



(RESEARCH ARTICLE)



Effectiveness of natural clay therapy on level of pain among women with knee osteoarthritis admitted in selected hospital at Tiruvannamalai

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Abstract

A quasi experimental study was carried out in government medical college and hospital at Tiruvannamalai to evaluate the natural clay therapy on pain among women with knee osteoarthritis (OA). A total 60 samples were selected by using non-probability convenience sampling technique and the sample was equally divided into Experimental Group (30) and Control Group (30). The natural clay was applied 30 minutes per day for seven days to the experimental group and control group received routine care. Data was collected before and after intervention by structured questionnaire containing demographic variables, and intensity of pain was assessed by using visual analog scale. The study results revealed that the pre test mean score of pain in experimental group was 13.53 with S.D 1.19 and control group was 13.17 with S.D 1.15. The calculated unpaired 't' test value $t= 1.19$ was found to be statistically not significant. The post-test mean score of pain in experimental group was 9.12 with S.D 1.18 and control group was 13.93 with S.D 1.14 The calculated unpaired 't' test value $t= 16.05$ was statistically significant at $p<0.001$ level. The study concluded that the natural clay therapy was effective in reduction of pain among women with osteoarthritis in experimental group then the control group. As a natural element it does not show any side effects which is also available and affordable at near reach and improves quality of life of women with knee osteoarthritis.

Keywords: Knee OA; Natural Clay Therapy; Pain; Women.

1 Introduction

Osteoarthritis (OA) is the type of joint disease is results from breakdown of joint cartilage and underlying bone increase with age among women after the menopause (45-55 years). The most common symptoms occur in osteoarthritis are joint pain and stiffness (6). Initially the symptoms may occur only following exercise, but overtime may become constant. Stiffness is most common in the morning typically lasts less than 30 minutes after beginning daily activities, but may return after period of inactivity. The other symptoms may include joint swelling, decreased range of motion and numbness of arms and legs. (3)

Globally, 595 million people had osteoarthritis in 2020, equaling 7.6% of the global population, (1). In Indian impact, nearly 80% of population shows OA among the patient who claimed for knee pain, out of which approximately 20% reported incapability in daily activities and around 11% need peculiar care. In Tamilnadu 43.4% (139 in 320) of elderly study population commonly complaint for joint pain and stiffness. Nearly 60% of population with symptomatic of OA. A rural study of Tamilnadu shows 39% cases of OA, out of which 38% had OA of right knee and 35.5% had OA of left knee. Sex distribution represents 40.8% prevalence in male and 59.2% in female (2).

The complementary approaches to deal with arthritis to treat symptoms like knee pain, stiffness, etc. One of the natural remedies to cure osteoarthritis is clay, which is used as an external application over the joints. The external trace elements in the clay are magnesium, calcium, potassium, zinc, phosphorous, aluminium, silicon, iron, copper, ferrous, cobalt, and molybdenum are vital for our health and wellbeing (8). The trace elements allow clay to hold a great scabbing

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property by regenerating and repairing tissue. It possesses analgesic properties that effectively relieve muscle and joint pain by decongesting the affected area. Clay therapy is proven to have benefits that speed up and reduce the level of pain, and it contains more electrolytes, which help reduce the level of pain among women with Osteoarthritis. It is safe and cost-effective intervention with no side effects.

Objectives

- To assess the pre and post-test level of pain among women with knee osteoarthritis in experimental and control group.
- To compare the pre and post-test level of pain among women with knee osteoarthritis in experimental and control group.
- To compare the pre and post-test level of pain among women with knee osteoarthritis between the experimental and control group.
- To associate the mean difference score level of pain among women with knee osteoarthritis with selected demographic variable in experimental and control group.

1.1 Null Hypothesis

- **NH₁**: There is no significant difference in the pre and post-test level of pain among women with knee osteoarthritis within the experimental and control group at $P < 0.05$ level.
- **NH₂**: There is no significant difference in the pre and post level of pain among women with Knee osteoarthritis between experimental and control group $P < 0.05$ level.
- **NH₃**: There is no significant association of mean difference score level of pain among women with knee osteoarthritis with selected demographic variables in experimental and control group at $p < 0.05$ level.

2 Material and methods

2.1 Research design

The research design adopted for this study was a non-equivalent control group pre and post-test design, which comes under a quasi-experimental design.

2.2 Setting

The study is conducted in medical and ortho unit in government medical college and hospital in Tiruvannamalai.

2.3 Sample size and Sampling Techniques

Convenience sampling technique was used to selected the 60 women with osteoarthritis 30 were assigned to experimental group and 30 to control group.

2.4 Participants

60 women with osteoarthritis who fulfil the inclusive criteria.

2.5 Intervention

The preparation of 150 grammes of natural clay mixed with water and a thin layer of impregnated gauze was applied over the affected knee for 30 minutes once a day for seven days in the experimental group of women. Hospital routine measures were followed for the control group of women.

2.6 Measurements and tool

Level of pain in osteoarthritis was assessed by using visual analog scale in experimental and control group for women with osteoarthritis.

3 Results and discussion

3.1 Major findings of demographic variables are

In experimental group: With regard to age, majority 12 (40%) were between the age group of 51-60 years, and 9(30%) were between the age group of 61-70 years. with regard to menopausal age majority 10(33.3%) were between the age group of 41-50 years, and 13(43.4%) were between the age group of 51-60 years. With regard to type of physical

activity, majority 9(30%) were mild activity, and 10(33.3%) were moderate activity, with regard to dietary pattern majority 25(83.3%) were non vegetarian and 5(16.70%) were vegetarian.

In control group: Regarding age majority 8(26.7%) were between the age group of 41-50 years, and 10(33.3%) were between the age group of >60 years. with regard to menopausal age majority 12(40%) were between the age group of 41-50 years, and 10(33.3%) were between the age group of 51-60 years. with regard to type of physical activity, majority 10(33.3%) were moderate activity, 8(26.7%) were heavy activity, and 8(26.7%) were sedentary activity, with regard to dietary pattern majority 28(93.3%) were non vegetarians. and 2(6.7%) were vegetarian.

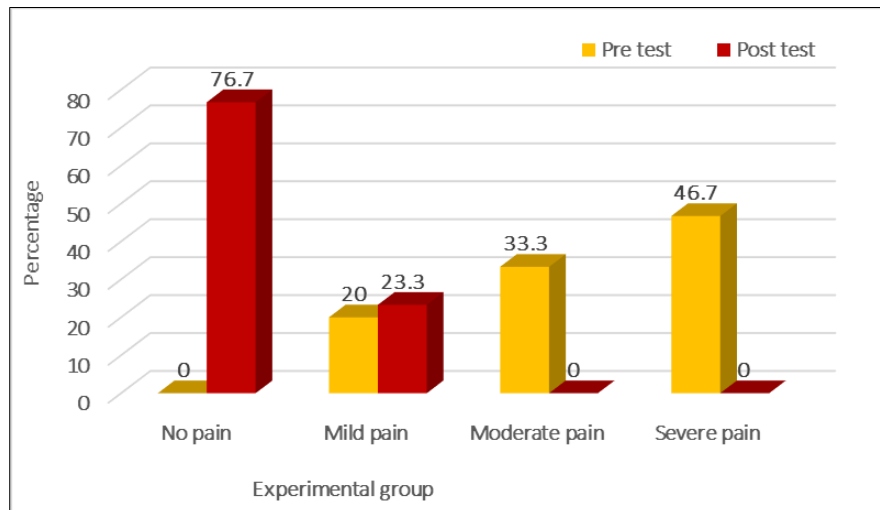


Figure 1 Percentage distribution of pre and post-test level of pain in experimental group.

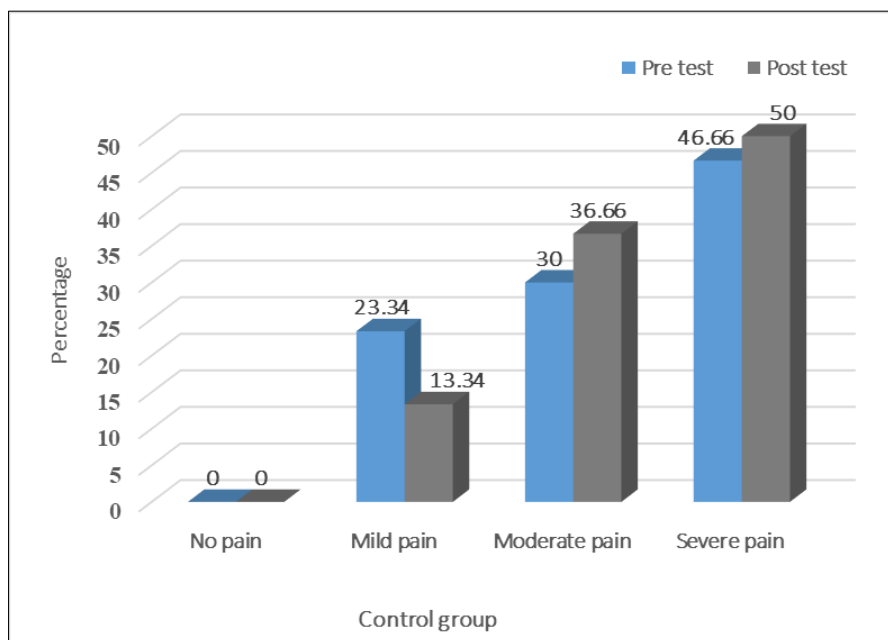


Figure 2 Percentage distribution of pre and post-test level of pain in control group.

3.2 Comparison of pre and post-test level of pain among women with osteoarthritis within the experimental and control group.

The present study revealed that, the pre test mean score of pain was 13.53 with S.D±1.19 and the post-test mean score was 9.12 with S.D±1.18. The calculated paired 't' test is $t=19.42$ ($P=0.0001$) was found to be highly significant at $p<0.001$ level. In control group, the pre test mean score of pain was 13.17 with S.D±1.15 and the post-test mean score was 13.93 with S.D±1.14. The calculated paired 't' test is $t=0.28$ ($P=0.84$) was found to be statistically no significant at $p<0.05$ level. This study results clearly indicates that the natural clay therapy on osteoarthritis had shown a significant reduction in the post-test level of pain among women with osteoarthritis in the experimental group.

These results have been corroborated by the previous findings of the study conducted by Mr. P. Ruban David (2019) A prospective observation study on effectiveness of natural clay therapy on osteoarthritis index and swelling among patients with knee osteoarthritis at selected hospital in Chennai, Natural clay therapy was assessed for two weeks by using tools questionnaire and WOMAC scale. This study result of natural clay therapy improved the impact of pain and stiffness physical functioning and swelling among knee osteoarthritis.

3.3 Comparison of pretest and post-test level of pain among women with osteoarthritis between experimental and control group.

The results of the current study showed that, the pre test mean score of pain in experimental group was 13.53 with $SD\pm 1.19$ and in control group was 13.17 with $SD\pm 1.15$. The calculated unpaired 't' value is $t=1.19$ ($P=0.08$) was found to be statistically non significant at $p<0.05$ whereas the post-test mean score of pain in experimental group was 9.12 with $SD\pm 1.18$ and in Control group was 13.93 with $SD\pm 1.14$. The calculated unpaired 't' value is $t=16.05$ ($P=0.0001$) was found to be statistically highly significant at $p<0.001$ which indicates that there was difference in the post-test level of pain between the experimental and control group.

4 Conclusion

The present study assessed the effectiveness of application natural clay therapy on level of pain among women with knee osteoarthritis admitted at selected hospital in Tiruvannamalai. The study findings revealed that natural clay therapy application administered to the women in the experimental group had significant reduced in their post-test level of pain than the control group. Hence natural clay therapy application can be used as a safe and alternative therapy of women with osteoarthritis. Therefore, application of natural clay therapy is necessary to be provided as an alternative treatment used as a part of nursing intervention in the care of osteoarthritis women are at high risk of getting complications like weakness of the bone.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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