

## The Effectiveness of Benson's Relaxation Therapy on Sleep Quality in Hemodialysis Patient: A Narrative Literature Review

Usa Sunairattanaporn<sup>1</sup>, Pilaiwan Phuchum<sup>2</sup>, Irma Darmawati<sup>3</sup>

<sup>1</sup>Hemodialysis Unit Chollada Hospital, Nonthaburi, Thailand

<sup>2</sup>Hemodialysis Center Laksi, Chaeng Watthana District, Bangkok, Thailand

<sup>3</sup>Nursing Program Study, Universitas Pendidikan Indonesia, Indonesia

\*Corresponding email: irmadarmawati@upi.edu

### ARTICLE INFO

#### How to cite:

Sunairattanaporn, U., Phuchum, P., & Darmawati, I. (2022). The Effectiveness of Benson's Relaxation Therapy on Sleep Quality in Hemodialysis Patient: A Narrative Literature Review. *Jurnal Pendidikan Keperawatan Indonesia*, 8(1), p. 48-54

#### DOI:

10.17509/jpki.v8i1.47552

#### Article History:

##### Received:

June 20, 2022

##### Revised:

June 29, 2022

##### Accepted:

June 30, 2022

##### Published:

June 30, 2022

### ABSTRACT

**Introduction:** Patients on hemodialysis who have poor sleep quality suffer negative effects on their overall health and quality of life. Benson relaxation is a cost-effective therapy and an easy-to-do method for treating sleep disorders in hemodialysis patients. **Objective:** This narrative literature review aims to determine the efficacy of Benson's relaxation therapy on hemodialysis patients' sleep quality. **Method:** Searching databased conducted through PubMed, Science Direct, ProQuest, SAGE Journal, and EBSCO Host. Selection of published articles with a range of 2012-2022, free full text, randomized controlled trials, quasi-experiment, and published in the English language. A total of 441 articles were obtained, and 5 articles met the criteria included in this narrative literature review. An assessment is carried out using Prisma Procedure and the JBI format as critical appraisal tools to assist in assessing the trustworthiness, relevance, and results of published papers. **Result:** The results of this review showed that Benson's relaxation therapy works to help hemodialysis patients sleep better in four articles. This improvement is especially in sleep disturbance, daytime dysfunction, the use of sleep medication, and subjective sleep quality. **Discussion:** Benson's relaxation therapy combines deep breathing relaxation with the holding of certain beliefs; this can produce an optimal relaxation response, not only in the body but also in the mind. This relaxation response is necessary for entering the alpha wave, which is necessary for entering the first stage of sleep, and it will help patients have better quality sleep.

**Keywords:** Benson's Relaxation Therapy, Hemodialysis, Sleep Quality

### ABSTRAK (BAHASA)

**Pendahuluan:** Kualitas tidur yang buruk mempengaruhi status kesehatan dan kualitas hidup pasien hemodialisis. Relaksasi Benson adalah terapi hemat biaya dan metode yang mudah digunakan untuk mengobati gangguan tidur pada pasien hemodialisis. **Tujuan:** Literatur review naratif ini bertujuan untuk mengetahui efektivitas terapi relaksasi Benson terhadap kualitas tidur pada pasien hemodialisis. **Metode:** Pencarian database dilakukan melalui PubMed, Science Direct, ProQuest, SAGE Journal, dan EBSCO Host. Kriteria inklusi artikel yang diterbitkan dengan rentang tahun 2012-2022, teks lengkap gratis, penelitian randomized controlled trials, kuasi eksperimen, dan diterbitkan dalam bahasa Inggris. Didapatkan sejumlah 441 artikel, dan 5 artikel yang memenuhi kriteria dikaji dalam literatur review naratif ini. Penilaian dilakukan dengan menggunakan Prosedur Prisma dan format JBI sebagai alat penilaian kritis untuk membantu menilai keterpercayaan, relevansi, dan hasil makalah yang diterbitkan. **Hasil:** Hasil review ini menunjukkan bahwa terapi relaksasi Benson bekerja membantu pasien hemodialisis tidur lebih nyenyak dalam empat artikel. Peningkatan ini terutama

*pada gangguan tidur, disfungsi siang hari, penggunaan obat tidur, dan kualitas tidur subjektif. Diskusi: Terapi relaksasi Benson menggabungkan relaksasi nafas dalam dengan keyakinan yang dianut, hal ini dapat menghasilkan respon relaksasi yang optimal, tidak hanya fisik tetapi juga mental. Respon relaksasi ini diperlukan untuk memasuki gelombang alfa untuk memasuki tahap pertama tidur dan akan membantu kualitas tidur pada pasien.*

**Kata Kunci:** Hemodialisis, Kualitas Tidur, Terapi Relaksasi Benson

## INTRODUCTION

Sleep disorders are common in chronic disease patients. Sleep disorders are common in patients with end-stage renal disease (ESRD) (Harris et al., 2012). It has been reported that 80 percent of ESRD with hemodialysis patients have sleep complaints, with daytime sleepiness being the most commonly reported symptom. Other sleep disorders in hemodialysis patients include sleep apnea, insomnia, and excessive daytime sleepiness (Maung et al., 2016). Patients with ESRD had short, fragmented sleep, with total sleep times ranged from 260 to 360 minutes. Sleep efficiencies ranged from 66% to 85%, and time spent awake ranged from 77-135 minutes. Sleep latencies ranged from 10 to 30 minutes, while REM latencies ranged from 92 to 64 minutes (Harris et al., 2012). Patients who have CKD frequently demonstrate sympatho-vagal imbalance as a result of baroreceptor reflex function impairment. This imbalance is characterized by increased activity in the sympathetic nervous system and decreased tone in the vagus nerve (Maung et al., 2016; Mirghaed et al., 2019).

Insomnia is defined as the inability to fall asleep, and it is associated with poor sleep quality and low quality of life (Maung et al., 2016). Because of the increased physical stress caused by their condition, ESRD patients have a greater likelihood of suffering from insomnia than the general population. Patients undergoing dialysis frequently deal with persistent pain, which is one of the primary factors contributing to insomnia in this patient population. In ESRD patients, sleep problems are associated not only with a lower quality of life, but also with increased health risks and mortality (Hildreth, 2012). Relaxation therapy is one of the methods for reducing insomnia, it can be an effective adjunctive therapy (Chen et al.,

2011). Research from Rambod et al., (2013) found that Benson's relaxation therapy with listening to the audiotape for 20 minutes twice a day for eight weeks was effective to improve sleep quality, reducing the score of Pittsburgh Sleep Quality Index (PSQI).

One of the nursing interventions is Benson's Relaxation. Herbert Benson's relaxation method, introduced in 1970, is more widely used because of its ease of learning and training (Benson, 2019; Far et al., 2020). Benson relaxation combines relaxation techniques with a belief factor. This therapy has been widely used to reduce tension and achieve calm conditions such as pain relief, stress relief, anxiety relief, insomnia, blood pressure reduction, and depression. By repeating ritual sentences and eliminating distracting thoughts, this technique attempts to focus attention on a specific concentration. This relaxation technique can be done twice a day for 10 to 20 minutes (Rambod et al., 2013). The benefits of this relaxation technique include its low cost and ease of use in treating sleep disorders in hemodialysis patients (Darmawati et al., 2021; Rambod et al., 2013).

Benson's relaxation therapy refers to the process of developing an approach to relaxation that is centered on Benson's faith factor. The Benson relaxation technique is a method that combines traditional relaxation techniques with an element of belief. This therapy has seen widespread application in the reduction of stress and the achievement of calm conditions, including the alleviation of insomnia, pain, stress, anxiety, and depression, as well as lowering blood pressure (Habibollahpour et al., 2019). There are no literature reviews related to the effect of Benson's relaxation therapy on sleep quality in a hemodialysis patient. Based on VOSviewer, a software tool for constructing and visualizing

bibliometric networks (Orduña-Malea & Costas, 2021), this topic has not been discussed much, but this study is closely related to and important to hemodialysis patients. This study aims to conduct a narrative review of the effectiveness of Benson's relaxation therapy on sleep quality in hemodialysis patients.

## METHODS

### Eligibility Criteria

This study is a narrative literature review that discusses the effectiveness of Benson therapy on the quality of sleep of patients on hemodialysis. Determination of topics is determined using VOSviewer to find important topics related to hemodialysis patients that have not been widely studied in articles around the world but are very important to improve the quality of care for patients. The inclusion criteria applied to this review include: (1) Research type RCT, Quasi-experimental, (2) Published in 2012-2022, (3) Free Full text, (4) Publish in the English language (5) The outcome of the articles selected in this study are the effectiveness of Benson's relaxation therapy on sleep quality in hemodialysis patients.

### Information Sources

Searching databased conducted through PubMed, Science Direct, ProQuest, SAGE Journal, and EBSCO Host.

### Searching Strategy

The keywords used in the search on this electronic database used the following terminology: benson's relaxation AND hemodialysis AND sleep quality OR insomnia. Limited to articles published in the English language.

### Article Screening

The screening article and strategy in this narrative review used the protocol and recommendations from the Preferred Reporting Item for Systematic Reviews and Meta-Analysis (PRISMA). The results of a literature search through five databases and using keywords using

the Boolean operator, the researcher found 441 articles that match these keywords consisting of 58 articles (Science Direct), 30 articles (ProQuest), 77 articles (EBSCO Host), 5 articles (PubMed), and 271 articles (SAGE Journal). Five articles that met the criteria are discussed in this narrative review. The process of selecting articles to study using the PRISMA methodology is illustrated in Figure 1.

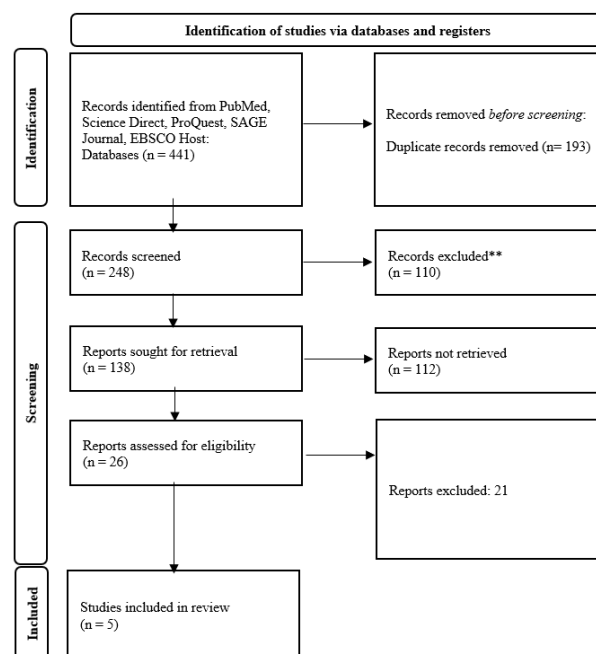


Figure 1. PRISMA flow chart

### Data Extraction and Critical Appraisal

Three different reviewers, working independently from one another, assigned a code to each source, and then extracted the necessary information using the same standard form and quality of study assessed by JBI. Any points of contention regarding the study were resolved through group discussion. After the authors screened the articles using the title, the topic of the literature review, the abstract, and the full text, they were left with 24 articles. There were a total of five articles after the eligibility criteria were evaluated. Data extraction yielded the following variables: authors' names, study and publication year, intervention method, and study results. Every item was included in the data extraction table.

The assessment of the quality of the study used JBI (Joanna Briggs Institute) critical appraisal checklist for randomized controlled trial and quasi-experimental studies, assessment criteria were given a score of 'yes', 'no', 'unclear' or 'not applicable'(Munn et al., 2020). The JBI critical appraisal checklist for quasi-experimental studies consists of nine-question options, while the JBI critical appraisal checklist for randomized controlled trials consists of thirteen questions. All

studies presented clearly and answered yes to each component of the question on the JBI questionnaire for RCT and quasi-experimental.

## RESULTS

Table1 provides an overview of the characteristics studies included in this narrative review. The five articles that were chosen for this research were used to compile a table.

**Table 1. Description of Studies Included in the Narrative Review**

No	Author/Years	Study Design	Methods	Results
1	(Rambod et al., 2013) Complementary Therapies in Medicine, 21(6), 577–584	RCT	An RCT with a pre-post-test design was conducted. Block randomization assigned 83 hemodialysis patients referred to hemodialysis units to either the intervention or the control group. Patients in the intervention group listened to BRT technique audiotape twice daily for twenty minutes for eight weeks. The Control group received routine care and treatment. The Pittsburgh Sleep Quality Index (PSQI) was utilized to evaluate the level of sleep quality.	After the 8th week of the intervention, the results of the ANCOVA showed that there were significant differences between the two groups in terms of the scores of the PSQI subscales, such as sleep disturbance, daytime dysfunction, the use of sleep medication, and subjective sleep quality, as well as its global scores (p 0.05).
2	(Purba et al., 2020) Indian Journal of Public Health Research & Development, 11(1)	Quasi-Experimental	The study compared Benson's relaxation therapy and progressive muscle relaxation in a quasi-experimental design. The samples were selected using a technique of consecutive sampling based on inclusion criteria. The sample consisted of 96 respondents, 48 for each group. PSQI was utilized to evaluate the level of sleep quality.	There was an effect both of muscle relaxation and Benson's relaxation on the sleep quality of hemodialysis patients (p 0.00).
3	(Sulistyaningsih & Melastuti, 2016) Indonesian Nursing Journal Of Education And Clinic (INJEC), 1(1), 61–65.	Quasi-Experimental	This study used a quasi-experimental design consisting of a pre-test and a post-test with a control group. In this study, there were a total of 42 hemodialysis patients as respondents. Patients in the experimental group received treatment with Benson's relaxation techniques during their hemodialysis sessions for a period of four weeks. Patients in the control groups received treatment in accordance with standard protocol. The quality of sleep was measured using the Insomnia Severity Index	The findings of the Chi-square test suggested that Benson's technique for achieving a state of relaxation was effective in reducing the amount of insomnia experienced by patients with chronic kidney disease who are receiving hemodialysis (p = 0.002)
4	(Elsayed et al., 2019) International Journal of Nursing Didactics, 9(02), 23–31.	Quasi-Experimental	A quasi-experimental study with a pre-post-test design was conducted. The sample consisted of 92 elderly patients which scheduled for hemodialysis. PSQI was utilized to evaluate the level of sleep quality.	There was an effect of Benson's relaxation on the sleep quality of hemodialysis patients (p 0.001).
5	(Dunn Dnp, 2018) ProQuest Dissertations Publishing, 2018. 10816497.	Quasi-Experimental	Twenty-four hemodialysis patients were recruited from a hemodialysis center and randomly assigned to receive either Benson's relaxation response or standard care in a quasi-experimental design. The experimental group of patients was instructed to perform the breathing technique at home and their compliance was monitored. PSQI was utilized to evaluate the level of sleep quality.	There was no significant effect of Benson's relaxation on the sleep quality of hemodialysis patients (p> 0.005).

## DISCUSSIONS

There are five articles discussed in this narrative review (Elsayed et al., 2019; Far et al., 2020; Purba et al., 2020; Rambod et al., 2013; Sulistyarningsih & Melastuti, 2016). From 2012 to 2022, there are four quasi-experimental studies and one RCT study. According to four out of five articles, the application of Benson's relaxation therapy (BRT) states that there were significant results ( $p < 0.05$ ) in increasing sleep quality in hemodialysis patients (HD patients). Sleep quality was assessed using the Pittsburgh Sleep Quality Index and the Insomnia Severity Index. The implementation time of the intervention varied in each study with a period of 4-8 weeks with a duration of 20 minutes and was carried out 2 times a day.

The intervention was initiated while the HD patients were lying supine in their beds. The BRT instruction for each patient lasted twenty minutes. It required the patients to : (1) they should find a position that is comfortable for them, (2) they should close their eyes, (3) they should relax all of their muscles beginning from the soles of their feet, moving forward up, and they should relax all parts of their body, (4) they should breathe in and out through their nose while paying attention to the sound of their breathing, and say the word "one" quietly when the breath was out, for example: in...out, 'one'; in...out, 'one'; in...out In the study by Rambod et al., (2013), patients who were assigned to the intervention group were presented with a relaxation techniques CD that was intended to assist them in learning the techniques and implementing them at home. They were given the CD and given the instruction to practice at home while also listening to the CD twice a day for a period of eight weeks (Rambod et al., 2013).

Of the five articles reviewed in this review, one study from Dunn Dnp (2018) stated that there were no significant results from the implementation of BRT on sleep quality, this was because the number of samples taken was too small ( $n=24$ ) and it was recommended to use the number of samples taken. a larger sample to examine the general significance of BRT on sleep quality in

hemodialysis patients. In the other four articles, the number of samples is greater than 42-96 samples involved in the study. This affects the reliability of the results and the value of statistical significance. However, in actual fact, changes in PSQI values in all studies were seen significantly, and there was a significant change in sleep quality after BRT was performed.

BRT is used to treat sleep problems in HD patients. Toxin concentrations (creatinine and urea), anemia, nocturnal hypoxia, and comorbidities are all possible causes of sleep disorders in HD patients (Rambod et al., 2013). In addition, feelings of anxiety, worry, sadness, or a previous history of depression are significant factors that are associated with sleep disorders in patients who have end-stage renal disease (ESRD). Poor sleep in HD patients has a negative impact on both the physical and mental aspects of their lives, resulting in decreased performance as well as cognitive and memory dysfunction (Hamzi et al., 2017). BRT can produce trophotropic relaxation responses, in which the relaxation response terminates the sympathetic nervous system activation pathway and activates the parasympathetic nervous system response. The activation of the parasympathetic nervous system will influence the hypothalamus by inducing a desire for rest and physical repair (Purba et al., 2020).

This hypothesis is supported by the observation that the human nervous system is composed of two distinct subsystems: the autonomic nervous system and the central nervous system. The function of the central nervous system is to regulate the movements that are desired, whereas the autonomic nervous system has two functions that are diametrically opposed to one another (Benson, 2019; Rambod et al., 2014). These functions are the sympathetic nerve function, which increases organ activity, and the parasympathetic nervous system, which decreases organ activity. The central nervous system is responsible for regulating the movements that are desired. (Darmawati et al., 2021; Rambod et al., 2013). As a result of the stimulation of the

sympathetic nerves that occurs under conditions of tension or stress in humans, there is an increase in the activity level of the organs within the body. On the other hand, BRT causes a relaxation response, which interrupts the activation pathway of the sympathetic nervous system and activates the response of the parasympathetic nerves. This leads to a reduction in the activity level of the body's organs. This condition has the effect of hastening the onset of the alpha wave, which is an absolute necessity for moving into the early sleep phase (Far et al., 2020; Rambod et al., 2013).

The findings of this narrative review have the potential to have an effect on the quality of sleep that is promoted among ESRD patients who receive hemodialysis. Our findings can assist them in evaluating the benefits of BRT as a cost-effective therapy, an easy-to-do, safe, and effective strategy in improving sleep quality, particularly in the areas of sleep disturbance, daytime dysfunction, and the use of sleep medication, and subjective sleep quality. Nurses play a crucial role in assisting patients to meet their comfort and sleep needs. To improve sleep quality, nurses can provide direct care and collaborate with other healthcare professionals (Kumala et al., 2021). In addition, nurses can provide BRT to HD patients during the process of hemodialysis to improve the level of patient comfort experienced throughout the treatment process.

## CONCLUSION

Benson's relaxation therapy is effective in managing sleep disturbances in patients on hemodialysis. Improved sleep quality can be seen from the achievement of indicators of sleep disturbance, daytime dysfunction, the use of sleep medication, and subjective sleep quality. This therapy can be applied as evidence-based practice in providing nursing care to improve sleep quality in patients with hemodialysis.

## ACKNOWLEDGEMENT

The authors would like to express their gratitude to their colleagues for their contributions and assistance throughout the research process.

## REFERENCES

- Benson, H. (2019). *The mind body effect*. Simon and Schuster.
- Chen, H.-Y., Cheng, I.-C., Pan, Y.-J., Chiu, Y.-L., Hsu, S.-P., Pai, M.-F., Yang, J.-Y., Peng, Y.-S., Tsai, T.-J., & Wu, K.-D. (2011). Cognitive-behavioral therapy for sleep disturbance decreases inflammatory cytokines and oxidative stress in hemodialysis patients. *Kidney International*, 80(4), 415–422.
- Darmawati, I., Dharmansyah, D., Noviyanti, R., & Rohaedi, S. (2021). Implementing Benson's Relaxation Therapy to Decrease Depression in Elderly. In *Malaysian Journal of Medicine and Health Sciences* (Vol. 17, Issue SUPP14).
- Dunn Dnp, M. J. (2018). *The Effect of Benson's Relaxation Response on Perception of Sleep and Quality of Life in Patients on Hemodialysis; A Pilot Study*.
- Elsayed, E. B. M., Radwan, E. H. M., Elashri, N. I. E. A., & El-Gilany, A.-H. (2019). The effect of Benson's relaxation technique on anxiety, depression and sleep quality of elderly patients undergoing hemodialysis. *International Journal of Nursing Didactics*, 9(02), 23–31.
- Far, N. H., Salari, M., Rakhshani, M. H., Borzoe, F., & Sahebkar, M. (2020). The effects of Benson relaxation technique on activities of daily living in hemodialysis patients; A single-blind, randomized, parallel-group, controlled trial study. *Complementary Therapies in Clinical Practice*, 39, 101133.
- Habibollahpour, M., Ranjkesh, F., Motalebi, S. A., & Mohammadi, F. (2019). The Impact of Benson's Relaxation Technique on the Quality of Sleep in the Elderly. *Topics in Geriatric Rehabilitation*, 35(1), 88–94.
- Hamzi, M. A., Hassani, K., Asseraji, M., & el Kabbaj, D. (2017). Insomnia in hemodialysis patients: a multicenter study from Morocco. *Saudi Journal of Kidney Diseases and Transplantation*, 28(5), 1112.
- Harris, T. J., Nazir, R., Khetpal, P., Peterson, R. A., Chava, P., Patel, S. S., & Kimmel, P. L.

- (2012). Pain, sleep disturbance and survival in hemodialysis patients. *Nephrology Dialysis Transplantation*, 27(2), 758–765.
- Hildreth, C. M. (2012). Prognostic indicators of cardiovascular risk in renal disease. *Frontiers in Physiology*, 2, 121.
- Kumala, T. F., Lindayani, L., Darmawati, I., & Safarina, L. (2021). The effect of progressive muscle relaxation on reducing restless legs syndrome among patients undergoing haemodialysis in a satellite/hospital unit in Indonesia. *Enfermería Nefrológica*, 24(4), 409–415.
- Maung, S. C., el Sara, A., Chapman, C., Cohen, D., & Cukor, D. (2016). Sleep disorders and chronic kidney disease. *World Journal of Nephrology*, 5(3), 224.
- Mirghaed, M. T., Sepehrian, R., Rakhshan, A., & Gorji, H. (2019). Sleep quality in Iranian hemodialysis patients: a systematic review and meta-analysis. *Iranian Journal of Nursing and Midwifery Research*, 24(6), 403.
- Munn, Z., Barker, T. H., Moola, S., Tufanaru, C., Stern, C., McArthur, A., Stephenson, M., & Aromataris, E. (2020). Methodological quality of case series studies: an introduction to the JBI critical appraisal tool. *JBI Evidence Synthesis*, 18(10), 2127–2133.
- Orduña-Malea, E., & Costas, R. (2021). Link-based approach to study scientific software usage: The case of VOSviewer. *Scientometrics*, 126(9), 8153–8186.
- Purba, T. U. P., Dharmajaya, R., & Siregar, C. T. (2020). The Effectiveness of Progressive Muscle Relaxation with Benson Relaxation on the Sleep Quality in Hemodialysis Patients. *Indian Journal of Public Health Research & Development*, 11(1), 1392–1396.
- Rambod, M., Pourali-Mohammadi, N., Pasyar, N., Rafii, F., & Sharif, F. (2013). The effect of Benson's relaxation technique on the quality of sleep of Iranian hemodialysis patients: A randomized trial. *Complementary Therapies in Medicine*, 21(6), 577–584. <https://doi.org/10.1016/j.ctim.2013.08.009>.
- Rambod, M., Sharif, F., Pourali-Mohammadi, N., Pasyar, N., & Rafii, F. (2014). Evaluation of the effect of Benson's relaxation technique on pain and quality of life of haemodialysis patients: A randomized controlled trial. *International Journal of Nursing Studies*, 51(7), 964–973. <https://doi.org/10.1016/j.ijnurstu.2013.11.004>.
- Sulistyaningsih, D. R., & Melastuti, E. (2016). The Effectiveness of Benson's Relaxation Therapy to Decrease The Level of Insomnia on Chronic Kidney Disease Patients Undergoing Hemodialysis. *Indonesian Nursing Journal Of Education And Clinic (INJEC)*, 1(1), 61–65.