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Evaluation of the effect of Benson's relaxation technique on pain and quality of life of haemodialysis patients: A randomized controlled trial

Masoume Rambod [a,*], Farkhondeh Sharif [b], Nasrin Pourali-Mohammadi [c], Nilofar Pasyar [d], Forough Rafii [e]

[a] Community Based Psychiatric Care Research Center, Student Research Committee, Department of Medical Surgical, School of Nursing and Midwifery, Shiraz University of Medical Science, Shiraz, Iran
[b] Community Based Psychiatric Care Research Center, Department of Mental Health and Psychiatric Nursing, Faculty of Nursing and Midwifery, Shiraz University of Medical Science and Health Services, Shiraz, Iran
[c] School of Nursing and Midwifery, Shiraz University of Medical Science, Shiraz, Iran
[d] Department of Medical Surgical, Faculty of Nursing and Midwifery, Shiraz University of Medical Science and Health Services, Shiraz, Iran
[e] Center for Nursing Care Research, Faculty of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran

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ABSTRACT

Background: Haemodialysis patients may suffer from pain and impairment of quality of life. Some complementary interventions, such as relaxation therapy, might affect the pain and quality of life. The present study aimed to identify the effectiveness of Benson's relaxation technique in relieving pain and improving the quality of life in haemodialysis patients.
Study design: The study was a randomized controlled trial.
Setting and participants: The data were collected in two haemodialysis units affiliated to Shiraz University of Medical Sciences. A total of 86 haemodialysis patients were randomly assigned to either the intervention (receiving Benson's relaxation technique) or the control group (routine care) from 2011 to 2012.
Intervention: The patients in the intervention groups listened to the audiotape of relaxation technique twice a day each time for 20 min for eight weeks.
Measurements and outcomes: The pain numeric rating scale and Ferrans and Powers Quality of Life Index-dialysis version questionnaire were completed at baseline and 8 weeks after the intervention. The data were analyzed using independent *t*-test and ANCOVA.
Results: The results of ANCOVA showed a significant difference between the intervention and the control group concerning the mean score of the intensity of pain ($F = 6.03$, $p = 0.01$). Moreover, a significant difference was found between the intervention and the control group regarding the total quality of life ($F = 10.20$, $p = 0.002$) and health-functioning ($F = 8.64$, $p = 0.004$), socioeconomic ($F = 12.45$, $p = 0.001$), and family ($F = 8.52$, $p = 0.005$) subscales of quality of life.
Conclusion: These findings indicated that Benson's relaxation technique might relieve the intensity of pain and improve the quality of life in haemodialysis patients. Thus, Benson's relaxation technique could be used as part of the care practice for relieving the pain intensity and improvement of the quality of life in haemodialysis patients.

* Corresponding author at: School of Nursing and Midwifery, Shiraz University of Medical Sciences, Zand St., Namazee Sq., 7193613119 Shiraz, Iran. Tel.: +98 711 6474258; fax: +98 711 6474252.
E-mail addresses: rambodm@sums.ac.ir (M. Rambod), Fsharif@sums.ac.ir (F. Sharif), Pourali@sums.ac.ir (N. Pourali-Mohammadi), pasyarn@yahoo.com (N. Pasyar), foroughrafii@yahoo.com (F. Rafii).

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What is already known about the topic?

- End-stage renal disease has negative impacts on the quality of life and emotional, physical, cognitive, and social dimensions of one's life.
- Chronic pain is the most common and disabling symptom in haemodialysis patients.
- Benson's relaxation technique may enhance the quality of life and relieve the pain intensity of haemodialysis patients.

What this paper adds

- Haemodialysis patients who received Benson's relaxation technique showed better health-functioning, socio-economic, and family subscales of quality of life and total quality of life.
- Benson's relaxation technique positively relieved the intensity of pain in the haemodialysis patients.

1. Introduction

End stage renal disease (ESRD) is an irreversible and progressive renal dysfunction (Baraz et al., 2010). The prevalence of ESRD has significantly increased around the world as well as in Iran (Roudbari et al., 2010).

One of the most common problems in ESRD and haemodialysis (HD) patients is chronic pain (Masajtis-Zagajewska et al., 2011) and more than 50% of all ESRD patients suffer from pain (Innis, 2006). In fact, most HD patients suffer from moderate to severe pain and 54% of HD patients show more than one location of pain (Masajtis-Zagajewska et al., 2011).

ESRD patients may suffer from pain in a number of ways that are unique not only to the disease but also to the treatment. Bone pain from renal osteodystrophy, peripheral neuropathy, dialysis-related arthropathy, dialysis disequilibrium syndrome, dialysis headache, and muscle cramping during or after haemodialysis are the common causes of pain in HD patients (Shayamsunder et al., 2005).

The experience of pain is associated with many immediate and long-term negative outcomes (Alhani, 2010). Besides, a significant correlation was found between mortality and both frequency and intensity of pain in the HD patients while they were not on dialysis (Harris et al., 2012). Furthermore, disabling symptoms (Nayak-Rao, 2011), depression, insomnia, severe irritability, anxiousness, and inability to cope with stress were more common among the HD patients with pain compared to those without pain (Davison and Jhangri, 2005). Moreover, the patients with chronic pain may experience high levels of disability, distress, and societal burden (Breivik et al., 2006). Overall, chronic pain affects the quality of life (QOL) of the HD patients (Gomez Alonso, 2010).

Although treatments, such as HD, are able to prolong life expectancy (Chow and Wong, 2010), the patients with ESRD potentially experience an alternation in the level of physical activity, loss of job, and disturbance in the social function (Unruh and Hess, 2007). These will have a negative impact on their life plans, employment status, financial situation, self-esteem, and level of independence (Niu and Li, 2005), affecting the patients' physical, psychological, and social well-being (Rambod and Rafii, 2010). Besides, HD patients indicated lower physical functioning QOL compared to the general population (Cleary and Drennan, 2005). They also experienced a lower level of total QOL and health/functioning and familial subscales of QOL compared to the transplanted patients (Rambod et al., 2011).

Recently, there has been an increasing interest in the use of complementary interventions, such as relaxation therapy, for the individuals with chronic illnesses (Tsai, 2004) and pain management in the patients with ESRD (Innis, 2006). Relaxation techniques improve self-efficacy (Diezemann, 2011) and relieve psychological distress in the patients with chronic illnesses (Yu et al., 2007).

Not surprisingly, non-pharmacologic treatments, such as relaxation therapy, have resulted in improvement of pain (Kwekkeboom et al., 2010). Relaxation techniques lead to muscular stabilization and serve as distraction from pain (Diezemann, 2011). It has been indicated that 6-week combined progressive relaxation technique and guided imagery intervention improved pain in the subjects with chronic and non-malignant pain (Chen and Francis, 2010). Yoga-based exercise program as a relaxation training also decreased the intensity of pain in HD patients (Yurtkuran et al., 2007). Although some studies have indicated that relaxation therapy is a potentially non-pharmacological intervention on pain relief and a variety of medical conditions (Mohammadi Fakhar et al., 2013; Topcu and Findik, 2012), most of these studies have focused on other relaxation techniques, such as applied relaxation (Gustavsson and von Koch, 2006), relaxation and imagery (Chen and Francis, 2010), and a combination of relaxation techniques and back massage (Buyukyılmaz and Astı, 2013). In addition, these studies have examined other diseases, such as non-malignant pain (Chen and Francis, 2010), long-lasting neck pain (Gustavsson and von Koch, 2006), and total hip or knee arthroplasty (Buyukyılmaz and Astı, 2013).

In addition to the effect of relaxation therapy on pain, this technique has been shown to improve QOL in a variety of conditions, including asthma (Nickel et al., 2006) and osteoarthritis in elderly women (Baird and Sands, 2006). It has also been recommended as an adjunctive therapy for anxiety by providing the patients with self-maintenance coping skills to decrease the anxiety symptoms (Pan et al., 2012). Cheung et al. (2003) have indicated that the use of muscle relaxation significantly improved generic QOL in the intervention group, especially in the domains of physical health, psychological health, social concerns, and environment. Moreover, it has been indicated that older women with osteoarthritis who received guided imagery with relaxation experienced a better health related QOL (HRQOL) compared to the control group (Baird and Sands, 2006). Furthermore, the patients with multiple sclerosis using relaxation training reported more energy and vigor (Sutherland et al., 2005) as well as better QOL (Ghafari et al., 2009) in comparison to the control group. Also, they were less limited in their roles due to physical and emotional problems (Sutherland et al., 2005).