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RESEARCH ARTICLE

ASSESS THE EFFECTIVENESS OF REFLEXOLOGY ON SYMPTOMS AMONG PATIENT WITH OSTEOARTHRITIS IN SELECTED HOSPITALS, ERODE, TAMILNADU

***Manikandan, V. and Dr. Jasmine, J.**

PhD Scholar, Himalayan University, India

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ABSTRACT

Background: Osteoarthritis is the most common form of arthritis. Osteoarthritis mostly affects cartilage, the hard but slippery tissue that covers the ends of bones where they meet to form a joint Reflexology is an alternative treatment for osteoarthritis..**Objectives:** To assess the level of symptoms among patient with osteoarthritis in control group and experimental before and afterreflexology. **Design:** Quasi-experimental design, where Pretest Posttest Nonequivalent Group designs, **Setting:** Government head quartershospital, Erode, Tamilnadu and Erode Trust Hospital, Erode, Tamilnadu. **Participants:** 30 patients with osteoarthritis, out of which 15 were experimental group and 15 were controlgroup. **Selection criteria:** Patients with osteoarthritis with the age group of 35-55 years and both gender were included. Patients with moderate Pain and those who were willing to participate. **Methods:** Out of 30 patients, 15 patients were selected as experimental group and 15 patients were selected as control group by convenient sampling technique. Experimental group were done with reflexology. Level of symptoms were measured by Osteoarthritis symptomsScalebefore and after the procedure. **Results:** Reflexology is an intervention in reducing the osteoarthritis symptoms, control group mean score was (36.48 ± 1.62), which is 61%, whereas in experimental group the mean score was (21.48 ± 1.62), which is 36%, showing a difference of 25% on the level of the osteoarthritis symptoms. It seems that reflexology was effective in reducing the dysmenorrheal pain and symptoms among adolescentgirls. Reflexology is an intervention in reducing the osteoarthritis symptoms, control group mean score was (36.48 ± 1.62), which is 61%, whereas in experimental group the mean score was (21.48 ± 1.62), which is 36%, showing a difference of 25% on the level of the osteoarthritis symptoms. It seems that reflexology was effective in reducing the dysmenorrheal pain and symptoms among adolescentgirls. The calculated paired 't' value (t= 6.22, t= 13.65) was higher than the table value (t 14 = 2.15,p<0.05). There was a significant reduction in post test the osteoarthritis symptoms score of patients in control group than the post test the osteoarthritis symptoms score of experimental group. The computed 't'value (t= 9.56) was greater than the table value (t 28 = 2. 05p<0.05) There is no significant association between post test the osteoarthritis symptoms score with demographic variables of adolescent girls in control group and experimentalgroup. **Conclusion**: Reflexology is an effective intervention to reduce the symptoms of patients with osteoarthritis. **Clinical applications:** Reflexology can be employed all kind of painful medical and surgical procedures as alternative therapy, instead of using pharmacological interventions.

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INTRODUCTION

OA is a degenerative disease characterized by gradual development of joint pain, stiffness, swelling and limitation of movements. OA causes chronic disability; the degree of disability depends on the site involved and varies greatly between individuals, (Shah SN, Anand MP, 2012). Knee OA is more common in all types of arthritic conditions. A recent WHO report on the worldwide burden of disease indicates that knee OA alone is likely to become the 4th most important cause of disability in women and the 8th in men. Knee OA is much more prevalent in India than in west and accounts as much more disability as any of other chronic conditions. The prevalence is high, especially among the elderly. With the increase in population of elderly it has become the major health problem nowadays, (Arya RK, 2013). Osteoarthritis is multifactorial in aetiology. Both systemic factors (e.g. age, sex, genes) and local factors (e.g. muscle weakness, joint deformity) appear to influence the risk of individual joints developing the disease. The specific aetiological factors are unknown, but may include mechanical overloading, failure of the chondrocyte-controlled internal remodelling system and

****Corresponding Author:*** **Manikandan, V**
Himalayan University, India

extra cartilaginous factors such as synovial or vascular changes. As there is increase burden of disease in India, there is an urgent need and demand of proper health care services in the community to maintain the maximal range of skeletal mobility, to avoid the development of deformities and to improve the quality of life. Keeping in view the greater burden of disease and disability in the form of compromised functions and loss of independence due to knee osteoarthritis, the present study was conducted to know the disease burden in the society, to make the people aware more about this disease, (Reddy SV, 2014). In the group of musculoskeletal diseases, osteoarthritis (OA) is thought to be the most prevalent. The WHO Scientific Group on Rheumatic Diseases estimates that 10% of the world's population who are 60 years or older have significant clinical problems that can be attributed to OA3. Since incidence and prevalence increase with age, longer life expectancy will result in an increase of OA in the future, (D. Pereiray *et al*., 2011).

Need for the Study

Osteoarthritis can have serious effects on a person's life and well being. Current treatment strategies include pain Relieving drugs, a balanced rest and exercise, cost effective symptomatic management interventions, client educations and support programs allow more people with this disorder to lead an active and productive life. Osteoarthritis is most common form of arthritis. It is a low grade inflammatory disease of synovial joints characterized by progressive deterioration and loss of articular cartilage. It affects the entire joint including synovium, meniscus, and periarticular ligament and subchondral bone leading to structural and functional changes. Globally, osteoarthritis comes at eighth place in contribution to disability and OA of knee joint contributes nearly 80% of OA burden. The symptoms are pain in knee, swelling around knee joint, crepitus during active movement and stiffness of the joint. Once the problem starts, the patient will suffer his whole life. In advance stage, patient may present with knee instability or knock knee or bow knee. Most cases of OA have no known etiology and it is mostly related to ageing, which is one of the strongest non-modifiable risk factor for knee osteoarthritis. The Health statistics reportstated that**,** osteoarthritis of knee based on racial categories – 27 % of Caucasian population, 2.1% of American population and 1% of people classified in 'other' racial categories. It was reported that more than 20 million Americans have symptomatic osteoarthritis. Women had higher rates of incidence than men especially after age of 40 years. In the US, osteo arthritis numbers second to Ischemic heart disease as a cause of work disability in men over the age of 50 years. In UK it affects Approximately 2.5% of the populations. In India primary osteoarthritis was more common than secondary osteoarthritis.

Objectives of the Study

- To assess the level of symptoms among patient with osteoarthritis in control group and experimental before and after reflexology.
- To determine the effectiveness of reflexology on symptoms among patient with osteoarthritis in control group and experimental and control group
- To find out the association between post test scores of symptoms among patient with osteoarthritis with selected baseline variables in control and experimental group.

Research Hypotheses

H_1: There is a significant level of symptoms among patient with osteoarthritis in control group than experimental before and after reflexology.

H_2: There is a significant effectiveness of reflexology on symptoms among patient with osteoarthritis in control group and experimental and control group

H_3: There is a significant association between post test scores of symptoms among patient with osteoarthritis with selected baseline variables in control and experimental group.

Delimination

The study is limited to

- Assess the effectiveness of reflexology
- Identify the changes in level of symptoms
- Patient with osteoarthritis
- Selected hospital, Erode

MATERIALS AND METHODS

Quasi experimental design was carried on 30 patients with by using purposive sampling technique. Osteoarthritis symptoms assessment scale was used to assess the osteoarthritis symptomsamong patients. The data was collected after obtaining the permission from concerned personnel of the Hospital.

Population: The population for the present study was the entire patient with osteoarthritis.

Sample: Sample for the present study was patient with osteoarthritis who was admitted in Hospital.

Sample Size: The sample size comprised of 30 patient with osteoarthritis, out of which 15 were experimental group and 15 were control group.

Sampling Technique: Patient with osteoarthritis admitted and present during the period of data collection were selected as samples. The investigator was selected the control and experimental group by purposive sampling technique. The experimental group and control group patient are selected in two different hospitals from 05/03/2018 to 09/05/2018. It is to avoid the contamination of the experimental group with the control group.

Criteria for the Selection of Sample

Inclusion criteria: Osteoarthritis patients,

1. Age group between 35-55 yrs.
2. Both gender
3. Who are having moderate pain
4. who are willing to participate in study.
5. Able to speak or to understand English or Tamil.

Exclusion criteria: Osteoarthritis Patients who are:

- Unconscious or Critically ill.
- Having edema, gangrene, foot ulcers, and unhealed wounds in foot.

- Pregnant or Arthritis in Ankle joint.
- Suffer by Unstable Blood Pressure.
- Having Deep vein thrombosis.

Scoring Procedure: Based on the percentage of scores the levels of osteoarthritis symptoms were graded in four categories. They are "Mild", "Moderate" "severe" and very severe symptoms.

Research analysis: Reflexology is an intervention in reducing the osteoarthritis symptoms, control group mean score was (36.48 ± 1.62), which is 61%, whereas in experimental group the mean score was (21.48 ± 1.62), which is 36%, showing a difference of 25% on the level of the osteoarthritis symptoms. It seems that reflexology was effective in reducing the dysmenorrheal pain and symptoms among adolescent girls. The calculated paired 't' value (t= 6.22, t= 13.65) was higher than the table value (t 14 = 2.15, p<0.05). There was a significant reduction in post test the osteoarthritis symptoms score of patients in control group than the post test the osteoarthritis symptoms score of experimental group. The computed 't' value (t= 9.56) was greater than the table value (t 28 = 2. 05 p<0.05). There is no significant association between post test the osteoarthritis symptoms score with demographic variables of adolescent girls in control group and experimental group. Frequency and percentage distribution of pre & post test scores on osteoarthritis symptoms pain among patients in experimental group (N_1= 15).

Table 3.2. Level of osteoarthritis symptoms

Level of symptoms	Actual Scores	Percentage of Scores
Mild symptoms - only slightly apparent	1 – 15	< 25
Moderate symptoms - aware of symptom, but it doesn't affect daily activity at all	16 – 30	26 - 50
Severe - continuously bothered by Symptoms	31 -45	51 -75
very severe - symptom is overwhelming and /or interferes with daily activity++	46 -60	> 75

Section A

Descriptions Of Demographic Variables Of Patients (N_1 = 15 N_2 = 15)

S. No	Demographic variables	Control group		Experimental group	
		Frequency (N_1 = 15)	Percentage (%)	Frequency (N_2 = 15)	Percentage (%)
1.	Age in Years				
	a. 50 -55 Years	6	40	3	20
	b. 56 -60 Years	7	47	9	60
	c. Above 60 years	2	13	3	20
2.	Gender				
	a. Male	9	60	11	74
	b. Female	6	40	4	26
3.	Education				
	a. No formal education	2	13	3	20
	b. Primary education	8	54	7	48
	c. Secondary education	2	13	3	20
	d. Higher secondary education	3	20	1	6
	e. Graduate and above	0	0	1	6
4.	Occupation				
	a. Sedentary worker	9	60	8	53
	b. Heavy worker	6	40	7	47
	c. Moderate worker				
S. No	Demographic variables	Control group		Experimental group	
		Frequency (N_1 = 15)	Percentage (%)	Frequency (N_2 = 15)	Percentage (%)
5.	Type of knee				
	a. Right knee	11	74	10	67
	b. Left knee	2	13	4	27
	c. Both	2	13	1	6
6.	Duration of illness				
	a. Less than 6 months	9	60	8	53
	b. 1 - 3 Years	6	40	7	47
	c. More than 3 Years	0	0	0	0
7.	Family history of osteoarthritis				
	a. Yes	3	20	4	27
	b. No	12	80	11	73
8.	Practice of home remedies				
	a. Yes	4	27	6	40
	b. No	11	73	9	60

Section B: Assess the level of symptoms among patient with osteoarthritis in control group and experimental before and after reflexology

Frequency and percentage distribution of pre & post test scores on osteoarthritis symptoms among patients in control group (N_1= 15)

Level of osteoarthritis symptoms	Pre test score		Post test score	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Mild	0	0	0	0
Moderate	0	0	0	0
Severe	11	73	13	87
Very severe	4	27	2	13

Level of osteoarthritis symptoms	Pre test score		Post test score	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Mild	0	0	6	40
Moderate	0	0	9	60
Severe	10	67	0	0
Very sever	5	33	0	0

Section C: Determine the effectiveness of reflexology on symptoms among patient with osteoarthritis in control group and experimental and control group

Paired "t" test value of pre and post test scores of control and experimental group

Sl. No.	Areas	't' Value		Table value	Level of Significant
		Control group	Experimental group		
1.	Osteoarthritis symptoms	6.83	10.34	2.15	P<0.05 significant
2.	Osteoarthritis signs	7.65	14. 91	2.15	P<0.05 significant
3.	Total	6.22	13.65	2.15	P<0.05 significant

Df= 14; Table value = 2.15; P<0.05 significant

Table 4.5 Mean, SD, and Mean percentage of control group pre and post test scores on osteoarthritis symptoms

S. No	Areas	Max. scores	Pre test score			Post test score			Difference in Mean (%)
			Mean	SD	Mean (%)	Mean	SD	Mean (%)	
1.	Osteoarthritis symptoms	28	14.85	1.48	53	10.71	1.65	33	20
2	Osteoarthritis signs	32	22.82	1. 10	71	19.34	1.57	60	11
	Total	60	48.98	1.63	81	36.48	1.82	61	20

Unpaired "t" test value of post test scores of control group and experimental group

S. No	Areas	Unpaired 't' value	Table value	Level of significant
1.	Osteoarthritis symptoms	6.34	2.05	P<0.05 significant
2.	Osteoarthritis signs	5.91	2.05	P<0.05 significant
	Total	9.56	2.05	P<0.05 significant

Df28Table value = 2.05P<0.05 significant

Association between post test score and demographic variables of patients reveals that there is no significant association between osteoarthritis symptoms scores when compared to the age, gender, occupation, site of OA problems, duration of illness, family history of OA and practice of home remedies, so accept the null hypothesis in these variables. Whereas there is a significant association with education so reject the null hypothesis in these aspects of demographic variables. Hence it can be concluded that there is significant association between the post test score with the demographic variables of education. Association between post test score and demographic variables of patients reveals that there is no significant association between osteoarthritis symptoms scores when compared to the age, gender, occupation, education, site of OA problems, duration of illness, family history of OA and practice of home remedies, so accept the null hypothesis in these variables. Hence the differences observed in the mean scores values were only by chance and not true difference. It seems that reflexology was effective to all the patients irrespective of their demographic variables.

Conclusion

- Reflexology is an intervention in reducing the osteoarthritis symptoms, control group mean score was (36.48 ± 1.62), which is 61%, whereas in experimental group the mean score was (21.48 ± 1.62), which is 36%, showing a difference of 25% on the level of theosteoarthritis symptoms. It seems that reflexology was effective in reducing the dysmenorrheal pain and symptoms among adolescent girls.
- The calculated paired 't' value (t= 6.22, t= 13.65) was higher than the table value (t 14 = 2.15, p<0.05).
- There was a significant reduction in post test the osteoarthritis symptoms score of patients in control group than the post test the osteoarthritis symptoms score of experimental group. The computed 't' value (t= 9.56) was greater than the table value (t 28 = 2. 05 p<0.05)
- There is no significant association between post test the osteoarthritis symptoms score with demographic variables of adolescent girls in control group and experimental group.

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