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Review Article

Effect of Benson's relaxation technique on the quality of sleep among patients with chronic diseases: A narrative review

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Abstract

In countries around the world, chronic diseases (CDs) are always considered to be a major challenge as a result of their high mortality and morbidity. There is evidence that Benson's relaxation technique (BRT) can benefit CD patients' health conditions. Nevertheless, there is still a dispute regarding the efficacy of BRT in improving sleep quality. Our literature is aimed at providing a better understanding of how BRT impacts the quality of sleep among patients with CDs. We searched for relevant publications in PubMed/MEDLINE, Web of Science, Scopus, Cochrane Central Register of Controlled Trials, ProQuest, Science Direct, and Google Scholar search engine from January 1, 2000, to November 24, 2023. In addition, we screened related studies and reference lists of identified studies. We included studies published in Persian and English that assessed the effect of BRT on the quality of sleep among patients with CDs. A review article, an editorial, a letter, a comment, an abstract, and a case report were excluded. Abstracts and full-text articles relevant to the topic were independently reviewed. Disagreements were resolved through consensus. Studies included in this review indicate that the BRT has a significant statistical difference in sleep quality scores compared to baselines or control groups for patients with CD, whose quality of sleep can be affected by invasive and stressful surgeries. The review advocated routine use of BRT as an alternative therapy in the treatment of CDs to improve sleep quality.

Keywords: Relaxation Therapy, Chronic Disease, Sleep Quality, Nurses.

1 | Introduction

Chronic diseases (CDs) are consistently seen as a major health system challenge worldwide. The four primary CD types are chronic respiratory diseases, cardiovascular diseases (CVDs), diabetes, and cancer [1, 2]. The mortality rate for non-communicable diseases is approximately 38 million people worldwide per year, with most deaths occurring in developing countries [3]. The growing occurrence of these diseases leads to significant economic losses for countries and health systems [4, 5]. Poor diet, lack of physical activity, smoking, and lifestyle changes have contributed to an increase in disease risk factors [4, 6]. CDs are the main factor behind morbidity and mortality, leading to increased healthcare costs, economic burden, and sleep disruption [7, 8]. Sleep disorders are associated with pain and stress in patients with CDs. Between 33.8% and 44.0% of older adults [9-11] experience sleep disturbance, which has been associated with cognitive dysfunction [12], depression [13], CVDs, and stroke [8, 14]. In a study conducted by Zhang et al., (2017) middle-aged people who have two or more CDs are nearly nine times more likely to have poor sleep quality than those with no or only one CD [15]. Good sleep quality plays a major role in achieving optimal health and wellness [16]. An individual suffering from sleep disorders can live a sedentary lifestyle which negatively impacts his or her health and mental wellbeing [17]. The treatment of sleep disturbances in patients with CDs involves both pharma-

cological and non-pharmacological interventions [17, 18]. Pharmacological treatments can lead to complications, so considering non-pharmacological options seems reasonable [19]. Drug resistance and withdrawal symptoms are common side effects of many hypnotics. As a result, non-pharmaceutical methods are being used more to enhance patients' sleep quality [18]. Non-pharmacological interventions, such as mind distraction techniques, relaxation, music therapy, biofeedback, cognitive restructuring, lifestyle changes, time control, and guided imagery, are commonly used [18, 19]. In addition to controlling stress and anxiety levels, mood disorders, autonomic nervous system function, and body discomfort using this technique has been found to be a successful and easy method of treating sleep disturbances. Benson's relaxation technique (BRT), Yoga, Meditation, and Progressive Muscle Relaxation (PMR) are all used to help patients with sleep difficulty [17]. The introduction of relaxation as a nursing intervention has been beneficial for hemodialysis patients, improving their mental and physical well-being and reducing stress levels [19]. By suppressing sympathetic nervous system activity, promoting catecholamine secretion, and balancing the hypothalamus, muscle tension is reduced, physiological effects are relieved, blood pressure, pulse rate, and breathing are regulated, and muscle spasms caused by stress are reduced [19]. There are many methods of relaxation available. A technique that can be used in these situations is BRT. Benson (1975) introduced this technique [20]. There are both advantages and disadvantages to using this nursing intervention method. A variety of physical and psychological symptoms and signs are reduced through mindfulness techniques [18, 19]. As a method of relaxing muscles, BRT is known for reducing sympathetic and parasympathetic stimulation in the hypothalamus. Its effectiveness extends to pulse rate, heart workload, and respiratory function [21]. Researchers have found that BRT is effective at treating sleep problems in the elderly [22], patients receiving hemodialysis [19, 23], and pregnant women who have hypertension [24]. Hence, the use of BRT appears to have positive effects on reducing anxiety and depression, improving sleep, and enhancing overall well-being [18, 21].

Considering the prevalence of CDs and sleep disorders and the high prevalence of sleep disorders, we performed a narrative review on BRT's effects on sleep quality among CDs and patients with sleep disorders.

2 | Methods

The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flowchart was utilized to record the procedures involved in gathering, evaluating, and choosing articles. A narrative review is the research method. For data collection, the authors accessed PubMed/MEDLINE, Cochrane Central Register of Controlled Trials, Web of Science, Scopus, Science Direct, ProQuest, and Google Scholar search engine. An algorithm in which free text keywords were combined with medical subject headings phrases was used to search these databases. We used the keywords "relaxation therapy", "therapeutic relaxation", "relaxation techniques", "Benson's technique", "Benson's training", "Benson's relaxation technique", "sleep quality", "sleep qualities", "chronic disease", "chronic diseases", "chronic illness", and "chronic conditions" for extraction. We also used the Boolean operators "AND" and "OR" to extract relevant research articles. A reference list of the identified studies and related studies was also screened. Study criteria included studies published between January 1, 2000, and November 24, 2023, exploring whether BRT improves sleep quality among patients with CDs. Abstracts, reports, editorials, letters, and comments were excluded.

3 | Results

A total of 13 articles [17, 19, 22-32] met the criteria of this study by reviewing the full texts. Studies investigating the efficacy of BRT on patients with chronic kidney disease, heart disease, neurological disease, and cancer were published between 2013 and 2023 in different countries, including Iran (six studies), Indonesia (five studies), and Egypt (two studies).

3.1 | CDs

CDs are responsible for the majority of global deaths and disabilities [31]. A significant portion of adults, approximately 50% or 34 individuals, grapple with one or more CDs, resulting in a host of daily challenges, including difficult symptoms, loss of independence, and the need for self-management. Moreover, patients with CDs might encounter multiple sleep quality challenges caused by drug usage, anxiety, depression, and pain, which can affect aspects like sleep onset, maintenance, and awakening [33, 34].

3.2 | Sleep quality among patients with CDs

"Quality of sleep" refers to the satisfaction of an individual with every aspect of their sleeping [31]. Adequate sleep is becoming more and more important for athletic performance and overall health. Additionally, it is associated with specific conditions like stroke, obesity, type 2 diabetes, and CVD [32, 35].

3.3 | Effect of BRT on the quality of sleep among patients with CDs

There are several studies included in this review that were conducted in patients with chronic kidney disease [19, 26, 28, 30, 31], chronic heart disease [17, 22, 27, 29, 32], chronic neurologic disease [24], as well as cancer [23, 25]. A study by Rambod et al., (2013) found that a significant difference was observed when comparing the mean change of subjective sleep quality, use of sleep medication, daytime dysfunction, sleep disturbances, sleep latency, and global sleep quality before and after the intervention [30]. Furthermore, Elsayed et al., (2019) [19] in their research studied the effect of BRT on anxiety, depression, and sleep quality of elderly patients undergoing hemodialysis, and their research showed that BRT significantly improved the mean total scores of the Pittsburgh sleep quality index, the hospital anxiety scale, and the depression scale. In a study conducted by Sulistyaningsih & Melastuti (2016) [31], BRT was evaluated in patients with chronic kidney disease on hemodialysis to determine its effectiveness in reducing insomnia. A significant difference in insomnia levels was noticed between patients in the experimental group and those in the control group; BRT was also effective in reducing insomnia levels. Studies by Bagheri et al., (2021) [17], Moradi Mohammadi et al., (2020) [27], and Bakavoly et al., (2023) [22] concerning the effects of BRT on sleep quality among patients with chronic heart disease can be found here. The effect of this technique after coronary artery bypass graft on patients with coronary artery disease and heart failure has been examined in [17, 22, 27] studies, according to their findings, this technique can improve sleep quality by improving subjective sleep quality, sleep latency, sleep efficacy, sleep disturbances, and total quality in patients, either alone or combined with PMR and foot reflexology massage. Also, studies by Harorani et al., (2020) [25] and Efendi et al., (2022) [23] examined how BRT affected cancer patients receiving chemotherapy in terms of sleep quality. A significant improvement in sleep quality was observed in the experimental group after BRT intervention when compared to the control group. Therefore, BRT reduces the sleep scores of cancer patients clinically and statistically. Furthermore, Hamdi Kamal Khalil et al., (2021) [24] studied how BRT affected the quality of sleep and fatigue in multiple sclerosis patients. Based on their results, BRT improved sleep quality and fatigue scores significantly when compared before and after practice.

4 | Discussion

According to the included studies, BRT is effective in treating several CDs, including CVD [17, 22, 27, 29, 32], kidney disease [19, 26, 28, 30, 31], neurological disease [24] and cancer [23, 25]. According to all the reviewed studies, the overall sleep quality of these patients improved significantly after this technique was implemented in comparison to the baseline. According to some studies [27, 30], improvements in subjective sleep quality, sleep latency, sleep efficacy, sleep disturbances, and overall quality contributed to the difference in sleep quality between intervention and control groups. On the other hand, in other studies [17], this was the opposite. By combining the Pittsburgh Sleep Quality Index with the Insomnia Severity Index an assessment of sleep quality was carried out. There was a period of 4-8 weeks between study implementation and the intervention lasted 15-45 minutes twice a day for 15-45 minutes in each study. The findings of Kamal & Herawati (2019) [36] and Sunairattanaporn et al., (2022) [37] are similar to this study [36, 37]. The results indicate that hemodialysis patients and heart failure patients may benefit from this method. It was found that BRT significantly reduced stress, anxiety, and fatigue in CDS patients and improved their sleep quality. Hence, educational sessions can help healthcare providers like nurses and midwives implement this complementary and effective treatment which improves patients' sleep quality, in a cost-effective and easy-to-use way.

4.1 | Limitations

Studies were only selected from full-text articles that were accessible to inspect in Iran which may have restricted the results.

4.2 | Implications for nursing managers and policymakers

Nursing managers and health policymakers can contribute to the development and integration of complementary and alternative medicine methods such as relaxation techniques as cost-effective and useful methods in clinical environments and lead to improved treatment outcomes, especially in patients with chronic conditions that have a long hospitalization period and re-hospitalization rate.

4.3 | Recommendations for future research

By reviewing this narrative, researchers will be motivated to conduct broader studies in different countries and pay attention to the effectiveness of this method on various CDs, such as respiratory and neurological conditions. BRT should be used for these patients in healthcare organizations, and healthcare providers

should be educated about it. These patient areas can benefit from BRT nursing interventions on a daily basis.

5 | Conclusions

In sum, to treat patients with CDs who suffer from sleep disorders, it is essential to take a comprehensive and multidisciplinary approach. Health professionals, including nurses, play a critical role in the improvement of the quality of sleep among patients with CDs. Behavioral and psychological interventions can be used to overcome sleep disorders. BRT can potentially enhance sleep quality in patients with CDs.

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Authors' contributions

Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work: SS, SB, AMN, SS; Drafting the work or revising it critically for important intellectual content: SS, SB, AMN, SS; Final approval of the version to be published: SS, SB, AMN, SS; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: SS, SB, AMN, SS.

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Competing interests

We do not have potential conflicts of interest with respect to the research, authorship, and publication of this article.

Availability of data and materials

The datasets used during the current study are available from the corresponding author on request.

Using artificial intelligent chatbots

None.

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