



## Research Article

# Comparing palm Reflexology and Slow-stroke Massage on Fatigue in Hemodialysis Patients

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### Abstract

**Objective:** Fatigue is one of the most disturbing and the most common symptoms reported by patients dialyzed. The aim of this study is comparing Reflexology and stroke massage on fatigue in hemodialysis patients.

**Methods:** This study is quasi-experimental intervention. The subjects included 52 hemodialysis patients who were divided into two groups randomly. The first group received hand reflexology massage and the second group received light stroke back. The before and after of each intervention fatigue were assessed through questionnaires. Data were analyzed with independent t test, chi-square test, Fisher's exact test, two-way ANOVA with repeated measures and Bonferroni test.

**Results:** Before the intervention, there was no statistically significant differences between the two groups [ $p=0.878$ ] but after the intervention fatigue in the group receiving Stroke massage was reduced significantly compared to Reflexology group ( $P<0.0001$ ).

**Conclusion:** This study showed that the use of Stroke as a nursing intervention to reduce fatigue in dialysis patients is safe, effective and affordable use.

**Keywords:** Reflexology; Stroke massage; Fatigue; Hemodialysis

### Introduction

The prevalence of chronic renal disease is growing in the world especially in Iran; now it has become a threat and global health problem [1]. In America, about 400,000 people have been suffering from chronic renal failure in the end of 2004 that more than 300,000 people have been treated with hemodialysis [2]. Chronic renal disease is including the diseases that are not only physical health but also endangers the other aspects of health. Now these patients find relief from premature death using modern methods of treatment, including

hemodialysis and at the same time are involved in the whole range of physical, psychological, social and economic problems [3,4]. Fatigue is one of the most troubling and most common symptoms reported by dialyzed patients [5]. Behavioral factors, factors associated with treatment and personal characteristics are the causes of fatigue in these patients [6]. Fatigue reduces well-being in these patients [7] and despite the advances in treatment field, there are fatigue and fluid and food restriction in dialysis patients [8]. Fatigue is a multidimensional concept, understand its different aspects will help nurses to better plan and implement strategies that relieve fatigue in hemodialysis patients [9]. Many methods, including methods available in complementary alternative medicine that nurses can help their patients to promote health using them.

Reflexology is a complementary and alternative therapy that has long history and now this method is one of six adjunctive treatments in America. This method is one of the most popular and most widespread methods of complementary medicine [10]. It is well recognized that reflexology make better flow of blood and lymph, soften and improve muscle, joints and tendons movement, strengthen muscles and improve relaxation, significant decrease of fatigue, Improve sleep and reduce pain [11].

Another form of complementary and no pharmacological medicine is the massage in back slow stroke. The technique is easy, inexpensive, rapid and noninvasive [12]. In fact, stroke massage is the gentle movement of hand on the skin so that the hand slips on the skin and does not move the deep muscles [13]. Massage stroke is applicable in the whole body, massage usually starts from the back [14]. Back slow stroke massage is slow, rhythmic and gentle movements of hands on the patient's back with a speed of about 60 movements in minutes that lasts about 3 to 10 min. Gestures used in this type of massage are slow-stroke that have quite intuitive effect and have very beneficial effect in patients' relaxation [15]. An organized review study was done in 2016 by Lee and colleagues in Korea to investigate the effect of reflexology on fatigue, sleep and pain. The results showed that reflexology massage has a significant impact on fatigue [11]. A study was done by Shafiee et al. in 2013 to determine the effect of slow stroke massage on pain and fatigue after patients with Coronary Artery Bypass Surgery. The results showed that slow stroke massage significantly reduces fatigue in the intervention group [16].

Therefore, it is believed that complementary therapy is a part of the comprehensive care in nursing [17]. This article compare reflexology and slow-stroke massage on fatigue in hemodialysis patients in Imam Khomeini Hospital of Zabol City in 2016. The aim of this study is comparing Reflexology and stroke massage on fatigue in hemodialysis patients.

### Materials and Methods

This is a quasi-experimental and Intervention study; 52 hemodialysis patients are selected among referred to Imam Khomeini Hospital Dialysis Center in 2017 and then randomly assigned to two Intervention groups including palm reflexology massage and back slow stroke massage. The factors to participate in the study: At least 18 years old, Consent to participate in the study, at least 6 months of dialysis, Being on the list of weekly dialysis, Three times in a week and every time 3 to 4 h of hemodialysis, No history of reflexology, Massage strokes and other forms of alternative medicine to reduce fatigue during last 6 months, having full awareness, listening and speaking

abilities acceptable to answer questions, the lack of chronic pain, diabetes, and having some degree of fatigue. Exclusion factors included: non-consent to participate in the study, Mental and sensory disorders, Performing a kidney transplant during the study and patient withdrew from participating in the study. Two questionnaires were used to collect information: Demographic questionnaire and Fatigue Severity Scale. Demographic questionnaire consisted of demographic characteristics including age, gender, location and the blood.

Fatigue Severity Scale (FSS1) Questionnaire was used to measure fatigue. The questionnaire was designed in 1989 by Krupp et al. [18]. The fatigue was obtained of the patient's scores on this scale responding to questions 9. Seven numbers were devoted to each question (From one to seven) that number one represented as the minimum fatigue and number seven represented the maximum fatigue; strongly disagree=1, disagree=2, somewhat disagree=3, idea=4, somewhat disagree=5, agree=6, strongly agree=7. Patients selected the desired number with respect to the fatigue. After obtaining a total score the patients' fatigue who's achieved a score of 9 questions is as follows: Patients with a total score of 36 or higher or an average of 4 or higher are considered as patients with symptoms of fatigue and patients who with the score lower than 36 or average lower than 4, are considered as patients with no symptoms of fatigue [19]. It is one of the best known and the most functional scale of fatigue which is used to measure the intensity of fatigue and in the most medical research. Now it is used in ten countries: Australia, Britain, Canada, France, Germany, Spain, New Zealand, Switzerland, Taiwan and America. The reliability of these tools is confirmed in various studies by Rasouli [20], Zakeri Moghadam [21] and faculty members of Tarbiat Modarres University with Alpha Coefficient 91% and 83%. Content validity is confirmed in the studies done by Zakeri Moghadam and Ghaffari, Bonner and Schneide [21-24].

This study was conducted during April to September of 2015. List of dialysis patients were collected from Imam Khomeini Hospital of Zabol City for the study. 81 patients were selected according to patient inclusion and exclusion standards by census method and then completed Informed consent form, demographic questionnaire and the Fatigue Severity Scale. 52 patients with some degree of fatigue were selected and participated in the study. The samples were randomly taken into Intervention groups: palm reflexology massage and massage stroke behind groups. In palm Reflexology Massage group for 26 participants, duration of the program and the steps were described and palm reflexology massage was performed on three points: pituitary, the solar plexus and the kidney. Pituitary reflection point location is placed in the center of cushions on the tip of thumb. Reflection place of kidney is in the great padding edge of the thumb.

Reflexology was performed three minutes on each of these points that totally lasted 10 min on each hand. Reflexology massage was performed for twice a week, ten minutes each meeting and for 5 weeks by the researcher [25]. The steps and duration of the program were described in slow back stroke massage group for 26 participants. Then stroke massage was performed within three weeks, two sessions per week, immediately after dialysis and 5 meetings in sitting position for the patients. It was done by a trained nurse and one of male researchers. Each meeting of massage was a ten minutes. The method of back slow stroke massage is in a way that a person sits on a chair and bends forward on a pillow. Person's shoulders are hold with both hands. While the thumbs are placed on both sides under the skull, fine rotation is done above the neck. The palm of one hand is placed at the base of the skull and Then soft blows are pressed down to the waist on

the spine. Then the second hand is placed at the base of the skull and it is tapped the low spine to the waist in the same way. This is done regularly. Hands are placed on either side of the neck, under the ears and hit is tapped the low and on clavicle bones through the thumbs, Just the shoulder. This movement is done several times; Thumbs are placed on either side of the spine, close to the shoulder and are moved to the bottom of the spinal cord to the waist. Palms are placed on either side of the neck; continuous and pulled sweep hits are tapped to the low neck, over the shoulders and down close to the backbone [21].

After ending of each intervention, fatigue intensity scale was completed by both groups. The data for this study was analyzed using independent t-test, Chi-square test, Fisher's exact test, two-way analysis of variance with repeated measures and Bonferroni test using SPSS version 21.

## Results

52 patients participated in the study in census way. 26 patients randomly assigned in palm reflexology massage group and 26 ones in back stroke massage group. 15 (7/57%) patients were male in massage stroke group and 11 (3/42%) patients were female. In palm reflexology massage for hands 21 (8/80%) patients were male and 5 (2/19%) patients were female. there is no statistically significant difference between two groups were not significant (P=0.07). The mean age of stroke massage group was 47.04 and reflexology massage group was 47/42 and there was no significant difference in two groups (P=0.3). In strokes massage group 11 (3/42%) people lived in rural areas and 15 (7/57%) lived in urban areas. But in reflexology group 17 patients (4/65%) lived in rural areas and 9 ones (6/34%) lived in urban areas. there was no significant difference in two groups (P=0.9). In both groups, the most blood types were O (4.40%) and lowest blood type was AB blood group (7.7%). There was no statistically significant difference between two groups in terms of blood type (P=0.8). The results showed that the average fatigue in groups of back slow stroke massage and palm reflexology massage was respectively 2.52 and 30.50. in this respect there was no significant statistical difference between two groups (P=0.878). Mean fatigue scores in back slow stroke massage and palm reflexology massage groups after the intervention was respectively 65.37 and 11.40 that there was a statistically significant difference between two groups (p<0001) (Table1).

Time of groups		1	2	Significance level
Palm massage	mean	50.3	40.1 1	*
	Standard deviation	9.41	13.2 8	(<0.0001)
Back stroke massage	mean	52.2	37.6 5	
	Standard deviation	10.37	11.5 1	

**Table 1:** Frequency distribution of mean and standard deviation of fatigue score in both palm reflexology and back stroke massage

## Discussion

The results showed that the mean of severity of fatigue in two back slow stroke massage and palms massage groups was respectively 52.2 and 50.30. The frequency of fatigue in these patients in studies done by

Braun [26], Schneider [27], Wisber [28], Ey [29], Kim [30], Liu [31] and Mortag [32] has been respectively reported 90, 58, 69, 70.63, 77.9, 50, 0.071 that the difference in fatigue could be due to differences in behavioral factors, factors related to the treatment and the patient's personal characteristics [7].

The mean score of fatigue before and after palm reflexology massage and back stroke massage had a significant difference; among the researches done at home and abroad, there was not found any study on the effect of back slow stroke massage the palm massage in the field of reducing the fatigue in hemodialysis patients. But Taghi-Zadeh and colleagues in a study to compare the effects of reflexology massage and slow stroke massage on the physiological scales in patients with heart attack showed that stroke massage on the mean of systolic and diastolic blood pressure, respiration, and increasing the arterial oxygen had the effect than reflexology massage [33]. In studies on the effects of massage therapy on other diseases, improving the fatigue have been reported, for example, Tsay et al. during their research showed that massage therapy improves sleep quality and decreasing the fatigue and improves the quality of life in patients with chronic renal failure [34]. Despite the findings of this study, the results of the research done by Cassileth on the effects of massage on fatigue in cancer patients, it was not shown a significant decrease in fatigue immediately after massage [35]. The authors believe that one of the most important causes of this issue is that usually there is the chronic fatigue in cancer patients. Therefore, massage intervention should be used in the longer time.

## Conclusion

According to the findings, the back stroke massage can be used to reduce fatigue in dialysis patients as a safe nursing, effective and affordable intervention.

According to the researchers' experiences on the study and see the nurses' passion to learn the technique of reflexology and stroke massage, it seems that such interventions of complementary medicine should be used as an effective non-pharmacological methods along with other regular treatments and maintenance. It should be noted that carrying out such activities in hospitals, physicians' offices and other health care institutions requires knowledge of health care providers, including doctors, nurses, and other members.

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## References

1. Shahdadi H, Hodki RM, Abadi AA, Sheikh A, Moghadasi A (2016) The effect of slow stroke backmassage on fatigue in patients undergoing hemodialysis: A randomized clinical trial. *International Journal of Pharmacy and Technology* 8: 16016-16023.
2. Smeltzer SC, Bare BG, Hinkle JL, Cheever KH (2008) *Textbook of medical-surgical Nursing*. Lippincott Williams & Wilkins, United States.
3. Shafipour V, Jafari H, Shafi pour L (2009) Relation of quality of life and stress intensity in hemodialysis patients. *Kowsar Med J* 14: 169-174.
4. Tayyebi A, Salimi SH, Mahmoudi, H, Tadrissi SD (2010) Comparison of quality of life in haemodialysis and renaltransplantation patients. *J Crit Care Nurs* 3: 7-8.
5. Schneider RA (2004) Chronic renal failure: assessing the Fatigue Severity Scale for use among caregivers. *J Clin Nurs* 13: 219-225.
6. Straub CK, Murphy SO, Rosenblum R (2008) Exercise in the management of fatigue in patients on peritoneal dialysis. *Nephrol Nurs J* 35: 469-475.
7. Tel H (2009) Determining quality of life and sleep in hemodialysis patients. *Dial Transplant* 38: 210-215.
8. Hibert M, Hodgins M (2006) Stressor and coping of in hospital hemodialysis patient aged 65 years and over. *J Adv Nurs* 56: 382-391.
9. Lee B, Lin C, Chaboyer W, Chiang C, Hung C (2005) The fatigue experience of hemodialysis patients in Taiwan. *J Clin Nurs* 16: 407-413.
10. White A (2000) A blinded investigation into the accuracy of reflexology charts. *Complement Ther Med* 8: 166-172.
11. Lee J, Han M, Chung Y, Kim J, Choi J (2011) Effects of Foot Reflexology on Fatigue, Sleep and Pain: A Systematic Review and Meta-analysis. *J Korean Acad Nurs* 41: 821-833.
12. Holland B, Pokorny ME (2001) Slow stroke back massage: its effect on patients in a rehabilitation setting. *Rehabil Nurs* 26: 182-186.
13. Nahavandy Nejad S (2006) *Scientific Methods in Massage Therapy Education*. Esfahan Medical Science University Publishing, Esfahan, Iran.
14. Golchin M (2005) *Massage Therapy*. Ayandesazan Publishing, Tehran, Iran.
15. Esther M, Chin Pang W (2004) The effects of slow-stroke back massage on anxiety and shoulder pain in elderly stroke patients. *Complementary Ther Clin Pract* 10: 209-216.
16. Shafeie Z, Nourian K, Babae S, Nazari A (2013) Effectiveness of light pressure stroking massage on pain and fatigue of patients after coronary artery bypass graft surgery-A randomized clinical trial. *J Clin Nurs Midwifery* 2: 28-38.
17. Jasvir K, Sukhpal K, Neerja B (2012) Effect of foot massage and reflexology on physiological parameters of critically ill patients. *Nurs Midwif Res J* 8: 223-233.
18. Krupp LB, LaRocca N, Muir-Nash J, Steinberg AD (1989) The fatigue severity scale. Application to patients with multiplesclerosis and systemic lupus erythematosus. *Arch Neurol* 46: 1121-1123.
19. Vickrey BG, Hays RD, Harooni R, Myers LW, Ellison GW (1995) A health-related quality of life measure for multiple Sclerosis. *Qual Life Res* 4: 187-206.
20. Rasooli N, Ahmadi F, Nabavi M, Hajizadeh E (2006) Effect of energy saving technique on the rate of multiple sclerotic fatigue. *J Rehabil* 24: 43-48.
21. Zakeri Moghaddam M, Shaban M, Kazemnezhad A, Tavassoli K (2006) Effect of exercise utilizing the rate of respiratory on fatigue in patient with chronic obstructive pulmonary disease. *Hayat* 3: 17-25.
22. Ghafari S, Ahmadi F, Nabavi M (2008) Effects of applying hydrotherapy on fatigue in multiple sclerosis patients. *J Mazandaran Med Sci Uni* 66: 71-81.

20. Schneider R (2003) Fatigue among caregivers of chronic renal failure patients: A principal components analysis. *Nephrol Nurs J* 30: 629-644.
21. Bonner A (2007) Levels of fatigue in people with ESRD living in far north Queensland. *J Clin Nurs* 17: 90-98.
22. Rick S (1995) *The reflexology workout*. Three rivers press, England.
23. Braun Curtin R, Bultman DC, Thomas-Hawkins C (2002) Hemaodialysis patient's symptom experiences: Effects on physical and mental functioning. *Nephrol Nurs J* 29: 562-574.
24. Schneider RA (2004) Chronic renal failure: assessing the Fatigue Severity Scale for use among caregivers. *J Clin Nurse* 13: 219-225.
25. Weisbord SD, Fried LF, Arnold RM, Fine MJ, Levenson DJ, et al. (2005) Prevalence, severity and importance of physical and emotional symptoms in chronic hemodialysis. *J Am Soc Nephrol* 16: 87-94.
26. EY C, HY L (2005) The relationship of fatigue, self-efficacy, family support and sleep factor in hemodialysis patients. *J Korean Acad Nurs* 17: 435-443.
27. Kim HB, Song GR (2005) Fatigue and related factors in Korean patients on hemodialysis. *Taehan Kanho Hakhoe Chi* 35: 701-708.
28. Liu HE (2006) Fatigue and associated factors in hemodialysis patient in Taiwan. *Res Nurs Health* 29: 40-50.
29. Murtagh FE, Addington-Hall J, Higginson IJ (2007) The prevalence of symptoms in end stage renal disease: A systematic review. *Adv Chronic Kidney Dis* 14: 82-99.
30. Taghizadeh P, Hekmatpou D, Rahzani K, Kazerani H, Rafeie M (2013) Comparing of the effect of reflexive and stroke massages on physiologic indices in patients with MI. *Complement Med J fac Nurs Midwifery* 2: 279-291.
31. Tsay SL, Rong JR, Lin PF (2003) Acupoints massage in improving the quality of sleep and zzquality of life in patients with end-stage renal disease. *J Adv nurs* 42: 134-142.
32. Cassileth BR, Vickers AJ (2004) Massage therapy for symptom control: outcome study at a major cancer center. *J Pain Symptom Manage* 28: 244-249.