

OVERCOMING SLEEP DISORDERS WITH COMPLEMENTARY THERAPY FOR PATIENTS UNDERGOING HEMODIALYSIS

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ABSTRACT

This study aims to collect relevant information on the effectiveness of complementary therapies in treating sleep disturbances in patients undergoing routine hemodialysis. The method used in this study is a literature study by collecting and reviewing several published articles regarding the role, use, and effect of complementary therapy in patients on routine hemodialysis with sleep disturbance problems. The results showed the effectiveness of complementary therapies such as music therapy, acupuncture, and Benson's relaxation in overcoming sleep disturbances and improving patients' sleep quality. In conclusion, the three complementary therapies can overcome sleep disturbances and improve hemodialysis patients' sleep quality. However, of the three therapies, the authors concluded that Benson's relaxation intervention was an intervention that had better effectiveness than other complementary therapies.

Keywords: Complementary Therapy, Hemodialysis, Sleep Disorders

INTRODUCTION

Chronic kidney failure is a progressive and irreversible disorder of kidney function that reduces the body's ability to maintain metabolism, fluids and electrolytes, this can cause uremia or retention of urea and other nitrogen waste in the blood (Ebrahimi et al., 2022). Patients on Hemodialysis are very vulnerable to various situations that prevent their basic needs from being met properly, the most basic of which is fulfilling activity needs (Wu et al., 2022). According to Waluyo et al., (2022) the basic human needs stated by Virginia Henderson, such as sleep and rest, cannot be fulfilled properly, so there is a need for a process or therapy that is able to fulfill the patient's basic needs.

One of the impacts of patients with Chronic Kidney Disease (CKD) who undergo hemodialysis is disturbed sleep quality caused by several factors, including disease, exercise and fatigue, psychological stress, nutrition and the environment (Prima & Duana, (2022). According to Mustofa et al., (2022) sleep quality is a person's satisfaction with sleep which can be determined by someone who prepares at night, such as the ability to stay asleep, the ease of staying asleep without medical assistance.

Research result Gusyam (2024) stated that the average sleep latency for hemodialysis respondents started sleeping between 31-60 minutes, the average respondent's sleep time was 5-6 hours, while the average sleep efficiency was 65%-74%. Sleep problems that are often complained about by chronic kidney failure patients undergoing hemodialysis therapy are difficulty getting to sleep, difficulty maintaining sleep, difficulty going back to sleep, and complaints about carrying out activities during the day.

Based on research results Jured et al., (2023) showed that almost all CKD patients who underwent HD had poor sleep quality, with a range of 53.8% - 97.5% of respondents. This is due to the feeling of pain and discomfort, anxiety which makes a person insomniac, the habit of consuming coffee because the caffeine in coffee has an effect on increasing energy and alertness, and an unsettled environment which makes CKD patients undergoing HD wake up at night or early in the morning (Wahyuni et al., 2022; Wijaya & Padila, 2019).

Therapies that can be used to improve sleep quality consist of pharmacological and non-pharmacological therapies. Non-pharmacological therapy to treat sleep disorders, namely self-regulation therapy, is carried out to regulate the patient's sleep schedule following the patient's normal circadian sleep rhythm and must be disciplined in managing their sleep schedule. Psychological therapy is aimed at overcoming mental disorders or severe stress which causes sufferers to have difficulty sleeping. Relaxation therapy is carried out with deep breathing relaxation, progressive muscle relaxation, surrender exercises, music therapy and aromatherapy (Esmayanti et al., 2022).

Information regarding a complete review of previous studies related to treating sleep disorders in patients on hemodialysis. First, Esmayanti et al., (2022) with this type of phenomenological research with complementary therapy variables for CKD and Sleep Disorder patients. Second, Radin et al., (2023) type of phenomenological research with complementary therapy variables for CKD patients and basic needs. Third, Rasmianti et al., (2023) type of phenomenological research with complementary therapy variables for CKD patients and sleep disorders. These three articles both discuss complementary therapy for CKD patients undergoing hemodialysis, but the difference lies in the type of research where this research is a literature study and the aim of implementing this therapy, namely for basic needs and sleep disorders, whereas this research only focuses on quality. Sleep.

Based on this, the author attempted to conduct a study or literature review aimed at collecting relevant information regarding the effectiveness of complementary therapies in treating sleep disorders in patients undergoing routine hemodialysis. It is hoped that the results of this review can be a consideration in developing nursing intervention guidelines for routine hemodialysis patients who experience sleep disorders and poor sleep quality.

RESEARCH METHOD

Design and search strategy

This research using design *literature study*. The databases used as literature sources consist of Ebsco-host, Proquest, Science Direct, Scopus, Springer link and Clinical Key Nursing. The keywords used in English are 'Sleep Disorder' OR 'Sleep Disturbance' OR 'Sleep Problem' AND 'Adult' OR 'Young Adult' AND 'Haemodialysis' OR 'Dialysis' AND 'Complementary Therapy' OR 'Alternative Medicine. Immediately after a journal search was carried out on the database, a total of 425 journals were found, then the researcher carried out the first stage of selection by removing 36 journals of the same type. The next process was that the remaining 25 articles were checked for conformity with the inclusion criteria. This process required the researcher to remove 19 articles. After that, a second selection based on the title and abstract at the final stage resulted in 6 journals being included in the review.

Data Extraction

This literature search uses inclusion criteria, namely journal articles with the subject adult patients, English speakers, and published from 2012 until 2022. The exclusion criteria are review articles and articles that are not can be accessed in full-text. The author also uses a hand searching strategy from the reference list of relevant articles. Data extraction was

performed independently by the author through a critical assessment of the article using the Joanna Briggs Institute format (JBI). An explanation of the extraction process is contained in the PRISMA diagram, which aims to describe the literature review procedure (figure 1).

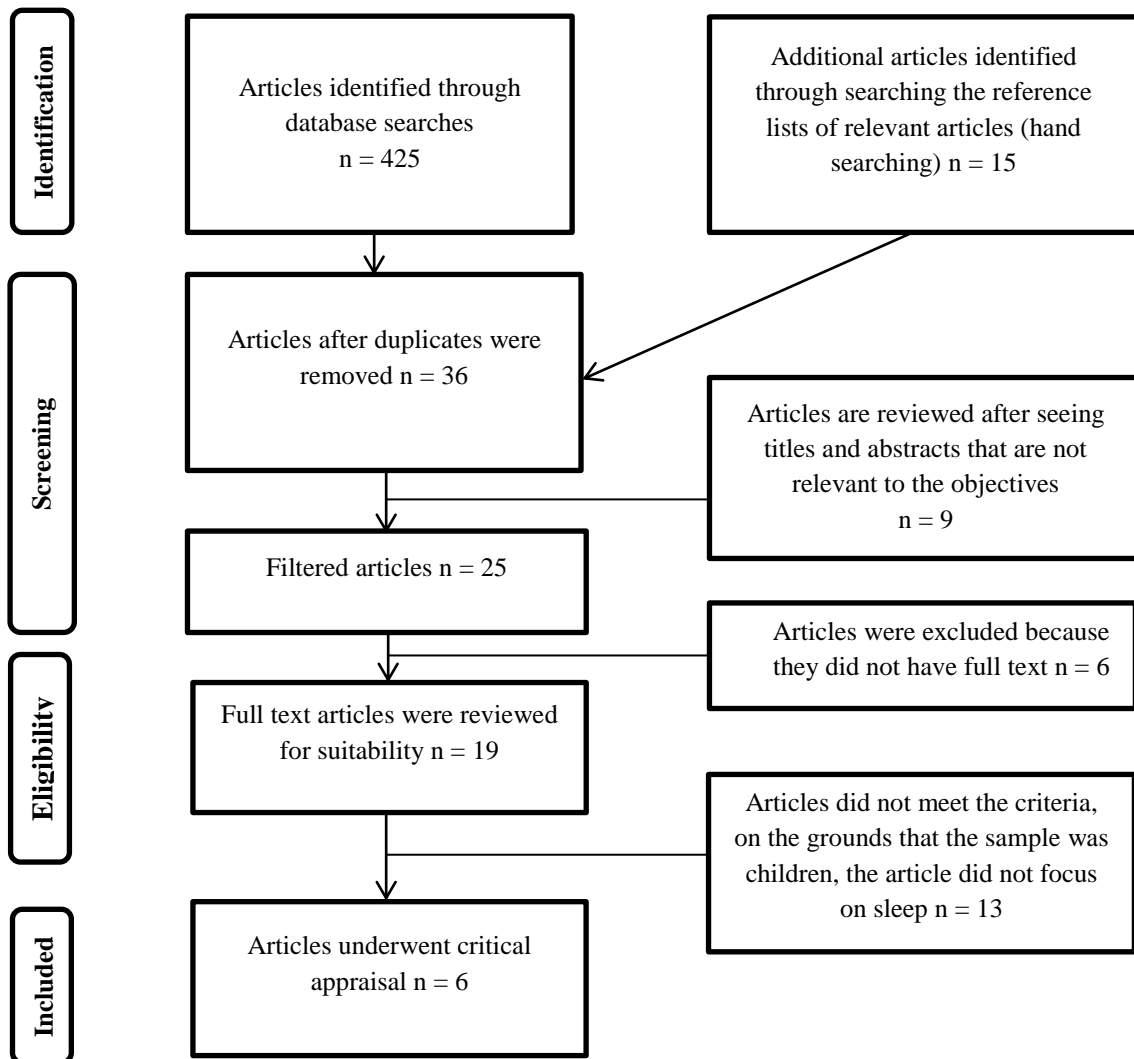


Figure 1. Flow Diagram (PRISMA)

RESEARCH RESULT

Table. 1
Article Review Results

Journal Identity	Research methods	Research result
Arab, Z., Shariati, AR, Asayesh, H., Vakili, M.A., Bahrami-Taghanaki, H., & Azizi, H. (2016). A Sham-Controlled Trial of Acupressure on the Quality of Sleep And Life in Hemodialysis Patients	Randomized Controlled Trial(RCT)	There was a significant difference in sleep quality scores between the group with pure acupressure intervention when compared with the group receiving placebo acupressure intervention (p-value <0.001). There was a significant difference in sleep quality scores between the group that received pure acupressure

		intervention compared to the group that did not receive treatment (p value <0.001).
Shen, K., Cho, Y., Pascoe, E.M., Hawley, C.M., Oliver, V., Hughes, K.M., Baer, R., Frazier, J., Jarvis, E., Tan, K.S., Liu, X., Gobe, G., & Johnson, D. W. (2017). The SIESTA trial: A Randomized Study Investigating the Efficacy, Safety, and Tolerability of Acupressure Versus Sham Therapy for Improving Sleep Quality in Patients With and Stage Kidney Disease on Hemodialysis	<i>Randomized Controlled Trial(RCT)</i>	There was a significant difference in sleep quality scores between the two groups, where in the group that received pure acupressure there was a decrease in sleep quality scores and in the control group it also decreased significantly after being given intervention for 4 weeks. The intervention given to both groups provided significant results (p-value < 0.001). There was also a significant decrease in sleep quality scores in the group that received acupressure compared to the control group.
Rambod, M., PouraliMohammadi, N., Pasyar, N., Rafii, F., & Sharif, F. (2013). The Effect of Benson Relaxation Technique on the Quality of Sleep of Iranian Hemodialysis Patients: A Randomized Trial	<i>Randomized Controlled Trial(RCT)</i>	There was a significant difference in the average change in total sleep quality score between the intervention group who received Benson relaxation and the control group in the eighth week of intervention. There were significant differences, especially in the components of sleep disturbance, daytime dysfunction, subjective sleep quality and use of sleeping medication (p-value <0.005). Global sleep quality scores decreased compared to before the Benson relaxation intervention was given.
Momennasab, M., Ranjbar, M., & Najafi, S.S. (2018). Comparing the Effect of Listening to Music During Hemodialysis and at Bedtime on Sleep Quality of Hemodialysis Patients: a Randomized Clinical Trial	<i>Randomized Controlled Trial(RCT)</i>	There was a significant difference in sleep quality scores before and after intervention in the two intervention groups (p<0.05). There was no significant difference in the average change in sleep quality scores in the control group after 4 weeks (p>0.05). There was a significant difference in the average change in total sleep quality score in the group who listened to music before bed compared to the group who listened to music while dialysis was in progress (p<0.05)
Jespersen, K.V., Otto, M., Kringelbach, M., Van Someren, E., & Vuust, P. (2019). A Randomized Controlled Trial of Bedtime Music for Insomnia Disorder	<i>Randomized Controlled Trial(RCT)</i>	There was a decrease in PSQI scores of 2.2 points in the intervention group who listened to music compared to the group who only listened to audiobooks and the group without treatment. There was a significant difference in the mean change in total score on PSQI in the intervention group who listened to music before bed compared to the group who only listened to audiobooks and the group who did not receive intervention (p<0.05).
Wu, Y., Yang, L., Li, L., Wu, X., Zhong, Z., He, Z., Ma, H., Wang, L., Lu, Z., Cai, C., Zhao, D., Meng, X., Qi, A., Yang, A., Su, G., Guo, X., Liu, X., Zou,	<i>Randomized Controlled Trial(RCT)</i>	There was a change in the total sleep quality score (including the global score and scores of each of the seven sleep quality domains) at the end of treatment and at each follow-up visit in the

C., & Lin, Q. (2018). Auricular Acupressure for Insomnia in Hemodialysis Patients: Study Protocol for a Randomized Controlled Trial	intervention group who received acupressure at point locations corresponding to Traditional Chinese Medicine meridians compared to the control group ($p < 0.05$).
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Based on Table 1 above, it can be seen that from 6 research articles related to Complementary and Alternative Medicine (CAM). The article provides research results related to complementary therapies, namely music therapy, acupressure and Benson relaxation. It is believed that these various types of complementary therapies will have an effect on patients undergoing routine hemodialysis in overcoming sleep disorders so that sleep quality becomes better. Based on the six articles above, complementary therapies such as acupressure, music therapy and Benson relaxation have been proven to be able to overcome sleep disorders experienced by patients. Acupressure therapy requires special training for health workers who will use it. Another complementary therapy is Benson relaxation which is carried out for 8 weeks. Researchers teach Benson relaxation and then provide a Compact Disc (CD) so that patients can play the CD twice a day and do it independently at home. Music therapy is another complementary therapy option based on reviewed articles that is proven to be able to overcome sleep disorders and improve the quality of the patient's sleep.

DISCUSSION

Based on a review of several articles, researchers obtained six articles. The six articles used sleep quality score measurements with the same instrument. Researchers found that complementary therapy can overcome sleep disorders so that it can improve sleep quality from the six articles reviewed. Researchers will discuss various types of complementary therapies, namely Benson relaxation, acupressure and music therapy. These three types of therapy have been proven to be significantly effective in treating sleep disorders and improving sleep quality.

Benson Relaxation to Treat Sleep Disorders in Patients on Hemodialysis

The Benson relaxation technique is one of the relaxation techniques that is recommended for people who experience a decrease in sleep quality. The Benson relaxation technique is one option to improve sleep quality because the Benson relaxation technique is easy to do, and does not require costs or side effects (Kemohu & Mukin, 2023).

This is supported by research results Apriandari et al., (2024) the application of Benson relaxation and lavender aromatherapy has been proven to help overcome poor sleep quality, where before application the sleep quality of CKD patients was in the poor category and after application it was in the good category. This can happen because Benson's relaxation creates a feeling of comfort and relaxation. The feeling of relaxation will be transmitted to the hypothalamus to produce Corticotropin Relaxing Factor (CRF). CRF will stimulate the glands under the brain to increase the production of Proopiomelanocortin (POMC) so that enkephalin production by the adrenal medulla increases (Wahyuni et al., 2022).

According to Agustina & Septiawan (2022) if a person is suffering, there is an addiction in the brain that activates the parasympathetic nervous system using relaxation techniques so that the dependency can automatically disappear, making it easier for them to fall into a more comfortable sleeping condition. Therefore, the method that can be used to treat sleep quality disorders is by using the Benson relaxation technique. Benson has introduced a type of relaxation therapy, namely a therapy to relieve pain and insomnia.

The results of this application are in accordance with the theory which explains that efforts can be made to overcome the problem of poor sleep quality by using Benson relaxation therapy, which is a technique that combines deep breathing relaxation and philosophical or religious belief factors held by a person. Relaxation techniques can inhibit the sympathetic nervous system and increase the work of the parasympathetic nervous system, thereby creating calm (Mustofa et al., 2022).

Acupressure Relaxation to Treat Sleep Disorders in Patients on Hemodialysis

Massage therapy is one of the most popular complementary and alternative therapies used in nursing and is easy to implement, safe, noninvasive and relatively cheap (Ariyani et al., 2022). Providing massage therapy is important to increase comfort, compliance in undergoing therapy and improve the quality of life for CKD patients undergoing HD. One non-pharmacological therapy or called Complementary and Alternative Medicine (CAM) that can overcome this problem is massage therapy or massage therapy as a more efficient and effective supporting therapy for CKD patients undergoing hemodialysis (Pratiwi et al., 2023).

Massage is effective in improving sleep quality. Massage therapy is thought to produce a therapeutic effect and to reduce levels of cortisol, norepinephrine, and epinephrine by stimulating the nervous system, thereby improving the patient's sleep quality. But foot massage is more effective because systematic and rhythmic massage of the lower legs will reduce muscle tension, creating a relaxed atmosphere which can ultimately improve the patient's sleep quality (Kalantar-Zadeh et al., 2022).

As research results Robby et al., (2022) Foot massage is effectively used in nursing care as an effort to provide a deep relaxation effect, reduce anxiety, reduce pain, physical discomfort, and improve sleep quality. According to Soniawati & Ulfah (2023) foot massage can provide a deep relaxing effect, reduce anxiety, reduce pain and physical discomfort and improve sleep quality.

Music Therapy to Treat Sleep Disorders in Patients on Hemodialysis

Music can also reduce sympathetic nervous system activity as well as anxiety, heart rate, respiratory rate, and blood pressure which contributes to improved sleep quality. The use of music therapy is determined by musical interventions with the aim of restoring, relaxing, maintaining, improving emotional, physical, psychological and health and well-being (Rasmianti et al., 2023). Based on research results Lestari (2023) which states that instrumental music therapy is effective for use in chronic kidney failure patients who are undergoing hemodialysis, in accordance with the theory that instrumental music therapy is a non-pharmacological management of chronic kidney failure patients.

Putri & Hisni (2023) believes that music is a way of treating disease (treatment) using tones or sounds using all musical instruments. The working mechanism of instrumental music to relax stimuli or elements and tones entering the auditory canal is sent to the thalamus so that memory from the active limbic system automatically influences the autonomic nerves which are conveyed to the thalamus and pituitary gland and an emotional response appears through feedback to the adrenal glands to suppress production. stress hormones so that a person relaxes and improves sleep quality.

The use of instrumental music therapy to reduce a person's level of insomnia is to reduce the risk of using pharmacotherapy whose side effects are very negative. According to an expert from a sleep disorders center in America, music therapy, given 30 minutes to an hour every day before bedtime, is effective in reducing sleep disorders (Tan et al., 2022).

Music has a helpful effect on calming the brain and regulating blood circulation. Music can reduce sympathetic nervous system activity as well as anxiety, heart rate, respiratory rate, and blood pressure which contributes to improved sleep quality (Hartweg & Mercalfe, 2022). Wirdah et al., (2023) adding the working mechanism of instrumental music to relax the stimuli or elements and tones that enter the auditory canal and are sent to the thalamus so that memory from the active limbic system automatically influences the autonomic nerves which are conveyed to the thalamus and pituitary gland and an emotional response appears through feedback to the adrenal glands to suppress the release of stress hormones so that a person becomes relaxed.

CONCLUSION

These three complementary therapies have proven effective in treating sleep disorders and improving sleep quality. However, of the three complementary therapies, the author concludes that Benson relaxation has the potential to be the most effective and easy to do compared to other therapies, does not require costs and can be done at any time.

SUGGESTION

It is hoped that there will be other research regarding complementary therapies both in terms of a more representative sample size and different types of interventions, for example providing a combination of progressive muscle relaxation with autogenic relaxation or providing hypnosis relaxation. There is great hope that complementary therapy can be a non-pharmacological therapy option in treating sleep disorders and improving the sleep quality of patients undergoing routine hemodialysis.

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