

Effect Of Hand Reflexology Massage On Pain, Fatigue And Sleep Deprivation In Patients Suffering From Rheumatoid Arthritis.

Sunil Kumar Sharma^{1*} Gurjar N. R²

¹PhD Scholar Nims University, Rajasthan Jaipur India.

²Professor & Principal Nims Nursing College Nims University Rajasthan Jaipur India.

*Corresponding Author:- Sunil Kumar Sharma

¹PhD Scholar Nims University, Rajasthan Jaipur India.

DOI:10.47750/pnr.2022.13.S08.599

Abstract

Rheumatoid arthritis is a serious dribbling autoimmune disease that damage joints in symmetrical pattern and if not controlled timely then may lead irreversible disability and then may also damage to the internal organs. Rheumatoid arthritis leads joint pain, stiffness and swelling fatigue and different mental problems such as anxiety, irritation, depression and sleep deprivation.

Objective: The study aimed to assess the effect of hand reflexology massage on pain, fatigue and sleep deprivation in patients suffering from rheumatoid arthritis.

Methods: The study on 20 RA patients at Liberty Hospital in Jaipur used a quasi-experimental research design from March 3, 2022 to March 28, 2022. The participants were selected by a simple random sampling technique and randomly divided into experimental (n = 10) and control (n = 10) groups. Patients in the experimental group participated in hand reflexology massage, while patients in the control group received only routine care The study tools included the Numeric Rating Scale (NRS), the Fatigue Assessment Scale (FAS), and the Pittsburgh Sleep Quality Index (PSQI). Data were analyzed by SPSS 22.0 software using Fisher's exact test, chi-square test, and paired t-test.

Results: The study result findings revealed that there was significant reduction in joint pain, fatigue and sleep deprivation after administration of hand reflexology($p=0.005$)

Conclusion: Hand reflexology can be considered an effective intervention in reducing level of pain, fatigue and sleep deprivation among rheumatoid arthritis.

Key word- hand reflexology, pain, fatigue, sleep deprivation, rheumatoid arthritis.

INTRODUCTION

Rheumatoid arthritis is an autoimmune in which the immune system mistakenly attacks on body's healthy cells thus causing inflammation. The rheumatoid arthritis commonly affects joints in the hands, wrists, and knees and characterized by pain, swelling and stiffness and tenderness in the joints. The estimates of the global prevalence of rheumatoid arthritis (RA) range from 0.24 to 1%.(Hani A et al.,2021).Rheumatoid arthritis (RA) affects about 0.92% of the adult population in India(Arthritis India,2022). The point prevalence of rheumatoid arthritis was 0.4% (0.1-0.6). Both STR and arthritis were more common in women and in the elderly (Joshi VR et al.2021). Pain is the primary sign of rheumatic illnesses. That causes unpleasant feelings in certain people, which ultimately results in depression. In this population, pain also contributes to a feeling of exhaustion. As a result, RA patients frequently have a significant level of fatigue, which is typically linked to both pain and sadness. Studies on people with chronic pain indicated that those with musculoskeletal, neuropathic, and spinal pain, much more frequently experienced moderate and severe sleep quality issues. When RA patients experience more intense pain, simultaneously they feel worse level of fatigue and poor level of sleep (Renata Martinec, R et al.,2019)

Fingers constitute almost half of the entire length of the hand, whereas toes only constitute about one-sixth of the total length of the foot; therefore, reflexes below the shoulder line are compressed and accommodated in a comparatively smaller area in the hand. It is obvious that hand reflexology may produce different results. Scientific evidence has shown that a regular hand massage may help ease pain, increase hand strength, and reduce feelings of stress and anxiety. Hand massage can complement treatments for arthritis. This in mind, researchers sought to determine how hand reflexology affected the reduction of pain, exhaustion, and sleep deprivation in RA patients so that in case it results effective, nurses can be trained to administer the intervention.

Need of the Study

Pain intensity is associated with disease activity in general as study result showed that when mean disease activity increased, there were comparable increases in pain intensity (Ibrahim, F.,et al.,2022). Loss of physical function and

persistent pain are the most serious side effects of rheumatoid arthritis (RA), which may significantly affect a person's life in various ways. Patients with RA report a high prevalence of non-optimal sleep, which is linked to pain level. (Grabovac, I et al.2018). Pain reduces sleep efficiency and poor sleep exaggerates joint pains leading to a vicious cycle(Kumar,A. et al.,2022).Sleep impairment is a common clinical condition in patients with rheumatoid arthritis. There are several confounding factors for poor sleep quality including inflammation, pain, comorbidities, and medications. Consequences of impaired sleep vary within a wide spectrum, as well.(Coskun Benlidayi I.,2018). Most people with rheumatoid arthritis experience fatigue on most days, with over 70% experiencing symptoms similar to chronic fatigue syndrome. The global fatigue index was higher in study subjects, with a mean of 33.16 in contrast with a mean of 14.41 in the controls with a significant p-value(Dar,W.R.,et al.,(2022).RA patients fatigue quantum is related to disease activity.(Singh,H et al.,2021). It is common for people with RA to have a number of physical and mental comorbidities, and it is becoming more and more clear that depression and anxiety are linked to greater disease activity, poorer disease outcomes, and lower quality of life. In order to better treat and rehabilitate people with RA, it is necessary to define a holistic and integrative model that emphasizes pain relief, functional ability improvement, promoting social interaction, and bolstering positive emotional responses. It has been suggested that during reflexology energy circulates in the body through vertical zones from the leg toward the head. Therefore, the application of pressure on a reflective point of an organ can impact all organs, glands, bones, and muscles.

Aim of Study

The study aim to find out the effect of hand reflexology massage on pain, fatigue and sleep deprivation in patients suffering from rheumatoid arthritis.

RESEARCH METHODOLOGY

A quasi-experimental research design was used to conduct the study A total of 20 patients were chosen using a simple random sampling technique, with 10 assigned to each experimental and control group at random. The final tool consists of four sections: Section I: Socio-demographic variables, Section II: The Numeric Pain Rating Scale (NPRS), Section III: Fatigue Assessment Scale (FAS):-is a 10-item scale self-report scale evaluating symptoms of chronic fatigue. Section IV: The Pittsburgh Sleep Quality Index, (PSQI) is a self-rated questionnaire which assesses sleep quality and disturbances over a 1-month time interval .Nineteen individual items generate consists of 7 components .Hand reflexology massage was applied to all the patients in the experimental group 30 minutes for consequence days. Ethical approval was obtained from the Institutional Ethics Committee of Nims University, Rajasthan, Jaipur, via letter number 259 dated April 21, 2022. Permission was obtained from the concerned authority of the Liberty Hospital to conduct the study. Written consent was obtained from the respondents participating in the study. The study objectives and procedures were explained to the patients. Participants in the study were also informed that the given information would be kept confidential and anonymous. Demographic variables in categorical/dichotomous were given in frequencies with their percentages. Quantitate data Difference between pretest and posttest in experimental and control group were calculated by frequencies and percentage. Effectiveness and generalization of study results were calculated with t- test in pretest posttest score in experimental group and comparison between experimental group and control group in post-test.

RESULT

The majority of patients (50%) were between the ages of 50 and 60, with females outnumbering males in both age groups. The majority of patients had low educational status and were vegetarians with average incomes in both groups. The majority of patients in the experimental groups had normal body weights, whereas more than half of the clients in the control group had high body weights. Before intervention, the median and standard deviation of pain levels were 8 and 1. 05 level of significance, and the tabulated value of "t" is 1. The calculated value is higher than the tabulated value, which revealed that the hand reflexology massage reduced the level of pain among the patients suffering from rheumatoid arthritis. Before intervention, the median and standard deviation of fatigue levels were 44 and 1. 05 level of significance, and the tabulated value of "t" is 1. The median and SD of the level of sleep deprivation before intervention are 8 and 0. 05 level of significance, and the tabulated value of "t" is 1. After the intervention, in the experimental group, pain had a mean, median, and standard deviation of 2. 83, respectively While in the control group, pain had a mean, median, and standard deviation of 7.3, 7.

Table 1: Assessment of the pretest posttest level of pain, fatigue and sleep deprivation after implement of hand reflexology massage in experimental group.

S. No.	Aspect	Level	Before intervention		After intervention	
			Frequency	Percentage	Frequency	Percentage
1.	Level of pain	Mild	00	00%	07	70%
		Moderate	02	20%	02	20%
		Severe	08	80%	01	10%
2.	Level of fatigue	Mild	00	00%	10	100%
		Moderate	00	00%	00	00%
		Severe	10	100%	00	00%
3.	Sleep deprivation	Mild	00	00%	10	100%
		Moderate	03	30%	00	00%
		Severe	07	70%	00	00%

Table 2: Assessment of the pretest posttest level of pain, fatigue and sleep deprivation after implement of hand reflexology massage in control group.

S. No.	Aspect	Level	Before intervention		After intervention	
			Frequency	Percentage	Frequency	Percentage
1.	Level of pain	Mild	00	00%	00	00%
		Moderate	03	30%	04	40%
		Severe	07	70%	06	60%
2.	Level of fatigue	Mild	00	00%	00	00%
		Moderate	00	00%	00	00%
		Severe	10	100%	10	100%
3.	Sleep deprivation	Mild	00	00%	00	00%
		Moderate	1	10%	01	10%
		Severe	09	90%	09	90%

Table 3: Assess the effectiveness of hand reflexology massage on level of pain, fatigue and sleep deprivation in experimental group.

S. NO.	Area	Before Intervention			After Intervention			Mean Difference	t Value
		Mean	Median	SD	Mean	Median	SD		
1.	Level of pain	7.9	8	1.57	2.5	3	1.7	5.4	7.86
2.	Level of Fatigue	44.5	44	1.80	14.5	14.5	1.36	30	38.72
3.	Sleep deprivation	8.1	8	0.94	19.9	20	0.83	11.8	25.28

Table – 4: Comparison of level of pain, fatigue and sleep deprivation after implement of hand reflexology massage in experimental group and control group

S. No.	Content	Experimental group			Control group		
		Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
1.	Level of pain	2.5	3	1.7	7.3	7	1.55
2.	Level of fatigue	14.5	14.5	1.36	46	46	2.28
3.	Sleep deprivation	19.9	20	0.83	9.93	9.5	1.1

DISCUSSION

The present study showed that The majority of patients (50%) were between the ages of 50 and 60, with females outnumbering males in both age groups. The majority of patients had low educational status and were vegetarians with average incomes in both groups. The present study's finding on QoL was similar to the results obtained The mean level of pain before intervention was 7. The calculated value of "t" is 7. 05 level of significance, and the tabulated value of "t" is 1. The calculated value is higher than the tabulated value, which revealed that the hand reflexology massage reduced the level of pain among the patients suffering from rheumatoid arthritis. The mean level of fatigue before intervention is 44. The calculated value of "t" is 38. 05 level of significance, and the tabulated value of "t" is 1. The mean of sleep deprivation before intervention is 8. The calculated value of "t" is 25. 05 level of significance, and the tabulated value of "t" is 1. The majority of patients in the experimental groups had normal body weights, whereas more than half of the clients in the control group had high body weights. This is in line with the findings of study conducted by Gamal et al. [26] found that the percentage of illiterates was higher in RA patients. Another study reported that a higher prevalence was observed among the lower socioeconomic status(Ahmed K.M. & Rashid Amen M.,2021). The result was in the line of another study which found that pain and fatigue scores significantly decreased in the aromatherapy massage and reflexology groups. The reflexology intervention started to decrease mean pain and fatigue scores earlier than aromatherapy massage (Zehra Gok Metin & Leyla Ozdemir,2016)

CONCLUSION

The study concludes that hand reflexology had a positive effect on reducing pain, fatigue and improve sleep in rheumatoid arthritis patients. Reflexology should be considered as an additional treatment option for rheumatoid arthritis. Based on the reports, patients reported experiencing positive pain and health improvements during the intervention and the follow-up phase. Both feet and hands reflexology in rheumatoid arthritis patients helped them reduce their pain and improve their quality of life and overall health. .It should be taught to nursing staff as faculty development program. It is advised to conduct more research on how this therapy approach may affect pain and disability over the long run. The hand is one of the main elements of the rehabilitation of patients with rheumatoid arthritis (RA) due to deformities, which occur in approximately 90% of patients.

Conflicts of Interests The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

Funding/Support: There is no funding Source for this study

ACKNOWLEDGEMENT

I wish to express my sincere thanks to all participants for their active participation in the research. Without their cooperation and active involvement, this research would have not be possible. I would also like to show gratitude to Doctor and staff of Liberty hospital who have supported me to bring this study.

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