



RESEARCH ARTICLE

THE EFFECTIVENESS OF CAMPHOR OIL APPLICATION ON JOINT PAIN AMONG OLDER ADULTS RESIDING IN SELECTED VILLAGES IN PUDUCHERRY

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ABSTRACT

Background: A Joint is defined as the junction where bones and muscles come together, facilitating movement and stability. Normal joint function is ability to move throughout its range of motion and bear weight. Discomfort in the joints is called joint pain. Sometimes the joint swells and feels warm as well. Joint pain can be a symptom of many ailments. Camphor oil is aromatic and absorbed through the skin. It can be used for various health benefits like pain relief and easing of the skin irritations. Camphor oil is extracted from woods of the camphor tree, it is scientifically called as Cinnamomum Camphor. There are four grades and colours of camphor oil as white, brown, yellow and blue in colour. **Objectives:** 1. To assess the level of joint pain among older adults in experimental and control groups. 2. To evaluate the effectiveness of camphor oil application on joint pain among the experimental and control groups. 3. To associate the pre test and post test level of camphor oil application on joint pain among older adults with their selected socio demographic variable in experimental group. **Methodology:** A Quasi-Experimental research design, two group pre test and post test with control group with purposive sampling was adopted for the study. Sample size was 60 (30 in Experimental group and 30 in Control group) and were selected in Moorthikuppam and Panithittu and the data was analyzed using descriptive and inferential statistics. **Results:** The study findings revealed that post test of experimental group mean score was 2.5333 with standard deviation 0.62881 was higher when comparing to pre test mean score of 3.3333 with standard deviation 0.47946 and it was statistically the post test level of Womac scale was associated with the history of joint pain and it was significant at the level of $p < 0.001$. The study concluded the application of camphor oil was effective to reduce the joint pain among older adults in experimental group when compared to control group. **Conclusion:** Application of camphor oil has many pharmacological properties. It act as antiviral, anti-cancerous, antimicrobial, insecticidal, anticoccidial, antinociceptive and anti-tussive drug. It can be used as skin penetrating enhancer. Camphor gives smoothing and cooling effect, which helps to reduce pain.

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INTRODUCTION

According to the report of the Technical Group on population projections for India and states 2011-2036, there about 138 million elderly people in India in 2021 (67 million males and 71 million females) and is further expected to reach around 56 million elderly people in 2031. State wise data on elderly population of 21 major states divulge that Kerala has the maximum proportion of elderly population (16.5%) followed by Tamil Nadu (13.1%) in 2021. As per 2011 census, regarding the urban and rural areas, 71% of elderly lives in the rural areas while 29% lives in urban areas. The global prevalence of knee osteoarthritis was 16% in people aged 15 and above and was 22.9% in the people aged 40 and above. In 2020 the individual aged 40 and above with knee osteoarthritis is around 654.1 million. The prevalence and incidence in females and males were 1.69 and 1.39 respectively.

Camphor oil is aromatic and absorbed through the skin. It can be used for various health benefits like pain relief and easing of the skin irritations. Camphor oil is extracted from woods of the camphor tree, it is scientifically called as Cinnamomum Camphor. There are four grades and colours of camphor oil as white, brown, yellow and blue in colour. Camphor is a white crystalline solid exist in enantiomeric form R and S camphor. Camphor has many pharmacological properties. It act as antiviral, anti-cancerous, antimicrobial, insecticidal, anticoccidial, antinociceptive and anti-tussive drug. It can be used as skin penetrating enhancer. Camphor gives smoothing and cooling effect, which helps to reduce pain. The reason behind its smoothing effect is camphor act as a counter irritant by activating heat sensitive transient receptor potential vanilloid subtype 1 and transient receptor potential vanilloid subtype 3 receptor and inhibit the transient receptor potential melastatin – subfamily member 8 receptor. Nicole Brown (2010) stated that camphor is an herb that can be extracted from the wood and roof of the camphor tree.

Even though camphor oil has potential harmful effects if it is ingested, benefits can be obtained when it is used topically. Camphor oil is also used as a liniment to relieve pain in muscles or joints. Liniments and creams containing camphor should not be applied to the areas of open wound.

OBJECTIVES OF THE STUDY

- To assess the level of joint pain among older adults in experimental and control groups.
- To evaluate the effectiveness of camphor oil application on joint pain among the experimental and control groups.
- To associate the pre test and post test level of camphor oil application on joint pain among older adults with their selected socio demographic variable in experimental group.

HYPOTHESIS

H1 – There will be a significant difference between the pre-test and post- test level of joint pain among older adults in experimental who receive camphor oil application and control groups.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- Older adults with joint pain and belong to 50-75 years of age
- Older adults who were willing to participate in this study.
- Older adults who were able to speak and understand Tamil.

EXCLUSION CRITERIA

- Older adults who were taking regular analgesics.
- Older adults who were allergic to camphor oil.
- Older adults who were on any other alternative system of medicine and Seizure disorders.
- Older adults who are not available during the time of data collections.
- Older adults who are not willing to participate in this study.

MATERIAL AND METHOD

The study was Quasi Experimental Design (Pre and Post test with control group). Random sampling technique was used to select 60 subjects and the researcher allotted 30 subjects to experimental group and 30 subjects to control group. On the same day the researcher assessed demographic data of each subjects both experimental and control groups. The tool used for the data collection was a WOMAC scale. After obtaining informed consent, data was collected through that standardized tool. After the data was collected both descriptive and inferential statistics were used to analyse the data. The descriptive statistics used were mean, standard deviation, frequency and percentage. Inferential statistics such as chi square was used to find out the association among the demographic variables level of joint pain.

DATA COLLECTION PROCEDURE

The data collection period was one week. The data was collected with standardized Western Ontario and McMaster universities OA index (WOMAC) scale . Pre-test was conducted to know the levels of joint pain by using Western Ontario and McMaster universities OA index (WOMAC) scale for both the study groups. On the first day of data collection the researcher obtained permission. The researcher introduced themselves and explained about the topic and objectives of the study to the subject and obtained informed concerns from all the subjects. Initially researcher screened all the older adults in selected areas of Puducherry by using Western Ontario and McMaster universities OA index (WOMAC) scale. Purposive sampling technique was used to select 60 subjects and the level of joint pain is assessed.

The researcher allotted 30 subjects to experimental group and 30 subjects to control group. On the same day the researcher assess the demographic data of each subject in both the experimental and control group. On the same day of data collection, the researcher administered camphor oil as an intervention to reduce the joint pain by following days. A warm camphor oil is applied on the painful joints of older adults for 10-15 minutes twice a day. A warm camphor oil application of 3ml on the joint and check for any allergic reaction. If allergic reaction is found, then the joint was washed with soap and water, otherwise it is continued for 6 consecutive days from 1st day onwards for 10-15 minutes, twice a day (morning and evening). The same schedule was followed on the following second, third, fourth, fifth and sixth day respectively to the experimental group by administering camphor oil intervention for 10-15 minutes twice a day. On the sixth day, Post-test was done by using Western Ontario and McMaster universities OA index (WOMAC) scale for experimental group and control group respectively.

RESULT AND FINDINGS

The study findings revealed that post test of experimental group mean score was 2.5333 with standard deviation 0.62881 was higher when comparing to pre test mean score of 3.3333 with standard deviation 0.47946 and it was statistically the post test level of WOMAC scale was associated with the history of joint pain and it was significant at the level of p<0.001. The study concluded the application of camphor oil was effective to reduce the joint pain among older adults in experimental group when compared to control group.

Table 1. Comparison of post test level of joint pain among older adults between the experimental and control groups n=60

Group	Variable	Mean	Standard Deviation	Standard Error Mean	P Value
Experimental	Post test	2.53	0.62	0.11	0.001***
Control	Post test	3.33	0.47	0.08	0.57

***significant at P <0.05

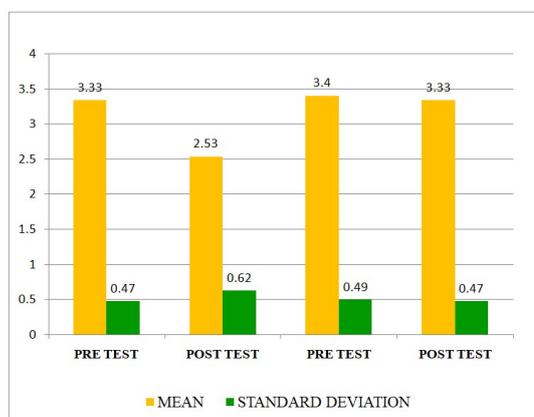


Figure 1. Comparison of Post Test Level of Joint Pain among Older Adults between the Experimental and Control Groups

Table 1 reveals that the post test level of joint pain among the experimental and control groups. The post test mean score of level of joint pain is 2.53 and standard deviation is 0.62 , standard error mean is 0.11 in experimental group, hence its p value is 0.001. The post test mean score of level of joint pain is 3.33 an standard deviation is 0.47, standard error mean is 0.08 in control group and its p value is 0.57. When comparing the experimental and control group, the experimental group is highly significant.

DISCUSSION

The pretest and post test level of joint pain among older adults with joint pain within the experimental group the mean value of pre test of level of joint pain is 3.33, standard deviation is 0.47, standard error mean is 0.087 and the mean value of post test of level of joint pain is

2.53, standard deviation is 0.62, standard error mean is 0.11.hence the p value is highly significant.

CONCLUSION

Ageing, though it is a physiological phenomenon, needs much attention to alleviate Physical and psychological problems of the clients, due to urbanization and industrialization, many of the clients are forced to sedentary lifestyles, and lack of physical activities. The problem of sedentary lifestyle leads to joint pain which can be treated with medications and other herbal therapies .camphor oil help to reduced joint pain for clients to maintain their Physical balance. Drawing the study, the article concludes by arguing for further research to the growing body of evident placing camphor oil at the center of maintenance to reduce the joint pain.

RECOMMENDATION

- Based on the finding of the study the following recommendation has been made for the further study.
- Replication of the study maybe done with large sample .
- Similar study can be done for a longer period to changes in joint pain.
- The same study can be repeated using true experimental design.

ABBREVIATION

OA- Osteoarthritis

PHC- Primary Health Center

WOMAC scale- Western Ontario and McMaster universities OA index scale

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