



Original Article

Spiritual relaxation therapy to improve sleep quality for nurses working shifts who experience sleep problems: a quasi-experimental study

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ABSTRACT

Background: Impaired sleep quality is a common problem experienced by nurses working shifts, and if not treated properly, it can impact their work performance and overall health. Spiritual Emotional Freedom Technique (SEFT) therapy has been proven to improve sleep quality. However, its effectiveness has never been studied in nurses who experience sleep disorders due to working shifts.

Objective: To investigate the influence of spiritual relaxation therapy on sleep quality among nurses experiencing sleep disturbances due to shift work.

Method: This is a Quasi-Experimental study with a pre-test-posttest control group design. A total of 38 nurses who experience sleep disorders due to working shifts were included in this study. The PSQI questionnaire was utilized as the instrument to measure sleep quality. Data analysis involved the Mann-Whitney test.

Results: The average sleep quality before the intervention was in the mild category; after the intervention, most were in the good category. The results showed that the sleep quality of nurses who received spiritual relaxation was better than the control group ($p < 0.001$).

Conclusion: Spiritual relaxation therapy effectively improves the sleep quality of nurses experiencing sleep disturbances due to shift work.

INTRODUCTION

Nurses, particularly those working night shifts, may experience disruptions in sleep quality.¹ Poor sleep quality can result in adverse outcomes, including irritability, diminished focus at work, and an increased risk of work-related accidents or injuries.²⁻⁶ In the United States, it is reported that out of 540 nurses working in six hospitals, 77.4% had poor sleep quality; in Taiwan, the figure was 57.0%.^{7,8} In China, approximately 55.7% to 76.3% of nurses experience sleep quality disturbances.⁹⁻¹¹ In Indonesia, nurses working in shifts experience sleep quality disturbances ranging from 64.5% to 92%.^{1,12,13} A preliminary study conducted on December 22, 2021, at the Emergency Department and Inpatient Care of Dr. R. Koesma Public Hospital in Tuban found that 72.7% of nurses had poor sleep quality.

The reduction in nurses' sleep quality may be attributed to factors such as workload (weekly working hours), night shift duties, and work-related stress (including low workplace social support, high job demands, and job insecurity), along with individual factors like gender and physical activity.⁹ The adverse effects of poor sleep quality extend beyond the health of nurses, impacting job performance and increasing risks to patient safety.¹⁴ Night shift work is known to disturb circadian rhythms, resulting in alterations in levels of ghrelin, leptin, insulin, cortisol, and melatonin.^{15,16}

Non-pharmacological interventions that can enhance sleep quality include music therapy, activity therapy, massage therapy, acupressure, relaxation therapy, progressive muscle relaxation therapy, hypnosis, aromatherapy, imagery techniques, and distraction.^{17,18} Some prior studies have suggested that Spiritual Emotional Freedom Technique (SEFT) therapy and Benson relaxation therapy

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effectively improve sleep quality in the elderly.¹⁹⁻²² Although this research examining the impact of spiritual relaxation therapy on nurses' sleep quality is limited, earlier studies have demonstrated its efficacy in reducing stress levels in chronic kidney disease patients undergoing hemodialysis and decreasing dysmenorrhea.^{23,24} However, the effectiveness of spiritual relaxation therapy, specifically on sleep quality, remains inconclusive. This study investigated the influence of spiritual relaxation therapy on the sleep quality of nurses facing sleep disturbances due to shift work.

METHOD

Study Design

This is a quasi-experimental study with a pre-post-test control group design.²⁵

Setting and Respondents

This research was conducted at the Emergency Department and Inpatient Care of Dr. R. Koesma Public Hospital in Tuban from March to April 2022. The population in this study consisted of nurses working in a shift system who experienced sleep quality disturbances. A total of 38 respondents were included.²⁶ Inclusion criteria for this study were: 1) Muslim nurses; 2) Nurses working in a shift system experiencing sleep quality disturbances. The exclusion criteria were respondents unable to follow therapist suggestions. The participants were divided into two groups randomly: the intervention group and the control group.

Experimental Procedure

Spiritual relaxation therapy is administered for 30 minutes, with four stages: 1) Initiation stage: Participants are seated or lying. 2) Induction stage: Deep and slow breaths are taken through the nose and exhaled slowly through the mouth. While exhaling, participants imagine releasing all burdens or problems (repeated three times). This stage lasts 2-3 minutes. 3) Suggestion stage: Participants engage in self-suggestion, convincing themselves they will be healthy and happy. This stage lasts 10-15 minutes, and 4) Termination stage: Participants reach a comfortable and relaxed state. They can open their eyes gently, take a deep breath, and move their fingers and toes. This phase lasts between 5-7 minutes.^{27,28} Spiritual relaxation therapy is administered six times within one month, with a schedule of two sessions per week. The control group receives education on the benefits of sleep according to their needs.

The Variables, Instruments, and Measurement

The variable in this study is sleep quality. The standardized questionnaire Pittsburgh Sleep Quality Index

(PSQI) is the instrument used.³⁰ The questionnaire assesses seven components of sleep quality: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. The global score ranges from 0 to 21, with a classification of ≤ 5 indicating good sleep quality and $> 5-21$ indicating poor sleep quality. Poor sleep quality is categorized into three levels: scores 6-10 represent mild sleep disturbances, scores 11-15 indicate moderate sleep disturbances, and scores 16-21 indicate severe sleep disturbances. In this study, sleep quality observation is conducted twice: 1) Before spiritual relaxation therapy, on the first day off after a night shift, and 2) After the intervention, one week after the sixth session.

Data Analysis

The data are analyzed using the Mann-Whitney U test.²⁵

Ethical Consideration

The Ethics Commission of Unipdu has ethically tested this research with certificate number 001.22/KEP-Unipdu/3/2022.

RESULTS

Most participants are female, with an average age of 35 years. The respondents have a work shift experience exceeding five years. Nearly all respondents are non-smokers (Table 1). In this study, before spiritual relaxation therapy was administered, the sleep quality of nurses in both groups mainly experienced mild sleep disturbances, 73.7% of respondents in the intervention group and 68.4% in the control group. Meanwhile, those experiencing moderate sleep disturbances were 26.3% in the intervention group and 31.6% in the control group. After undergoing spiritual relaxation therapy, the sleep quality in the intervention group mainly improved, while in the control group, most respondents still experienced mild sleep disturbances. Statistical analysis showed that the sleep quality of nurses who received spiritual relaxation was better than that of the control group ($p < 0.001$) (Table 2).

Table 1. Characteristics of Respondents (n=38)

Characteristics	Result
Gender	
Male	16 (42.1%)
Female	22 (57.9%)
Age, years	35.9 \pm 6.9
Duration of shift work	
1-5 years	13 (34.2%)
>5 years	25 (65.8%)
Smoking Habit	
Yes	8 (21.1%)
No	30 (78.9%)

Table 2. The Influence of Spiritual Relaxation Therapy on Sleep Quality (n=38)

Groupe	Pre		Post			p-value
	Mild	Moderate	Mild	Moderate	Good	
Spiritual Relaxation	14 (73.7%)	5 (36.3%)	7 (36.8%)	0 (0%)	12 (63.2%)	0.0001
Control	13 (68.4%)	6 (31.6%)	15 (78.9%)	4 (21.2%)	0 (0%)	

DISCUSSION

Spiritual relaxation therapy can improve the sleep quality of nurses experiencing sleep disturbances due to shift work. A nurse's sleep quality improves when they believe and are highly open to the therapy provided. Additionally, nurses can follow the stages of spiritual relaxation therapy well, starting from initiation, induction, and suggestion to termination stages. Spiritual relaxation provides benefits when someone surrenders, achieving a state of relaxation that can reduce sympathetic nerve activity and increase endorphin and melatonin hormones, enabling nurses to sleep peacefully and wake up feeling refreshed. On the contrary, if a nurse is not receptive and rejects the intervention, a state of relaxation may not be achieved, leading to an inability to rest peacefully.²¹

Spiritual relaxation is an individual's effort to achieve a state of relaxation characterized by a decrease in sympathetic nervous system activity through the client's religious beliefs to control their physical state. The relaxation response allows an individual to control physiological activities, self-regulation, and peace. The spiritual relaxation response can increase endorphin hormones, which have properties similar to morphine in the body, providing a sense of calmness and vitality. The spiritual relaxation response can also increase melatonin hormones, influencing an individual's sleep quality.³¹ During spiritual relaxation, individuals are guided to cultivate and experience feelings of gratitude, patience, sincerity, and submission to Allah. To achieve relaxation, individuals engage in the repetitive recitation of the dhikr "Subhanallah".²⁴

Physiologically, when inhaling, the body obtains the much-needed oxygen to cleanse the blood and prevent damage to brain tissues due to oxygen deficiency. During a deep and prolonged breath, the abdominal wall muscles push the lower ribs backward and push the diaphragm upward, causing an increase in intra-abdominal pressure. This stimulates blood flow through the inferior vena cava and abdominal aorta, increasing blood circulation throughout the body and enhancing alpha waves in the brain. This, in turn, fulfills the brain's oxygen requirements, inducing a state of relaxation in the body. Additionally, the mind also relaxes, facilitating entry into a sleep state.²⁷

Spiritual relaxation is an intervention that combines pure relaxation therapy with accompanying spiritual suggestions, allowing individuals to attain tranquility not only on a

physical level but also on a spiritual one. Consequently, individuals can experience the additional benefits of this spiritual relaxation therapy.³² Spiritual relaxation therapy can be conducted independently and consistently by respondents, enabling the maintenance of good sleep quality.

The results of this study are supported by previous research indicating that the sleep quality of the elderly improves after receiving Spiritual Emotional Freedom Technique (SEFT) therapy.^{19,20,33} SEFT is a relaxation technique and one complementary form of mind-body therapy that utilizes the body's energy system to improve individuals' mental, emotional, and behavioral conditions. SEFT focuses on reciting words or phrases with a regular rhythm and a surrendering attitude to Allah. Someone who prays calmly and has a sincere heart will experience relaxation in the body. This eventually results in a relaxed state, making it easier to initiate sleep.³⁴ During tapping, there is an increased process in the transmission of neurotransmitter signals that reduces the regulation of the hypothalamic-pituitary-adrenal axis (HPA axis), thereby reducing the production of the stress hormone cortisol.³⁵ The decreased cortisol levels can induce relaxation and address sleep disturbances.²⁰

Several previous studies also indicate that Benson relaxation effectively improves the sleep quality of the elderly.³⁶⁻³⁹ Benson relaxation is a combination of relaxation techniques and beliefs. The religious belief element involves the repeated recitation of words or phrases corresponding to individual beliefs, accompanied by a surrendering attitude. Benson relaxation therapy induces relaxation in the body, alleviates tension during stress, and eliminates threats. The feeling of relaxation is transmitted to the hypothalamus, triggering the corticotropin relieving factor (CRF) release. CRF stimulates the pituitary gland to increase Pro-opioid melanocortin (POMC) production, leading to an increased enkephalin production by the adrenal medulla. The pituitary gland also produces β -endorphin as a neurotransmitter that influences a relaxed mood. The increased levels of enkephalin and β -endorphin induce relaxation and comfort, making it easier to initiate sleep, thus fulfilling the need for sleep.²¹

The commonality among SEFT therapy, Benson relaxation, and spiritual relaxation therapy is that all these interventions combine relaxation techniques and spiritual therapy to achieve a state of relaxation.^{40,41} The process of relaxation techniques induces a state of relaxation in

individuals. It begins by relaxing the smooth muscles of the arteries, veins, and other muscles. Relaxing these muscles leads to a decrease in the levels of norepinephrine in the blood. These relaxed muscles send signals to the hypothalamus, creating a sense of calm and comfort in the soul and the human body. When a patient prays calmly, the body undergoes relaxation, causing the patient to become calm.⁴² Breathing and heart rate become regular and stable, promoting blood circulation. Individuals find themselves exceptionally relaxed, making it easy to initiate sleep when relaxed.³³

CONCLUSIONS AND RECOMMENDATION

Spiritual relaxation therapy improves sleep quality in nurses experiencing sleep disturbances due to shift work, as evidenced by the difference in average sleep quality after the intervention. Spiritual relaxation therapy can be used as an alternative to address sleep quality issues in nurses facing sleep disturbances due to shift work.

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