

EFFECTIVENESS OF BENSON'S RELAXATION TECHNIQUES ON ANXIETY, SLEEP QUALITY AND FATIGUE IN HEMODIALYSIS PATIENTS: A SCOPING REVIEW

Dedi Krismiadi^{1,2}, Titin Andri Wihastuti¹, Dina Dewi Sartika Lestari Ismail¹,
Ratih Arum Vatmasari¹, Aditayani Nugraha Pertiwi³, Erman Erman⁴,
Lenny Nurhandayani⁵, Ni Made Dwi Astarina Prajayanti⁶,
Cornelia Fransiska Sandehang⁷ and Nofita Dewi Kok Mesa⁸

¹Department of Nursing, Faculty of Health Sciences, Universitas Brawijaya, Malang, Indonesia; ²Nursing Study Program, Mandala Waluya University, Kendari, Southeast Sulawesi, Indonesia; ³Politeknik Medica Farma Husada Mataram, Mataram City - Nusa Tenggara Barat, Indonesia; ⁴Bahteramas Regional General Hospital, Kendari, Southeast Sulawesi, Indonesia; ⁵Nursing Program Timika, Polytechnic of Health Ministry of Health Jayapura, Indonesia; ⁶Ganesha University of Education, Bali, Indonesia; ⁷Faculty of Nursing, De La Salle Catholic University, Manado, North Sulawesi, Indonesia; ⁸Nurse Professional Education Program, Stikes Jayapura, Papua, Indonesia

Abstract. Patients with chronic kidney failure who undergo hemodialysis encounter a variety of complications, including psychological stress. Anxiety and sleep disturbances might result from psychological stress. Hemodialysis patients are extremely concerned about the course of their disease, resulting in insomnia and weariness. Therefore, the nurse must provide the patient with psychological support. Benson's relaxation therapy is one of the relaxing strategies that hemodialysis patients can utilize. Benson's relaxation combines deep breathing with a spiritual component, which the patient believes will induce relaxation. The goal of this article was to assess the effectiveness of the Benson's relaxation technique in lowering anxiety, improving sleep quality, and decreasing fatigue in hemodialysis patients. Three databases were utilized in literature search, Google Scholar, ProQuest, and Science Direct, based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Inclusion and exclusion criteria were determined using the Population, Intervention, Comparison, Study design (PICOS) method. Inclusion criteria included articles about chronic kidney failure patients undergoing hemodialysis who

experienced problems with anxiety, sleep quality and fatigue, published in English or Indonesian between 2013-2022 while exclusion criteria were Weblog, opinion/discussion, dissertation, paid articles, inappropriate articles. Twelve publications were assessed about Benson's relaxation technique's effectiveness on tension, excellent sleep, and exhaustion. It demonstrates that Benson's relaxation technique is beneficial for hemodialysis patients in decreasing anxiety, enhancing sleep quality, and reducing fatigue. It can be extrapolated that Benson's relaxation technique can reduce the patient's anxiety, sleeplessness, and fatigue to enhance their quality of life.

Keywords: Benson's relaxation technique, anxiety, sleep quality, fatigue, hemodialysis

Correspondence: Dedi Krismiadi, Jalan Jendral AH Nasution Number G-37, Kendari, Southeast Sulawesi 93232, Indonesia
Tel: +62 5222259536 E-mail: dedikrismiadi@student.ub.ac.id

INTRODUCTION

Chronic kidney disease is the occurrence of damage to the structure or function of the kidneys for more than three months, resulting in the inability of the body to eliminate toxins from the blood. Chronic kidney failure is a very serious condition that can begin with moderate symptoms, thereby making it difficult to diagnose in its earliest stages, but is progressive and irreversible (Damayanti *et al*, 2021) The high prevalence of patients with kidney failure requires major attention and health priorities (Suwabe *et al*, 2018). Chronic kidney failure has a high prevalence and is currently a serious public health concern, affecting approximately 11-13% of the general population (Chen *et al*, 2016).

Globally, kidney failure has increased and is the 5th most common cause of loss of life globally in 2040 (Kovesdy, 2022). Indonesia is one countries with high rates of chronic kidney disease which is quite high (Muzaenah and Makiyah, 2018).

Basic health research data in year 2018 reports prevalence of 713,783 cases of chronic renal failure in Indonesia (Ministry of Health of the Republic of Indonesia, 2019).

According to the Indonesian Renal Registry (IRR, 2017), in 2015, 30,554 patients with chronic renal failure received active dialysis.

Patients with chronic kidney failure who undergo hemodialysis will experience numerous obstacles, such as psychological stress. Anxiety and sleeplessness are potential signs of psychological stress (Al Aziz and Sudiro, 2017). Hemodialysis patients frequently worry about the course of their disease, causing sleep disturbances that result in weariness and activity difficulties (Winoto *et al*, 2020). It was discovered that 45 percent of hemodialysis patients experienced worry, 56.9 percent of hemodialysis patients suffered from sleep disruptions, and 78 to 83 percent of hemodialysis patients reported exhaustion (Prastiwi *et al*, 2022; Semaan *et al*, 2018). Hemodialysis patients must undergo therapy for overcoming anxiety, sleep problems, and exhaustion to improve their quality of life (Khosravani *et al*, 2017).

Benson's relaxation technique, developed by Herbert Benson in 1974 (Benson *et al*, 1974), is one of the therapies that can be managed to hemodialysis patients. Benson's relaxation is a breathing method that is linked with a patient's confidence in the form of words that can explain what he is experiencing (Faruq *et al*, 2020; Bagheri *et al*, 2021). Non-pharmacological management is important for hemodialysis patients. Relaxation is a highly effective nursing intervention that has been introduced as a non-pharmacological method useful in reducing stress due to its effect on anxiety, depression, improving sleep quality and physical condition (Meawad Elsayed *et al*, 2019). Benson's relaxation technique is recognized as one of the full relaxation techniques for all muscles; it is a well-known relaxation technique that regulates the hypothalamus, reduces sympathetic and parasympathetic impulses, and

improves respiratory function, pulse rate, and cardiac work bench (Bagheri *et al*, 2021).

The patient's confidence might establish an internal environment and help him or her attain a higher level of health and well-being (Marasabessy *et al*, 2020). Benson's relaxation technique can reduce muscle pressure and physiological effects by creating a stability among the posterior and inferior hypothalamus, reducing sympathetic nervous system activity, and secreting catecholamine, so that once a patient relaxes his body, it can reduce anxiety, sleep disorders, and fatigue (Hassanzadeh *et al*, 2018). Benson's relaxation technique is simple to execute and carries no risk or adverse consequences for hemodialysis patients (Alzaghmouri *et al*, 2021).

This review will therefore investigate the effects of the Benson's relaxation technique on the anxiety, sleep quality, and fatigue of hemodialysis patients.

MATERIALS AND METHODS

Eligibility criteria

This scoping review was based articles discussing the effectiveness of Benson's relaxation technique on anxiety, sleep quality, and exhaustion in hemodialysis patients. The literatures under review were published during 2013-2022 in both Indonesian and English languages.

The inclusion and exclusion criteria for the articles were defined using the Population, Intervention, Comparison, Outcome and Study design (PICOS) method, with guidelines as follows:

P (Patient/Population/Problem) in this scoping review was hemodialysis patient;

I (Intervention/Prognostic factor/exposure) was Benson's relaxation technique;

C (Comparison/Control) in this study was none (there was no comparison);

O (Outcome) were reduced anxiety, enhanced sleep, and lowered fatigue as the results of Benson's relaxation technique.

Literature search strategy

Literature searches utilized Google Scholar, ProQuest and Science Direct databases. Boolean operators such as "AND" and "OR" were used. The keywords used were "Benson's relaxation technique", "anxiety", "sleep quality", "fatigue" and "hemodialysis".

Identification and selection of literature

Searching for articles in this review utilized three databases: Google Scholar, ProQuest and Science Direct databases were then analyzed for differences and duplications. Fig 1 explains the process of searching for articles and selecting them as literature using Preferred Reporting Items for Systematic Reviews and Meta-analysis for Scoping Review (PRISMA-SR). Inclusion and exclusion criteria for the selected literatures were articles published between 2013-2022, being original research article. Article search focused on reputable articles, namely original, full-text, English-language articles. Exclusion criteria were review articles, gray literature, papers, book chapters, personal opinions, or non-scientific publications.

Issues reviewed in the qualified articles was how Benson's therapy was effective in reducing anxiety, improving sleep quality and reducing fatigue in hemodialysis patients.

RESULTS

Fig 1 shows the selection results in a flowchart using the PRISMA guidelines. After searching, a total of 2,212 items were retrieved from Google Scholar, ProQuest, and Science Direct. Of the 2,212 articles, 1,469 with similarity were identified and eliminated from the selection process. The remaining 752 articles were selected and filtered based on the title. After that, 667 articles were excluded because they were not related to chronic kidney disease and hemodialysis patients; full text not available and published as books, dissertations and paid articles. Therefore, it left us with 85 articles.

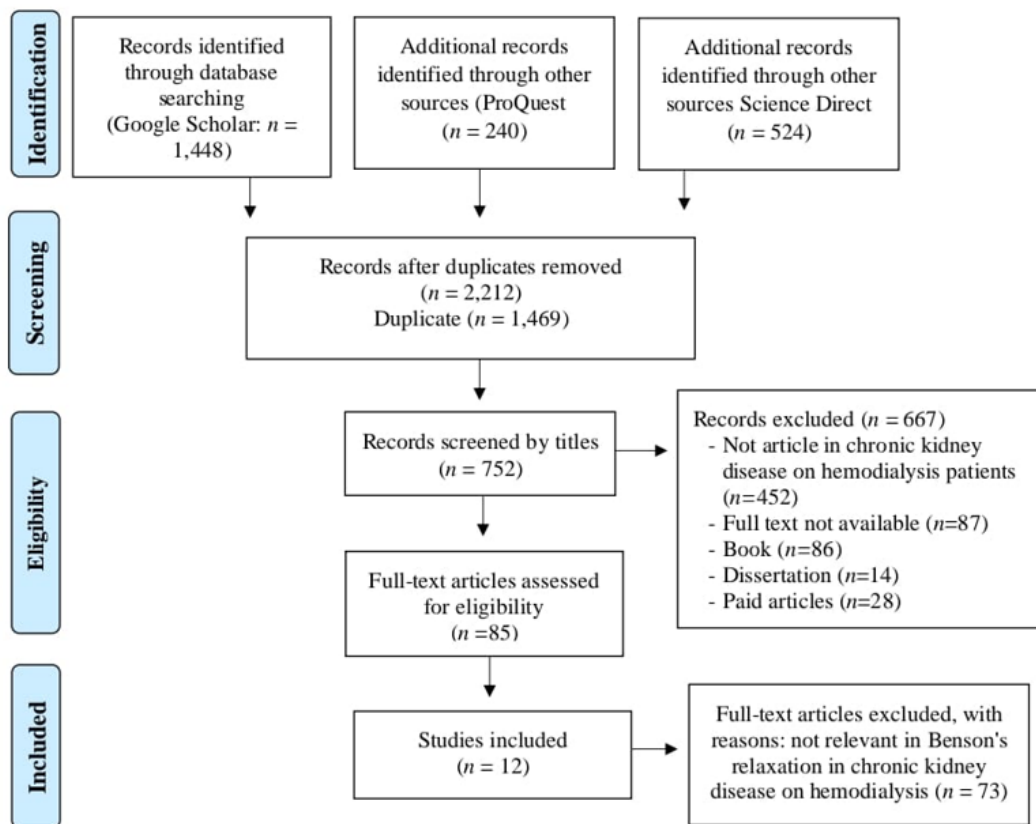


Fig 1 - Flowchart of articles selection process using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

Full text of those 85 articles were assessed for eligibility, 73 articles were excluded because they did not match the criteria and were not relevant on Benson's intervention technique. Finally, 12 articles were eligibly analyzed in this review.

Study sites, study designs and results of the 12 reviewed articles were compared and summarized in Table 1.

DISCUSSION

Chronic kidney failure patients undergoing hemodialysis often experience psychological problems that can weaken the body and impact their mental health. Mental health that is not treated immediately will experience a decrease in sleep quality which then results in fatigue which can lead to a decrease in patient activity (Al Naamani *et al*, 2021; Özberk and Kocamaz, 2020). If anxiety decreases, sleep quality improves, and fatigue decreases; this can improve patient health and well-being by enhancing the quality of life (Krismiadi *et al*, 2023).

Based on the review, we conclude that Benson's relaxation technique is beneficial. Six articles described the efficiency of Benson's relaxation technique in decreasing anxiety in hemodialysis patients (Maewad Elsayed *et al*, 2019; Heidari Gorji *et al*, 2014; Kiani *et al*, 2017; Suwanto *et al*, 2020; Faruq *et al*, 2020; Abd-elraziek *et al*, 2017).

Additionally, the effectiveness of Benson's relaxation technique in reducing stress among hemodialysis patients was discussed in two articles (Heidari Gorji *et al*, 2014; Kiani *et al*, 2017). Mental health is related to stress and anxiety perceptions. If a person's coping mechanism is inappropriate, it can have an effect on the quality of sleep and patient tiredness. If the issue is not handled immediately, it might weaken a person's immune system, increase their susceptibility to problems, and diminish the quality of life of hemodialysis patients (Dehghan *et al*, 2021; Mahdavi *et al*, 2013).

Table 1
Summary of the reviewed articles

Reference	Study site	Study design	Result
1. Maewad Elsayed et al (2019)	Egypt	Quasi-experiment	After older sufferers followed the Benson's relaxation technique, the common hospital tension scale, despair scale, and Pittsburgh sleep satisfactory index significantly advanced. Hemodialysis patients who implement Benson's relaxation techniques might experience less stress, depression, and insomnia.
2. Heidari Gorji et al (2014)	Iran	Randomized control trial	There was a correlation among a reduction in pain, stress, and tension in hemodialysis patients following Benson's relaxation technique. The technique is useful in decreasing hemodialysis patients' stages of soreness, strain, and anxiety.
3. Kiani et al (2017)	Iran	Randomized control trial	Before and after the Benson's relaxation technique, strain, tension, and despair had been appreciably one of a kind in the cases institution. Benson's relaxation technique is useful for reducing anxiety, stress, and depression.
4. Heshmatifar et al (2015)	Iran	Randomized control trial	Benson's relaxation technique is beneficial in alleviating depression.
5. Suwanto et al (2020)	Indonesia	Quasi-experiment	Benson's relaxation technique and slow stroke back massage substantially reduced hemodialysis patients' anxiety at Aisiyiyah Ponorogo General Hospital.
6. Faruq et al (2020)	Indonesia	Quasi-experiment	Benson's relaxation technique is effectively done to lower anxiety in patients undergoing hemodialysis. It has no side effects for patients as well as being easy to do.

Table 1 (cont)

Reference	Study site	Study design	Result
7. Abd-Elraziek et al (2017)	United States of America	Quasi-experiment	There were significant variations within the increase in patient expertise, stages of depression, stress and tension following the implementation of the Benson's relaxation education program. Benson's relaxation technique is beneficial at alleviating stress, despair, and anxiety in hemodialysis patients.
8. Rambod et al (2013)	Iran	Randomized control trial	The Pittsburgh Sleep Quality Index subscale ratings for sleep issues, daytime dysfunction, sleep-aid medicine usage, subjective sleep exceptional, and its standard rating differ notably between the two groups. Benson relaxation was found to be effective in improving sleep quality in hemodialysis patients
9. Purba et al (2020)	Indonesia	Quasi-experiment	Progressive muscle relaxation therapies and Benson's relaxation technique are equally effective in enhancing the sleep quality of hemodialysis patients with sleep problems.
10. Sulistyarningsih et al (2016)	Indonesia	Quasi-experiment	Benson's relaxation technique is beneficial in reducing levels of insomnia and promoting restful sleep-in hemodialysis patients with chronic renal failure.
11. Hassanzadeh et al (2018)	Iran	Randomized control trial	The average improvement in fatigue scores between the relaxation and aromatherapy groups changed significantly between the pre- and post-intervention periods.
12. Heshmati Far et al (2020)	Iran	Randomized, single-blind, controlled trial using a parallel design	Reduction of fatigue as a factor that can influence an increase in hemodialysis patients' daily activity. As a non-pharmacological intervention, Benson's relaxation technique can effectively improve the patient's daily activities. According to research findings, fatigue may considerably reduce physical activity.

Also discovered was a paper claiming that Benson's relaxation technique might boost patient knowledge. In this instance, educating hemodialysis patients with chronic renal failure about the intervention program they are doing. The patient can overcome stress, despair, and anxiety if the Benson's relaxation therapy program is followed correctly and consistently (Abd-Elraziq *et al*, 2017).

Three articles described how Benson's relaxation technique improved the sleep quality of hemodialysis patients (Rambod *et al*, 2013; Purba *et al*, 2020; Sulistyaningsih and Melastuti, 2016) whereas one described how adjustments to insomnia improved sleep quality (Sulistyaningsih and Melastuti, 2016). Poor sleep quality in hemodialysis patients reduces independent activities and increases the risk of cardiovascular disease, infection, patient condition, and mortality (Efe Arslan and Kılıç Akça, 2020; Norozi Firoz, 2019).

There were also two articles describing how Benson's relaxation technique reduced fatigue in hemodialysis patients (Kodama *et al*. 2020; Salehi *et al*, 2020). Prolonged fatigue in hemodialysis patients can diminish self-care activities, interfere with family and social duties, reduce the ability to perform everyday activities, lead to an increase in reliance on health care, and affect self-confidence.

It was also discovered that Benson's relaxation technique was efficient in lowering pain in hemodialysis patients, according to Heidari Gorji *et al* (2014). The majority of hemodialysis patients experience pain during needle insertion; hemodialysis patients experience pain at every Av-Vistula insertion session. The level of pain experienced by the patient during insertion will vary based on his or her pain threshold, so that nursing interventions are required to alleviate patients' suffering.

The Benson's relaxation technique is a spiritual relaxation technique. This approach involves uttering pleasant statements that are believed to be emotionally relaxing in an effort to concentrate the mind. This very

adaptable relaxation technique can be practiced alone or with the assistance of a guide or mentor (Sulistyaningsih and Melastuti, 2016). Benson's relaxation technique can be performed twice day for 10-20 minutes and must be performed consistently to achieve the desired results (Bagheri *et al*, 2021; Mahdavi *et al*, 2013). By using Benson's relaxation technique, the mood will be improved (Mahdavi *et al*, 2013).

The Benson's relaxation technique is a form of relaxation that utilizes the parasympathetic nervous system to reduce the physiological and emotional stress reaction of the individual. Benson's relaxation technique is effective because it stops sympathetic neurons from using as much oxygen, which results in muscle relaxation and a feeling of peace. The parasympathetic nervous system is shut off during relaxation. This makes the patient feel more at peace and improves their sleep, anxiety management, and resistance to tiredness (Abu Maloh *et al*, 2022).

In conclusion, based on the results of reviewing these 12 articles, Benson's relaxation technique is highly beneficial in decreasing anxiety, improving sleep quality, and reducing fatigue in hemodialysis patients, hence assisting these patients in enhancing their quality of life. Benson's relaxation technique is simple to administer, poses no danger or adverse effects to the patient, and is cost-effective.

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CONFLICT OF INTEREST DISCLOSURE

The authors declare no potential conflict of interest.

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