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The effect of Benson's relaxation technique on the quality of sleep of Iranian hemodialysis patients: A randomized trial

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KEYWORDS

Sleep;
Insomnia;
Hemodialysis;
Relaxation therapy

Summary

Objective: This study was performed to evaluate the effectiveness of Benson's relaxation technique in the quality of sleep of hemodialysis patients.

Design: It was a randomized controlled trial with a pre–post-test design. A total of 86 hemodialysis patients referring to hemodialysis units were assigned to either the intervention (receiving Benson's relaxation technique) or the control group (routine care) through block randomization. **Setting:** The study was performed in two hemodialysis units affiliated to Shiraz University of Medical Sciences, Shiraz, Iran.

Intervention: The patients in the intervention group listened to the audiotape of Benson's relaxation technique twice a day each time for twenty minutes for eight weeks.

Main outcome measures: The global score of Pittsburgh Sleep Quality Index (PSQI) as well as its components was computed in both the intervention and the control group before and at the 8th week of the intervention.

Results: The results of ANCOVA indicated significant differences between the two groups regarding the scores of Pittsburgh Sleep Quality Index subscales, such as sleep disturbance, daytime

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dysfunction, the use of sleep medication, and subjective sleep quality and as well as its global scores at the 8th week of the intervention ($p < 0.05$).

Conclusions: This study highlighted the importance of Benson's relaxation technique in improvement of the sleep quality of the patients on hemodialysis. Thus, educational sessions are recommended to be planned on this cost effective and easy to use relaxation technique in order to improve hemodialysis patients' sleep quality. Further studies are needed to assess the effectiveness of this technique in other groups of patients.

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Introduction

Sleep is a condition in which a process of daily restoration happens.¹ Approximately 25–36% of normal adult population suffers from occasional sleep disorders.² However, the prevalence of these disorders in the patients with uremia on maintenance hemodialysis (HD) ranges from 40 to 85% which is higher than the general population.^{3,4} It was reported that most of the chronic renal failure cases are poor sleepers.⁵

The probable reasons for sleep disorders in HD patients include plasma concentrations of toxins (creatinine and urea), anemia, nocturnal hypoxia, and co-morbidities.³ Moreover, anxiety, worry, sadness, and a history of depression are among the major factors significantly associated with sleep disorders in the patients with End Stage Renal Disease (ESRD).⁶ Poor sleep in HD patients has a negative impact on the physical and mental components of one's life⁷ and leads to a decrease in their performance⁸ as well as cognitive and memory dysfunction.⁹

Although sleep is very important for the performance of healthy people and ESRD patients on HD, few interventional studies have been done to address the related problems.⁸ The American Psychological Association (APA) has proposed three psychological treatments for sleep disorders including stimulus control, progressive muscle relaxation, and paradoxical intention.¹⁰ Moreover, in the recent years, many people have tried to get rid of their sleep problems using pharmacological agents, complementary/alternative medicine, herbal supplements, and behavioral interventions such as relaxation therapies.^{11,12} There are different kinds of relaxation technique. One of these techniques which is better tolerated by HD patients is Benson's relaxation technique (BRT). This technique was identified by Benson (1975) and led to complete relaxation of all the muscles.¹³ Relaxation techniques are among the cost effective and easy to use methods for treatment of sleep disorders. Relaxation technique as a kind of subjective stress management method¹⁴ decreased the anxiety level,¹⁵ mood disturbance,¹⁶ body discomfort,¹⁷ and autonomic nervous system's activity¹³ and at least it might affect the quality of sleep. The time needed to fall asleep,¹⁸ sleep-onset latency,¹⁹ and the frequency of waking up have been reduced by relaxation therapy, as well.¹⁸

In a study on the patients with multiple sclerosis, it was shown that muscle relaxation technique improved their sleep quality.²⁰ Furthermore, autogenic relaxation caused the cancer patients to go to sleep faster.²¹ Other studies revealed that vitality and sleep dimensions of quality of life were also significantly improved at a 6-month follow-up in the relaxation training group compared to the acupuncture

group.²² Yet, one other study showed that acupoints massage improved the ESRD patients' quality of sleep.⁸

Most of the studies on the effect of relaxation therapy on sleep disorders have been focused on other relaxation techniques, such as muscle relaxation,^{20,23} music relaxation,²⁴ and a combination of muscle relaxation with aerobic exercise program.²⁵ In addition, these studies have examined other chronic diseases, such as diabetes²⁶ and multiple sclerosis.²⁰ However, only a limited number of researches have focused on the effect of BRT on a chronic illness such as ESRD. Therefore, this study aims to evaluate the effect of BRT on the quality of sleep of HD patients. We examined the hypothesis: "after eight weeks of intervention, the quality of sleep of HD patients who have received BRT and routine care will be better than those only receiving routine care".

Methods

Design

It was a randomized controlled trial with a pre–post-test design. The study compared two groups of HD patients, the intervention group receiving BRT and routine care and the control group only receiving routine care.

Setting

The study was conducted in two HD units affiliated to Shiraz University of Medical Sciences (SUMS) in Shiraz, one of the megacities of Iran, from February 2011 to January 2012.

Participants

The study participants included Iranian adult patients on HD. Besides, the target population consisted of HD patients who were listed in the HD units. The inclusion criteria of the study were being 18 years old or above, having been on HD twice a week or more for at least the 3 previous months, being alert and oriented, being literate, and being willing to participate in the study. On the other hand, the exclusion criteria of the study were being diagnosed with unstable hypertension, arrhythmia, cardiac angina, congestive heart failure, acute cerebrovascular accident, and hepatic failure during the study. Presence of physical limitations to learning prior to the training or during the relaxation therapy was among the other exclusion criteria. The patients with emotional turmoil during the previous month were also excluded from the study.

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