

## Effectiveness of warm massage on restless leg syndrome among patients with diabetes mellitus

<sup>1</sup> Charlet Asenth M, <sup>2</sup> Thenmozhi P

<sup>1</sup> P.B.B.Sc (N) II year, Saveetha College of Nursing, Saveetha University, Chennai, India

<sup>2</sup> M.Sc(N), R.N, R.M, Assistant Professor, Saveetha College of Nursing, Saveetha University, Chennai, India

### Abstract

**Background:** Restless leg syndrome symptoms may vary from day to day and in severity and frequency from person to person. Diabetes mellitus is one of the causes for restless leg syndrome. Warm foot massage is one of the home remedial measures which help to relieve symptoms by increasing blood circulation.

**Aim:** The aim of the study is to assess the effectiveness of warm massage in reducing the level of restless leg syndrome among patients with diabetes mellitus.

**Methodology:** The research approach used in the study was a quantitative approach by using true experimental research design with 30 samples by systemic random sampling technique. First 15 samples were considered as the experimental group and remaining 15 samples were considered as the control group. Interview was conducted to collect the demographic variables and followed by the Restless Leg Syndrome severity scale was used to assess the level of restless leg syndrome for both the groups. The experimental group received the warm massage from the foot to knee for 5 days and the control group received the regular treatment. At the end of the 5th day, the level of restless syndrome was assessed for both the groups by using the Restless Leg Syndrome severity rating scale. Collected data were analyzed by using both descriptive and inferential statistics.

**Result:** Paired t test reveals that there is a significant decrease in the level of restless leg syndrome at the level of  $p < 0.05$  in the experimental group. Independent t test reveals that there is a significant difference in the level of restless leg syndrome at the level of  $p < 0.05$  between the experimental group and control group.

**Conclusion:** The findings of the study concluded that there is effectiveness of warm massage in reducing the level of restless leg syndrome among patients with diabetes mellitus.

**Keywords:** Diabetes mellitus, Restless leg syndrome, warm massage, level of RLS

### 1. Introduction

Restless leg syndrome (RLS) otherwise called Willis-Ekbom Disease is a neurological disorder characterized by throbbing, pulling, creeping, or other unpleasant sensations in the legs and an uncontrollable, and sometimes overwhelming, urge to move them. Symptoms occur primarily at night when a person is relaxing or at rest and can increase in severity during the night. Moving the legs relieves the discomfort. It is also often called paresthesias (abnormal sensations) or dysesthesias (unpleasant abnormal sensations), the sensations range in severity from uncomfortable to irritating to painful.

In most cases, the cause of Restless leg syndrome is unknown. However, it may have a genetic component; Restless leg syndrome is often found in families where the onset of symptoms is before age 40. Specific gene variants have been associated with Restless leg syndrome. Evidence indicates that low levels of iron in the brain also may be responsible for Restless leg syndrome.

Restless leg syndrome also appears to be related to the following factors or conditions, although researchers do not yet know if these factors actually cause Restless leg syndrome, chronic diseases such as kidney failure, diabetes, and peripheral neuropathy.

Diabetes is the fastest growing health threat of our times and has become an urgent public health issue. Since 1996, the number of people living with Diabetes has more than doubled thus the need to study on Diabetic patients affected with nerve

problem which causes restless leg syndrome has become the researcher's motive.

Restless leg syndrome is classified as a movement disorder, as individuals are forced to move their legs in order to gain relief from symptoms. More than 80 percent of people with Restless leg syndrome also experience a more common condition known as periodic limb movement of sleep (PLMS). Periodic limb movement of sleep is characterized by involuntary leg twitching or jerking movements during sleep that typically occur every 15 to 40 seconds, sometimes throughout the night. The symptoms cause repeated awakening and severely disrupted sleep. Although many individuals with Restless leg syndrome also develop Periodic limb movement of sleep, most people with Periodic limb movement of sleep do not experience Restless leg syndrome. A classic feature of Restless leg syndrome is that the symptoms are worse at night with a distinct symptom-free period in the early morning, allowing for more refreshing sleep at that time. Other triggering situations are periods of inactivity such as long car trips, sitting in a movie theatre, long-distance flights, immobilization in a cast, or relaxation exercises.

Restless leg syndrome symptoms may vary from day to day and in severity and frequency from person to person. Individuals with mild Restless leg syndrome may have some disruption of sleep onset and minor interference in daytime activities. In moderately severe cases, symptoms occur only once or twice a week but result in significant delay of sleep

onset, with some disruption of daytime function. In severe cases of Restless leg syndrome, the symptoms occur more than twice a week and result in burdensome interruption of sleep and impairment of daytime function.

Certain lifestyle changes and activities that may reduce symptoms in persons with mild to moderate symptoms include decreased use of caffeine, alcohol, and tobacco; supplements to correct deficiencies in iron, folate, and magnesium; changing or maintaining a regular sleep pattern; a program of moderate exercise; and massaging the legs, taking a hot bath, or using a heating pad or ice pack. During clinical and community experience investigator observed that patients who are having restless leg syndrome have suffered for a prolonged period without knowing the cause and treatment.

Hussain 2016 had conducted a study on home remedies for Restless leg syndrome. The result proved instant relief of Restless leg syndrome when massage was given on the sacral region with Vicks in longitudinal and horizontal strokes.

Sayyed Hossein Hashemi *et al.* 2014 had conducted a study on the effectiveness of aromatherapy, some aromatic oils extracted from plants are used through inhalation or accompanying with massage to prevent or treat some discomforting symptoms associated with restless leg syndrome. The findings reveal that there is reduction in the discomforting symptoms such as anxiety, sleep, fatigue and pain.

Warm foot massage is one of the home remedial measures which helps to relieve symptoms by increasing blood circulation. Hence the investigator interested to determine the effectiveness of warm foot massage in reduction in the level of restless leg syndrome among patient with diabetes mellitus

**2. Materials and Methods**

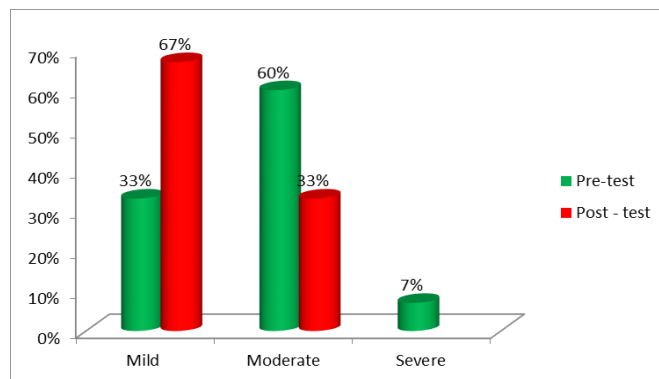
The research approach used in the study was quantitative approach by using true experimental research design. The study was conducted in Vellavedu village after obtaining formal permission from the authority. The samples who met the inclusion criteria were selected by systemic random sampling technique. Diabetic Patients with very severe level of restless leg syndrome, diabetic foot ulcer, peripheral vascular disease and debilitating conditions were excluded. 30 samples were selected. First 15 samples were considered as experimental group and remaining 15 samples were considered as control group. Explained the study in detail and obtained informed consent from the samples. Interview was conducted to collect the demographic variables and followed by restless leg syndrome severity scale was used to assess the level of restless leg syndrome for both the group. Experimental group received the warm massage from the foot to knee for 5 days and control group received the regular treatment. At the end of 5th day level of restless syndrome was assessed for both the group by using the Restless Leg Syndrome severity rating scale. Confidentiality was maintained throughout the procedure. Collected data were analyzed by using both descriptive and inferential statistics.

**3. Results**

In pre-test, in experimental group out of 15 samples 5 (33%) of them had mild, 9 (60%) of them had moderate and 1 (7%) had severe level of Restless leg syndrome. In control group out of 15 samples 5 (33%) of them had mild, 9 (60%) of them had moderate and 1 (7%) had severe level of Restless leg

syndrome. In experimental group the pre-test mean was 13.6 with 17.5 SD and in the control group pretest the mean was 12.8 with 4.3 SD.

In post-test, out of 15 samples 10 (67%) of them had mild, 5 (33%) of them had moderate and none of them had severe level of Restless leg syndrome in control group. In control group out of 15 samples 5 (33%) of them had mild, 9 (60%) of them had moderate and 1 (7%) had severe level of Restless leg syndrome. In experimental group the post-test mean was 9.2 with 4.6 as SD and in the control group post- test the mean was 12.8 with 4.3 as SD.



**Fig 1:** Comparison between the pretest and post test level of restless leg syndrome in experimental group

**Table 1:** Paired t test reveals that there is significant decrease in the level of restless leg syndrome at the level of  $p < 0.05$  in the experimental group.

Experimental group	Mean	SD	Paired t test
Pre - test level of RLS	13.6	17.5	T value -7.41 df- 14 P<0.05 S
Post - test level of RLS	9.2	4.6	

Independent t test reveals that there is significant difference in the level of restless leg syndrome at the level of  $p < 0.05$  between the experimental group and group.

Chi-square test reveals that there is a significant association between the posttest level of Restless leg syndrome with age in years, sex, occupation, type of diabetes mellitus, Duration of illness, Family history of illness, Adherent to medication and dietary pattern are at the level of  $P < 0.05$ .

**4. Conclusion**

Restless leg syndrome is the movement disorder, as individuals are forced to move their legs in order to gain relief from symptoms. The findings suggested that that there is effectiveness of warm massage in reducing the level of symptoms associated with restless leg syndrome among patients with diabetes mellitus. Warm massage is cheap, not expensive, no side effects and can be afforded by all the patients with restless leg syndrome which is not only reduce the restless leg syndrome symptoms and also relive pain, fatigue and promote sleep and quality of life.

**5. References**

1. Raosunder S, Richard J. An introduction to Biostatistics, New Delhi: Hall of India Private limited, 1999.

2. Polit DF, Hungler, BP. Nursing Research Principles and Methods Philadelphia: Jaypee India private limited, 1999.
3. Najmi *et al.* Restless leg Syndrome. International Journal of chronic disease and therapy. 2015; 1(1):1-4.
4. Brunner and Siddarth's. Textbook of Medical Surgical Nursing. 13th edition wolters kluwer health publication, 2014, 1420-1426.
5. Lettieri CJ *et al.* Pneumatic compression devices are an effective therapy for Restless leg syndrome: A prospective, Randomised, Double Blinded, Sham controlled Trial, America. Chest journal, 2009; 135(1):74-80.
6. Elham Sepahvand *et al.* The correlation between restless leg syndrome and sleep disorders among hospitalised patients with acute coronary syndrome Iran. Iran Journal of critical care nursing. 2015; 8(2):95-102.
7. Sayyed Hossein Hashemi *et al.* The effect of massage with lavender oil on Restless Leg Syndrome in Haemodialysis Patients. Nursing and Midwifery Studies. 2015; 4(4):e29617.
8. Mansooreh Aliasgharpour *et al.* Effect of intradialytic Stretching exercise on severity of Symptoms of Restless leg syndrome. Asian journal of sports medicine, 2015; 7(2):e31001  
[https:// en.Wikipedia.org](https://en.Wikipedia.org)