stress. If untreated, this could escalate to severe stress. One effective way to reduce stress levels is through yoga exercises.According to (Streeter, at al. 2012), yoga helps lower stress levels by increasing parasympathetic nervous system activity and reducing stress hormones such as cortisol. Yoga is consistently associated with a reduction in severe stress symptoms through integrated breathing control and meditation practices.

Lemon essential oil can enhance emotional well-being, reduce anxiety, and alleviate physical symptoms associated with stress, such as fatigue and sleep disturbances. Aromatherapy works by influencing the limbic system in the brain, which plays a key role in emotion regulation, and enhancing the parasympathetic nervous system activity to relieve tension. Therefore, aromatherapy can be an effective and natural approach to support mental and emotional health, providing a sense of calm, improving focus, and reducing symptoms of burnout that may affect an individual’s quality of life (Tisserand, R., & Young, 2014). To address burnout experienced by respondents, combining yoga and lemon aromatherapy is one effective approach. This combination helps improve concentration, reduce stress caused by depression, alleviate pain, and provide a sense of inner peace.

Signs and Symptoms of Burnout Scores in Hospital Nurses Post Test

In this study, researchers identified the signs and symptoms of burnout scores in hospital nurses after being given a combination of yoga and lemon aromatherapy. In accordance with the objectives of this study, the results showed a decrease in the burnout score level of 40 in the experimental group of the combination of yoga and aromatherapy, 61 in the aromatherapy control group and the yoga control group. When viewed from the percentage value of the burnout score experienced by most respondents, there was a decrease of 13.07 in the mean value after being given a combination of yoga and lemon aromatherapy for 60 minutes each time exercising with a frequency of 2 times for 1 week. One effort to overcome academic fatigue is with non-pharmacological therapy, namely including behavioral approaches, cognitive approaches, and relaxation (Samodara.C, 2015). The combination of yoga and lemon aromatherapy is one of the non-pharmacological therapies that has relaxing properties so that it can reduce stress and fatigue. Yoga improves general health through pranayama (breath control exercises), asana (yoga poses), and chanda (meditation methods), which collectively aim to achieve mental calm and foster concentration. Asana and pranayama can increase muscle strength and flexibility as well as improve blood circulation and hormone function. Meditation is effective in stabilizing the autonomic nervous system, with an emphasis on parasympathetic innervation and effective reduction of arousal (Yuan Gao, at all. 2022). In addition, aromatherapy has been shown to have a psychological effect on improving mood, using it to help people who exercise so as not to feel bad during exercise can be the right choice (Kwon, S, at all. 2020).

Supported by the results of research by (Karuniadi, at all. 2023) revealed that Yoga is a combination of movement and breathing. This combination can have a positive impact not only on the physical but also the psychological side of adolescents who do it. Deep breathing that is done in harmony with yoga movements can create a feeling of relaxation, this relaxation can create a feeling of comfort. Very beneficial effects on sleep quality, reduced stress levels, increased self-concept and changes in views in understanding everyday problems, dealing with them effectively can be associated with yoga training. According to (Field, 2011), yoga has various benefits, including reducing stress and anxiety, enhancing mood, and improving physical health such as flexibility and cardiovascular function. The study by (Lin, at all. 2018) demonstrates that aromatherapy, particularly the use of lavender and lemon essential oils, is effective in reducing burnout symptoms among healthcare workers. Aromatherapy helps lower stress, anxiety, emotional exhaustion, and improves sleep quality, all of which are critical factors in addressing burnout. Additionally, aromatherapy plays a role in reducing stress hormone levels, such as cortisol, and enhancing the physical and psychological well-being of healthcare workers. With measurable benefits and ease of implementation, aromatherapy can be an effective and practical approach in managing stress and burnout in high-pressure work environments like hospitals. Integrating aromatherapy into healthcare workers' routines can improve their well-being, which in turn can potentially enhance the quality of care provided to patients.

According to research conducted by (Wang, F., & Szabo. 2020), evidence that yoga has an effect on reducing stress is increasingly clear. All forms of yoga and yoga-based interventions, such as mindfulness or meditation, show significant benefits in reducing stress. Variations in yoga practice, as well as combinations with mindfulness-based interventions, are recommended to help reduce and manage stress. Yoga, which has long been known as a method of mind-body healing, through physical postures and breathing exercises, can relieve physical and mental tension. This provides a strong explanation for how yoga works to reduce stress. A systematic review also supports the finding that yoga has a positive impact on reducing stress in healthy adults. After the intervention, it was found that the combination of yoga and lemon aromatherapy was able to reduce the score of signs and symptoms of burnout in nurses. In addition to reducing stress, other positive effects that emerged gradually were a decrease in depression and anxiety. Yoga and aromatherapy can also increase blood flow and oxygen supply to the brain, which helps improve mood, lower blood pressure, and strengthen the immune system. From this statement, it can be concluded that yoga and lemon aromatherapy have a positive impact, so they can be one of the options for reducing stress levels.

Effectiveness of Yoga and Aromatherapy on the score of signs and symptoms of burnout in nurses

The results obtained in this study on 45 nurse respondents in the hospital showed that changes in the level of nurse burnout before the intervention and after the intervention was given. In the stage before the intervention, the highest burnout score was obtained, namely 65 in the experimental yoga and lemon aromatherapy group and the lemon aromatherapy control, the burnout score was 66 in the yoga control group. Marked by emotional exhaustion, depersonalization, and decreased self-achievement. The fact of the research results shows that the pre-test average burnout score was 43.67 in the experimental group (combination of yoga and lemon aromatherapy), the average burnout score was 42.80 in the control group (lemon aromatherapy) while in the control group (yoga) the average burnout score was 42. After the intervention was carried out, the pre-test average burnout score was 30.60 in the experimental group (combination of yoga and aromatherapy), 39.13 burnout score in the control group (aromatherapy) while in the control group (yoga) 39.13 burnout score. The results of the

comparison of burnout scores between the experimental group (combination of yoga and lemon aromatherapy) and the control group (lemon aromatherapy) obtained a significance value of 0.043 p value <0.005 concluded that there was a significant difference between the two groups with a difference in burnout scores of 8.53. Meanwhile, the results of the comparison of burnout scores between the experimental group (combination of yoga and lemon aromatherapy) and the control group (yoga) obtained a significance value of 0.006 p value <0.005 concluded that there was a significant difference between the two groups with a burnout score difference of 9.53.

From the results of several studies, it was shown that yoga therapy and lemon aromatherapy can affect the score of signs and symptoms in nurses, because yoga can increase oxygen flow in the body and stimulate the production of endorphins, which function as natural sedatives produced by the brain, this can create a sense of comfort and reduce high blood pressure. Hatha yoga exercises have been shown to increase β-endorphin levels in the blood by four to five times. Therefore, the more often a person practices, the higher the levels of β-endorphins produced. When someone exercises, β-endorphins will be released and received by receptors in the hypothalamus and limbic system, which play a role in regulating emotions. Increased β-endorphin levels have been shown to have a close relationship with blood pressure and respiration (Sindhu,2014). (Field, 2011) found that yoga practice can reduce cortisol levels, improve mood, and decrease symptoms of stress and burnout, particularly among healthcare professionals and populations experiencing high work-related stress.

Yoga and lemon aromatherapy influence the signs and symptoms of burnout through mechanisms involving the nervous system, hormones, and inflammatory processes. Yoga, through breathing exercises and meditation, stimulates parasympathetic nervous system activity, reduces stress hormone levels such as cortisol, and increases neurotransmitters like serotonin and GABA, which help alleviate anxiety and emotional exhaustion. Additionally, yoga decreases inflammatory markers such as IL-6 and CRP, which are often elevated in chronic stress (Kavurmaci, M., 2024). Meanwhile, lemon aromatherapy, which contains active compounds like limonene and linalool, works by stimulating the limbic system, reducing amygdala activity, and lowering cortisol levels, thereby helping to relieve mental fatigue and boost energy.

The combination of both creates a synergistic effect in reducing burnout symptoms such as emotional exhaustion, depersonalization, and a low sense of personal accomplishment by enhancing overall well-being (Mice., 2014). In addition to yoga, lemon essential oil can help relieve stress because it has refreshing properties. Aromatherapy is a therapy technique using concentrated essential oils derived from aromatic plants. Research in the Lemon Inhalation Journal revealed that the substance contained in lemon, linalool, helps stabilize the nervous system and can have a calming effect on anyone who inhales it (Soraya, 2021). One innovation to increase interest and facilitate the use of lemon is to make it a topical preparation, including cream (Al Mansur et al., 2017). The benefits of lemon aromatherapy are to increase calm, balance, comfort, reduce stress, depression, pain, imbalanced emotions and frustration. When yoga therapy and lemon aromatherapy are combined, they can complement each other in reducing burnout symptoms. Yoga provides profound physical and mental benefits, while lemon aromatherapy adds a refreshing and calming sensory dimension, creating a holistic relaxation experience. Thus, the combination of these two therapies can help individuals feel more balanced, calm, and better able to cope with stress and burnout symptoms.

The significant difference between the combination of yoga and lemon aromatherapy on the score of signs and symptoms of burnout in nurses before and after being given a combination of yoga and lemon aromatherapy shows that the combination of yoga and lemon aromatherapy can be used as an alternative therapy for burnout sufferers to reduce the score of signs and symptoms of burnout. Research shows that the combination of yoga therapy and lemon aromatherapy is effective in reducing symptoms of burnout in nurses. Yoga increases oxygen flow and stimulates the production of endorphins, which act as natural sedatives, increase comfort, and lower blood pressure. Increased levels of β-endorphins from yoga practice are also closely related to the regulation of emotions, blood pressure, and respiration. Lemon aromatherapy has a calming effect, stabilizes the nervous system, and helps reduce stress and depression through substances such as linalool. The combination of yoga and lemon aromatherapy provides complementary physical, mental, and sensory benefits, creating holistic relaxation and helping individuals cope with burnout better.

CONCLUSION

Based on the results of the study and discussion on the effectiveness of complementary yoga and aromatherapy on the score of signs and symptoms of burnout in nurses in hospitals, it can be concluded that there is an influence between the provision of complementary yoga and lemon aromatherapy on the score of signs and symptoms of burnout in nurses in hospitals. This study is expected to be a reference for health workers, especially nurses in dealing with signs and symptoms of burnout. This study emphasizes the importance of handling the psychological conditions of patients and providing education on coping mechanisms to reduce signs and symptoms of burnout.

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