

# Comparison of the Effect of Reflexology and Swedish Massage on Restless Legs Syndrome and Sleep Quality in Patients Undergoing Hemodialysis: a Randomized Clinical Trial

Alireza Ghanbari, MS (student),<sup>1</sup> Parvin Mangolian Shahrababaki, PhD,<sup>1</sup> Mahlagha Dehghan, PhD,<sup>1</sup> Hossein Mardanparvar, MS,<sup>2</sup> Esmaeil Kargar Dowlatabadi, MS,<sup>3</sup> Asghar Emami, BS,<sup>3</sup> Esmaeil Sarikhani-Khorrami, MS<sup>4\*</sup>

<sup>1</sup>Nursing Research Center, Kerman University of Medical Sciences, Kerman, Iran, <sup>2</sup>Faculty of Nursing & Midwifery, Operating Room Nursing Group, Hormozgan University of Medical Sciences, Bandar Abbas, Iran, <sup>3</sup>Nursing Research Center, Shiraz University of Medical Sciences, Shiraz, Iran, <sup>4</sup>Department of Medical-Surgical Nursing, Faculty of Nursing & Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

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**Background:** Patients undergoing hemodialysis experience painful complications such as restless leg syndrome and poor sleep quality, which negatively affect their quality of life.

**Purpose:** This study aimed to compare the effect of reflexology and Swedish massage on restless leg syndrome and sleep quality in patients undergoing hemodialysis.

**Method:** This is a randomized clinical trial conducted on 90 patients undergoing hemodialysis. The two intervention groups received either foot reflexology (n = 30) or Swedish massage (n = 30) for four weeks. In the sham group (n = 30), a simple touch of the knee down was performed with the same conditions as the intervention groups. Each sample completed the International Restless Leg Syndrome and Pittsburgh Sleep Quality Index Questionnaires before, immediately after, and one month after the intervention.

**Result:** The results showed that immediately after the intervention, restless leg syndrome and sleep quality were significantly better in the foot reflexology massage group than the Swedish massage and sham groups ( $P_{RLS} < 0.001$ ,  $P_{PSQI} < 0.001$ ); also, changes in restless leg syndrome and sleep quality, respectively, before and one-month follow-up after the intervention were not significant in all three groups ( $P_{RLS} = 0.47$ ,  $P_{PSQI} = 0.95$ ), ( $P_{RLS} = 0.91$ ,  $P_{PSQI} = 0.87$ ).

**Conclusion:** Reflexology and Swedish massage, as complementary methods, can improve the restless leg syndrome and sleep quality of patients undergoing

hemodialysis. However, foot reflexology massage had been more effective.

**KEYWORDS:** reflexology massage; restless legs syndrome; sleep quality; hemodialysis

## INTRODUCTION

Due to the annual growth of 5%–6% of patients with chronic kidney failure in the world, this disease is one of the most important therapeutic problems.<sup>(1)</sup> Many of these patients need hemodialysis to survive.<sup>(2)</sup> Most of these patients suffer from complications such as restless leg syndrome and sleep disorders<sup>(3)</sup> and various physiological changes associated with psychological distress.<sup>(4)</sup>

Restless Leg Syndrome (RLS) or Willis-Ekbom disease (WED) refers to an excessive pressure to move the leg, which is usually accompanied by unpleasant feelings. During 2020, a 40.7% prevalence of RLS was reported among hemodialysis patients.<sup>(5)</sup>

RLS affects the sleep quality and emotions of hemodialysis patients, and can lead to depression, anxiety, and an increased risk of cardiovascular disease among hemodialysis patients.<sup>(5)</sup>

Sleep disorders are common problems that most patients undergoing hemodialysis face.<sup>(3)</sup> It is estimated that these patients suffer from a prevalence of sleep disorders of 18%–69% in various forms (e.g., patients having restless leg syndrome from insomnia as a result of obstructive sleep apnea).<sup>(6)</sup> Sleep quality is defined as an individual's

hemodialysis unit. In the present study, we also observed an improvement in restless leg syndrome and sleep quality in patients undergoing hemodialysis using Swedish massage, with the difference that the effect of reflexology was able to increase the improvement in restless leg syndrome and sleep quality more than Swedish massage.

The present study had some limitations such as patients' withdrawal during the intervention due to worsening physical conditions or going through transplant process. It is also recommended that future studies evaluate the effect of reflexology foot massage on other symptoms of hemodialysis patients such as anxiety and stress, and clinical outcomes such as urinary output and biochemical tests, to evaluate the results of these cases on sleep quality and restless legs syndrome in these patients.

## CONCLUSION

The results of the present study showed that, immediately after the foot reflexology and the Swedish massage, restless leg syndrome and sleep quality improved in patients undergoing hemodialysis. In comparison, the patients in the foot reflexology group had better restless leg syndrome and sleep quality than the Swedish foot massage group. Due to the limitations in performing proper sports activities in all age groups of patients undergoing hemodialysis and problems such as poor restless leg syndrome and sleep quality in some of these patients, it seems necessary to use a simple and regular treatment method such as foot massage. This method can reduce these complications in patients undergoing hemodialysis. Foot reflexology massage can be an effective, simple, low-cost, and applicable intervention treatment that can be easily taught to nurses and patients' companions in different wards of medical centers and performed for patients.

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## CONFLICT OF INTEREST NOTIFICATION

The authors declare there are no conflicts of interest.

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