The Effect Of Autogenic Relaxation And Dhikr On Sleep Quality In Chronic Kidney Disease Patients Undergoing Hemodialysis Therapy At Fatimah Islamic Hospital

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ABSTRACT

Introduction: CKD is a serious condition that can affect anyone from teenagers to old people, and many underlying causes may result in it. Sleep disturbance problems regarding sleep quality affects CKD patients undergoing hemodialysis therapy. A psychological or physiological imbalance could arise as a result of a person's inadequate quality sleep. This study was conducted to determine the effectiveness of autogenic relaxation and dhikr in improving sleep quality in patients with chronic kidney disease undergoing haemodialysis at Fatimah Islamic Hospital.

Methods: A quasi-experiment was performed for this research; therefore, a pre-test and post-test control group design was adopted in this study. For this research, 44 respondents were involved in it and later on divided into two groups. For this study, data analyses were performed using the Wilcoxon and Mann-Whitney tests at a significance of p <0.05. The PSQI was the instrument employed to measure sleep quality pre- and post-intervention.

Results: The results in this study are significant. Precisely, the Wilcoxon test yielded a p-value of 0.003, while the Mann-Whitney test returned a p-value of 0.025.

Conclusion: Autogenic relaxation therapy and dhikr give effects to improve the quality of sleep in chronic kidney disease patients undergoing hemodialysis therapy at Fatimah Cilacap Islamic Hospital. Hopefully, future studies evaluate the feasibility and effectiveness that include the training of health providers and integration into treatment protocols for the incorporation of autogenic relaxation and dhikr into routine hemodialysis care.

1. INTRODUCTION

CKD is a serious, chronic condition that can affect anyone of any age, from adolescence up to the elderly years, and may be caused by various underlying conditions (Bayhakki & Hasneli, 2018; Kalantar-Zadeh et al., 2021; Lameire et al., 2021). People with CKD who have reached the final stage and whose kidneys are no longer functioning, will need several ways to get rid of toxic substances in the body, one of which is hemodialysis therapy. Patients with CKD who are dependent on dialysis machines for the rest of their lives, need adjustments to illness conditions that result in changes in their lives that trigger sleep disturbances. Most of patients undergoing hemodialysis therapy have sleep disturbance problems (Almutary, 2022; Alshammari et al., 2023; Damanik, 2020)

There are more than 850 million people with kidney problems worldwide and it is estimated that this will continue to increase every year. The prevalence of chronic kidney disease based on gender is 10.4% in men and 11.8% in women. The majority of people are not aware that they have kidney problems due to the lack of symptoms, so CKD is called the silent killer, especially as WHO states that CKD is one of the most common causes of death in the world (International Society of Nephrology, 2020).

Inadequate sleep and poor sleep quality, if not handled properly, can cause two disturbances,

namely, physiological and psychological balance. The physiological impacts caused include decreased daily activities, excessive tiredness and tiredness, decreased endurance, and instability of vital signs. The psychological impacts that can be caused include depression, anxiety and disorientation (Potter, A. G. Perry, A. Hall, 2009). Apart from that, negative impacts such as changes in quality of life, decreased sleep quality, and a decrease in the body's ability to recover during treatment will also prolong the treatment period.

Sleep disturbances can be managed through various methods, with two commonly used approaches: pharmacological therapy (medications) and non-pharmacological complementary therapies, such as autogenic relaxation. Autogenic relaxation is a self-induced form of relaxation that involves focusing on pleasant sensations in different parts of the body, such as the head, chest, arms, back, big toes, hands, and wrists. These sensations include feelings of warmth, heaviness, or relaxation in specific areas, coupled with a sense of calmness achieved through deep and slow breathing (Dewi et al., 2022).

Apart from autogenic relaxation, another important relaxation technique helpful according to Islam is dhikr. Dhikr is letting oneself go in the custody of Allah Subhanahu Wa Ta'ala through some pre-specified words and phrases that create peace and harmony internally. One of the most helpful forms of dhikr involves breath dhikr, which is basically a mindfulness technique coordinating the repetition of 'Hu Allah' with the rhythm of breathing. Inhale and say to yourself, 'Hu', which means in parsi, He-Allah; exhale and say, 'Allah'. And this simple ritual will help create in him the sense of calm and depth of understanding (Yulianti et al., 2023).

Previous studies showed that autogenic relaxation significantly improved the sleep quality of hemodialysis patients, both subjective and objective, with notable improvement in the intervention group. The studies relating to Asmaul Husna dhikr therapy conducted with ICU patients demonstrated that sleep quality notably improved. The patients who received the dhikr therapy reported increased drowsiness and even frequently fell asleep during the treatment.

2. METHODS

Study Design

This study tries to investigate how autogenic relaxation therapy combined with dhikr may improve sleep quality for chronic kidney disease patients undergoing hemodialysis through a quasi-experimental design with pre- and post-tests in each group. In this respect, the research compares the sleep quality of patients before and after the intervention to find the level of impacts of these practices on the well-being of the patients.

Population, Samples, and Sampling

The study population is 111 CKD patients undergoing hemodialysis therapy. There were 22 participants in the experimental group with a purposive sampling technique, while the control group has 23 members. The inclusion criteria include CKD patients on hemodialysis therapy; both male and female; at least 20 years of age who were cognitively oriented and underwent a minimum of 3–4 hours of therapy per week. Those patients that refused to grant informed consent and those currently on sleeping pills were excluded from this study.

Instruments

This study used the PSQI instrument, adapted from Setyowati & Chung (2021), which includes seven components: sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleep medication, daytime disturbances, and subjective sleep quality. The PSQI score ranges from 0 to 21, with higher scores indicating worse sleep quality; a score above 5 suggests poor sleep quality. The instrument's validity and reliability were tested, with all items showing a Pearson correlation coefficient above 0.30, confirming validity. The reliability test yielded a Cronbach's alpha of 0.80, exceeding the acceptable threshold of 0.70, thus confirming the instrument's reliability.

Procedure

The procedure of research is composed of three major phases: orientation phase, intervention phase and termination phase. The orientation phase will involve an introduction of the researcher, asking the name of the respondent, and detailing the aims, objectives, and benefits of the study. Following this, consent to join in will be requested by the researcher from the respondent, and thus an informed consent may also be requested from the respondent to sign. The intervention phase will be made up of 10 sessions of autogenic relaxation therapy which involves two techniques that induce relaxation. Each session will last 20 minutes; the intervention will be done in a sequence of four weeks, once a week. During the termination phase, four weeks after the intervention, the effectiveness of the therapy and quality of sleep of the respondents will be measured by the researcher. This comprehensive description ensures that the research procedure can be accurately replicated.

Data Analysis

In this study, a homogeneity test indicated that the data is homogeneous (p = 0.111 > 0.05). A normality test using Shapiro-Wilk showed a p-value of 0.000 < 0.05, indicating the data is not normally distributed. Therefore, the Wilcoxon test was used to

assess the effect of therapy, while the Mann-Whitney

Table 1: Frequency Distribution of Respondent Characteristics

No	Characteristic	Experiment		Control	
		F	%	F	%
1.	**Gender**				
	Male	13	59,1	9	39,1
	Female	9	40,9	14	60,9
2.	**Age**				
	20-25	2	5	0	0
	26-35	2	5	3	13
	36-45	3	13,5	6	25,8
	46-55	6	27,2	7	30,2
	56-65	8	36,2	5	21,6
	> 65	1	4,5	2	8,6
3.	**Lifestyle**				
	Coffee	2	9,1	8	34,8
	Smoking	2	9,1	0	0
	Both	0	0	3	13,0
	None	18	81,8	12	52,2
4.	**HD duration (months)**				
	1-24	12	36,2	16	56,3
	25-48	7	31,8	1	4,3
	49-72	1	4,5	4	17,4
	>72	2	9,1	2	8,6
5.	**Environment**				
	Noisy	2	9,1	2	8,7
	Vehicle Noise	2	9,1	3	13,0
	None	18	81,8	18	78,3
6.	**Activity**				
	Light	16	72,7	13	56,5
	Moderate	2	9,1	6	26,1
	Heavy	4	18,2	4	17,4
7.	**Education**				
	Elementary school	16	72,7	14	60,9
	Junior high school	3	13,6	4	17,4
	High school/vocational school	2	5	3	13
	Bachelor	0	0	1	4,3
	Uneducated	1	4,5	1	4,3

U test was employed to compare the experimental

Table 2. Frequency Distribution of Sleep Quality in CKD Patients Undergoing Hemodialysis

Sleep Quality	Experiment		Control		Total
	F	%	F	%	
Pretest					
Good	8	36,4	10	43,5	18
Poor	14	63,6	13	56,5	27
Post tets					
Good	16	72,7	9	39,1	25
Poor	6	27,3	14	60,9	20
Total	22	100%	23	100%	45

Table 3. Results of the Wilcoxon Test

Variable	N	Mean rank	Std. Deviation	Min-Max	P va
Experimental group					
Pre test	22	12,06	5,29804	6-27	0,0
Post test	22	9,00	4,89213	7-22	
Control group					
Pretest	23	11,55	4,65022	9–23	0,7
Posttest	23	12,42	5,35536	2-25	

Table 4. Results of the Man Whitney Test

Group	N	Mean	Sign	Z	Desc
Experiment	22	19.14			
Kontrol	23	26.70	0,025		Significance
				-2,242	

and control groups, revealing a significant difference (p < 0.05). The Wilcoxon signed-rank test showed significant within-group changes over time (p < 0.01), highlighting the intervention's effectiveness and meaningful differences both between and within 2 groups.

Ethical Clearance

This research has received ethical approval, adhering to the seven 2011 WHO standards and informed consent as outlined by the 2016 CIOMS Guidelines. The study was reviewed by an Ethics Committee, which confirmed its compliance with these ethical standards. The research was deemed ethically acceptable based on the fulfillment of all required criteria.

3. RESULTS

Table 1 shows that the majority of respondents in experiment group were male, namely 13 people (59.1%). While the majority of respondents in experiment group were male, namely 14 people (60.9%). The average age of respondents in the experimental group ranged from 56–65 years, with as

many as 8 people (36.2%). Respondents in the control group mostly had an age range of 46–55 years, namely 7 people (30.2%). The lifestyle of the experimental group respondents showed that they did not consume coffee and cigarettes as much as 18 people (81.8%). Most of the lifestyles of the control group respondents also fell into the category of not consuming coffee and cigarettes, as many as 12 people (52.2%). Most of the respondents in the experimental group were in the 1–24 month timeframe, with 12 people (36.2%). Most of the respondents in the control group were in the 1–24 month timeframe, with 16 people (53.3%). Most of the respondents in the experimental group did not have any disturbances, as many as 18 (81.8%). Most of the respondents in the control group did not have any disturbances, as many as 18 people (78.3%). Most of the respondents' activities in the experimental group were in the mild category, with 16 people (72.7%). The activities of the control group respondents were mostly in the mild category: 13 people (56.5%). Meanwhile, the education of the respondents in the experimental group was mostly elementary school, with 16 people (72.7%). Most of the respondents in the control group were in elementary school: 14 people (60.9%). The homogeneity test showed that all the respondents in this study shared similar characteristics, with no significant differences among them, as indicated by a p-value greater than 0.05

Based on Table 2, The sleep quality of the experimental group before being given the autogenic relaxation therapy intervention and Dhikr showed that 14 people (63.3%) had poor sleep quality. After being given the interventions of autogenic relaxation therapy and dhikr, the experimental group's sleep quality improved, with as many as 16 people (72.7%) having good sleep quality.

Based on table 2. Wilcoxon Signed Rank Test showed a value of p = 0.003 (p <0.05) in the sleep quality value of the experimental group, which means there was a difference between before and after being given autogenic relaxation and dhikr interventions. This shows the effect of autogenic relaxation therapy and dhikr in the intervention group

In Table 3, we can see that the average sleep quality score in the experimental group is 19.14, while in the control group, it's 26.70. This suggests that the experimental group, which received the intervention, had better sleep quality than the control group.

Further analysis using the Mann-Whitney U test, as shown in Table 4, gives a significance value of 0.025. This indicates a significant difference in sleep quality between the CKD patients who received autogenic relaxation therapy and dhikr and those who did not. Therefore, the hypothesis that the intervention improves sleep quality is supported, with the intervention group showing better sleep quality than the control group.

4. DISCUSSION

From the analysis result of Wilcoxon test, it can be concluded that there is an effect among autogenic relaxation therapy and dhikr on sleep quality of chronic kidney disease patients undergoing hemodialysis therapy at Fatimah Islamic Hospital Cilacap. This was supported by data showing that the results of the post test between the two groups were significantly better in the intervention group. The results of this study are in agreement with research conducted by Wulandari, et., all. (2019) that shows the effect of autogenic relaxation therapy on sleep quality in chronic kidney disease patients undergoing hemodialysis therapy. This is in agreement with the results of statistical tests that obtained a p-value of 0.000, less than 0.05; it means there is an effect of autogenic relaxation therapy on sleep quality in patients with chronic kidney disease undergoing hemodialysis therapy. From this study, it can be concluded that autogenic relaxation therapy was used effectively in improving sleep quality in patients with chronic kidney disease undergoing hemodialysis therapy.

The results obtained from this study also run concurrently with research Hastuti et al., (2019) This shows that there is an effect of dizkir therapy on sleep quality. This agrees with the statistical tests whose p was obtained to be less than 0.000, indicating there is indeed an effect of dhikr therapy on sleep quality. Conclusively, from this study, it can be established that the therapy of dhikr is one effectively used in improving the quality of sleep. This is further enhanced by data indicating that the results of the post-test between the two groups were significantly better in the intervention group. Autogenic relaxation, as its name suggests, combines breathing techniques with meditation in order to enhance oxygen intake, supporting proper cell metabolism and energy production. The brain needs a sufficient supply of oxygen to maintain good balance, which can promote relaxation and increase heart rate variability, an indicator of good autonomic nervous system functioning. This type of relaxation can reduce stress and raise alpha brain waves, thereby stimulating the RAS and increasing serotonin and melatonin production, which controls the circadian system for better-quality sleep. For breathing dhikr, the repetition of "Hu Allah" synchronized with breathing has a positive impact on the sympathoadrenal and hypothalamus-pituitary-adrenal systems and is considered a tool for inducing relaxation. This process reduces the amount of stress hormones released within the body, such as adrenaline and cortisol, which then predisposes physiological changes to promote sleep.

Such dhikr breathing was found beneficial because it positively affects the quality of sleep according to research by Fandiani, Wantiyah & Juliningrum (2017). With the synchronization of the mind and body, such techniques will ensure an overall improvement in mental and physical health. What is most important about all this is that it emphasizes a lot on the rise of oxygen intake and stimulus effects on the autonomic nervous system, which infers clearly that one cannot create balance and relaxation without proper breathing. Additionally, spiritualcy adds another separate dimension to this breathing form of dhikr, the mindfulness intertwined with deep attachment and a sense of purpose.

It can be concluded that the results of this study indicate an increase in sleep quality in CKD patients given interventions of autogenic relaxation therapy and dhikr compared to those who are not given interventions of autogenic relaxation therapy and dhikr. This research concurred with the study conducted by Wulandari et al. (2019) that through analysis proved an improvement in the sleeping quality for respondents treated with autogenic relaxation therapy. The results showed that autogenic relaxation therapy effectively improved sleep quality.

This study also supports the research conducted by Hastuti et al. (2019), where the result of analysis showed sleep quality for the respondents undergoing dhikr therapy has increased. The results of the study conducted showed that dhikr therapy is effective in enhancing sleep quality. When a person experiences sleep disturbances, there is tension in the brain and muscles, so by activating the parasympathetic nerves with relaxation techniques, it is easy to enter a sleep state (Fandiani, Wantiyah, & Juliningrum, 2017). According to Payne & Nadel (2018) stress affects cortisol. The greater the disturbance that occurs in the hippocampal and neocortical systems, the more the disorder causes memory to become chaotic, so that the REM sleep phase becomes longer. A long REM phase can cause nightmares, restless sleep, midnight awakenings, and early awakenings. High cortisol also causes the body to become tense, making it difficult to enter the sleep phase. When a person is given autogenic relaxation therapy, a relaxation process will occur that will affect the work of the autonomic nerves. This relaxation causes a positive emotional response and a calming effect, so that physiologically the dominant sympathetic nervous system changes to become the dominant parasympathetic (Ismarina, Herliawati, dan Muharyani, 2015).

Welz (1991) explained that a combination of deep breathing techniques and meditation performed on autogenic relaxation can stimulate NO (nitride oxide) neurotransmitters, which affect smooth muscle work to become more relaxed, and vasodilation of blood vessels, which will result in increased blood supply to organs and be capable of increasing blood flow. Metabolism in cells that produce energy so that the body feels more energized and capable of carrying out an activity.

Relaxation techniques can promote better sleep. Autogenic relaxation assists individuals in consciously diverting their own ordersiduals in consciously diverting their own orders. This relaxation helps fight the harmful effects of stress on the body. The autogenic relaxation technique has the basic idea of learning how to distract the mind based on suggestions so that individuals can get rid of stress responses that disturb the mind (Fitriani & Alsa,

2015). His also happens when a person is given dhikr therapy. By saying Allah's name continuously, slowly, and rhythmically, it will be able to cause a relaxation response of faith in His love, His protection, and His other good qualities, which will create a feeling of calm and security. Dhikr combined with rhythmic sentences can trigger a relaxing effect (Purwanto, 2016).

Autogenic relaxation therapy and dhikr induce calmness that triggers positive emotions, transmitted to the limbic system and cerebral cortex. This process balances neurotransmitter activity between the brainstem, hypothalamus, prefrontal cortex, hippocampus, and amygdala. As a result, the synthesis of GABA, dopamine, serotonin, and norepinephrine is regulated, while the hypothalamus releases acetylcholine and endorphins. This balance also normalizes cortisol levels, boosting both specific and non-specific immune responses. Ultimately, a calm mind enhances immunity and improves sleep quality (Wulandari & Nashori, 2014). The autogenic relaxation therapy and dhikr carried out by the experimental group were felt very comfortable by the respondents, this was evident in the improvement in the quality of sleep in the respondents who experienced a decrease in the value of sleep quality, and there were differences in the value of sleep quality before and after being given the intervention.

From the results there is a significant difference between the average value of sleep quality in the intervention group. So it can be said that autogenic relaxation therapy and dhikr are effective at improving sleep quality in CKD patients undergoing hemodialysis therapy. The sleep quality of CKD patients who were given autogenic relaxation therapy and dhikr was better than the sleep quality of those who were not given autogenic relaxation therapy and dhikr. This is in accordance with the theory of Varvogli & Darviri (2011), that autogenic relaxation can overcome various bodily disorders such as migraines, mild to moderate hypertension, coronary heart disease, bronchial asthma, the stress response to depression, somatization disorders, and functional sleep disorders. The combination of dhikr and breath will create a deeper relaxed state that can lead to deep relaxation so as to reduce sleep disturbances

Research conducted by Sudiyanto and Abdul (2017), said that dhikr therapy performed for 15 minutes before going to bed for 3 consecutive days in March 2017 could improve the sleep quality of hospitalization patients. Research conducted by Kumala, Yogi & Fuad, (2017) showed that the results of the study showed that there was a significant difference in the level of peace of mind before receiving the intervention and after giving the intervention. Respondents who use autogenic relaxation techniques and dhikr will create inner peace. Apart from that, doing autogenic relaxation therapy and dhikr can also help clear the mind because the body's circulation improves, more oxygen flows to the brain, and the body becomes more relaxed, which improves sleep quality.

5. CONCLUSION

The conclusion in this study is that autogenic relaxation therapy and dhikr have a positive effect on the sleep quality of CKD patients undergoing hemodialysis therapy at Fatimah Islamic Hospital, Cilacap, Indonesia.

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