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Original Research Article

A study to assess the effectiveness of hot water application with epsom salt to reduce knee joint pain the among elderly in selected villages at Madurai district

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ABSTRACT

Background of the Study: The human life cycle has six main stages namely fetus, infant, child, adolescent, adult, and elderly. People continually and gradually age day to day throughout these stages. Old age is the final stage of human existence. The traditional threshold between middle age and old age is sixty. During the period of old age, the elderly face many illnesses and degenerative diseases. Pain is defined as an unwanted sensation that occurs with varying degrees of severity as a result of illness, injury, or emotional disturbance. But pain is more than an unpleasant sensation. Overall 654.1% million individuals with knee Osteoarthritis in 2020 worldwide. According to a similar finding reported in *World Health Organization (2013)* release, India is likely to notice an endemic of Osteoarthritis with 80% of the patients above 65 years population suffering from wear and tear of joints Osteoarthritis. In Tamil Nadu 43.4% of the elderly population had a complaint of joint pains and stiffness.

Aim of the Study: An aim of the study is to reduce the level of knee joint pain among elderly in selected villages at Madurai district.

Materials and Methods: A quasi experimental research using one group pre-test post-test was conducted with simple random sample of 60 elderly. A modified structure questioner on knee joint pain scale was developed by the researcher to assess level of knee joint pain among elderly. Need based awareness programme in kaithirinagar and also ready the pamphlet on knee joint pain which includes definition, causes, signs and symptoms, and management. This tool will take a part in the future health of the elderly.

Result: The Participants or study of the study Maximum 30(50%) belongs to age group of 60-65 Years. The Participants or study of the study include both male and female; Maximum 48(80%) Participants or study are female. In religion, nearly 34(56.66%) of then belongs to Hindu. In this study, Maximum30 (50%) Participants or study have primary education. In occupation, Maximum 22(36.66%) of them was sedentary workers. More than half of the Participants or study 58 (96.66%) have an income below 10,000. Maximum 31 (51.66%) Participants or study were taken treatment 6 months – 1year. Majority 52 (86.66%) Participants or study were mixed vegetarian. Nearly 38 (63.33%) of them taken allopathic. In pre-test, most of them 40 (66.66%) had a severe levels of pain and 20(33.33%) of them had an extreme levels of pain. In the post-test elderly pain, level was reduced that is 47(78.33%) of them had mild levels of pain and 13(21.66%) of them had a moderate levels of pain.

Conclusion: The main study concluded that in pre-assessment, the level of knee joint pain among the elderly is moderate and extreme. So the researcher used hot water application with Epsom salt to reduce post-assessment level of knee joint pain. Many of the elderly reported that after application, they feel reduced pain and feel comfortable during work. Hence the researcher feels that along with intervention to conduct a health awareness programme in kaithirinagar and also ready the pamphlet on knee joint pain which includes definition, causes, signs and symptoms, and management. This tool will take a part in the future health of the elderly.

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1. Introduction

The human life cycle has six main stages namely fetus, infant, child, adolescent, adult, and elderly. People continually and gradually age day to day throughout these stages. Old age is the final stage of human existence. The traditional threshold between middle age and old age is sixty. During the period of old age, the elderly face many illnesses and degenerative diseases. Based on surveys, common diseases occur in that particular period in the cardiovascular, digestive, elimination, and skeletal system. Pain is defined as an unwanted sensation that occurs with varying degrees of severity as a result of illness, injury, or emotional disturbance. But pain is more than an unpleasant sensation. Overall 654.1% million individuals with knee Osteoarthritis in 2020 worldwide. According to a similar finding reported in *World Health Organization (2013)* release, India is likely to notice an endemic of Osteoarthritis with 80% of the patients above 65 years population suffering from wear and tear of joints Osteoarthritis. In Tamil Nadu 43.4% of the elderly population had a complaint of joint pains and stiffness. [1–5]

2. Background of the Study

The global prevalence of knee Osteoarthritis was 16.0% in individuals ages 15 and over and 22.9% in individuals 40 and above. Overall 654.1% million individuals with knee Osteoarthritis in 2020 worldwide. A recent analysis of the global burden of disease 2019 data showed that approximately 1.71 billion people live with musculoskeletal conditions including low back pain, neck pain, and osteoarthritis. Majority of the Participants or study, 80% of them were female and 62.1% belongs to the age group of 60-65 years. A similar finding reported by WHO (2010) worldwide states that Osteoarthritis affects 9.6% of men and 18% of women above the age group of 60 years. In India knee joint pain is the common cause of job related disability and the most common neurological problem. It can be acute, sub-acute (or) chronic in duration. With conservative measures, the symptoms of knee joint pain typically show significant improvement within a few weeks of onset. This prevalence has a 62:38 female vs. male ratio. Tamil Nadu reported 51.1% of the plaintiffs with pain, out of which Knee pain was 18.6% with 15% men. A rural study of Tamil Nadu shows 39% cases of Osteoarthritis, out of which 38% had Osteoarthritis on the right knee and 35.5% had Osteoarthritis on the left knee. The sexual distribution represents 40.8% prevalence in males and 59.2% in female.

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3. Statement of the Problem

A study to assess the effectiveness of hot water application with Epsom salt to reduce knee joint pain the among elderly in selected villages at Madurai district.

4. Objectives

1. To assess the level of knee joint pain among the elderly in selected villages at Madurai district,
2. To evaluate the effectiveness of hot water application with Epsom salt among elderly with knee joint pain.
3. To find the association between, the post-test level of knee joint pain the among elderly with their selected demographic variables.
4. To implement the need based awareness programme on Knee joint pain among the elderly in the selected villages at Madurai district.

4.1. Conceptual framework

The conceptual framework for the present study Widenbach's Helping Art Theory (1964).

5. Materials and Methods

A quasi experimental research using one group pre-test post-test was conducted with simple random Participants or study of 60 elderly. A modified structure questioner on knee joint pain scale was developed by the researcher to assess level of knee joint pain among elderly. Need based awareness programme in kaithirinagar and also ready the pamphlet on knee joint pain which includes definition, causes, signs and symptoms, and management. This tool will take a part in the future health of the elderly. The content validity of the tool was obtained from 7 experts. All experts agreed with the statements with a few suggestions. Reliability was established through test–retest method. The Karl Pearson"s coefficient of correlation was computed and the reliability was found to be 0.96. The tool was found to be reliable. [6]

6. Result

The Participants or study of the study Maximum 30(50%) belongs to age group of 60-65 Years. The Participants or study of the study include both male and female; Maximum 48(80%) Participants or study are female. In religion, nearly 34(56.66%) of then belongs to Hindu. In this study, Maximum30 (50%) Participants or study have primary education. In occupation, Maximum 22(36.66%) of them was sedentary workers. More than half of the Participants or study 58 (96.66%) have an income below 10,000. Maximum 31 (51.66%) Participants or study were taken treatment 6 months – 1year. Majority 52 (86.66%) Participants or study were mixed vegetarian. Nearly 38 (63.33%) of them taken allopathic. In pre-test, most of them 40 (66.66%) had

a severe levels of pain and 20(33.33%) of them had an extreme levels of pain. In the post-test elderly pain, level was reduced that is 47(78.33%) of them had mild levels of pain and 13(21.66%) of them had a moderate levels of pain.

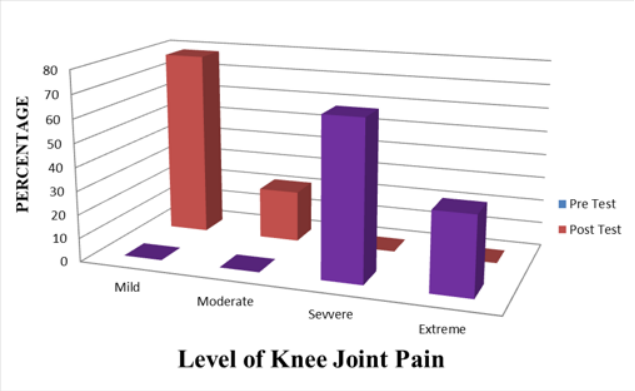

Fig. 1: Distribution of pre-test and post-test levels of knee joint pain among elderly with knee joint pain

Regarding the level of knee joint pain among the elderly before the administration of hot water application with Epsom salt is (Mean=63.41, SD=6.79), and the level of knee joint pain after administration of hot water application with Epsom salt is (Mean=19.76, SD=5.76), the mean score and standard deviation score was decreased after the intervention of hot water application with Epsom salt. The obtained "t" 37.43 value was found to be significant at the level of $p<0.05$. It was observed that administration of the hot water application with Epsom salt for an elderly with knee joint pain had a significant decrease in the post-test level of knee joint pain.[7]

Regarding the association between the post-test levels of knee joint pain with selected demographic variables like age, gender, religion, educational status, occupation, monthly income, treatment for joint pain, diet, and type of treatment. The researcher feels that the level of knee joint pain is not constrained by any of the demographic variables.

Table 1: Comparison of mean scores of pre-test and post-test and' t'value on the level of knee joint pain among elderly. N=60

Level of pain	Mean	SD	Mean difference	t-value	P-Value
Pre test	63.41	6.79	43.65	37.43	2.00
Posttest	19.76	5.76			

*P<0.05

The above table revealed that in pre-test mean score was [63.41±6.79] and the posttest score was [19.76±5.76]. The mean difference was 43.65. The obtained „t" value was 37.43 and which was statistically significant at $p<0.05$

The findings reveal that there is a significant difference between the pre-test and posttest mean scores of the pain scale. Hence the researcher accepts the research hypothesis.

7. Conclusion

The main study concluded that in pre-assessment, the level of knee joint pain among the elderly is moderate and extreme. So the researcher used hot water application with Epsom salt to reduce post-assessment level of knee joint pain. Many of the elderly reported that after application, they feel reduced pain and feel comfortable during work.

Hence, the researcher feels that along with intervention to conduct a health awareness programme in kaithirinagar and also ready the pamphlet on knee joint pain which includes definition, causes, signs and symptoms, and management. This tool will take a part in the future health of the elderly.

7.1. Implication

The results obtained from the present study proclaimed that hot water application with Epsom salt to reduce knee joint pain among the elderly. The study also recommended the following implication in the nursing professional area such as,

7.2. Nursing practice

1. Community health nurse has to plan to conduct the awareness programme in the village regarding knee joint pain.
2. The nurses have a vital role in providing safe and effective nursing care to enhance the reducing knee joint pain among the elderly.

7.3. Nursing education

1. The study will help the nursing students to learn about the effectiveness of hot water application with Epsom salt in reducing pain.
2. Elderly have to update their knowledge regarding the home care management of knee joint pain.

7.4. Nursing administration

1. Nursing administrators provide in-service education to improve their knowledge in various aspects of the detection and management of knee joint pain.
2. Administration in local and state government takes necessary action to develop positive attitudes among the elderly regarding their health.

7.5. Nursing research

1. The findings of the study help to expand the scientific body of professional knowledge upon which further research can be conducted.
2. This study will motivate other researchers to conduct further studies with large and for longer duration.

8. Limitation

1. Time consuming
2. The study was limited to the elders with knee joint pain who were residing in kaithirinagar.
3. Elderly with severe complication like neuropathies, vascular compromise and systemic lupus erythematous, surgeries and knee amputation were not inclusion in this study

9. Recommandations

On the basis of the present study, the following recommendations have been made for further studies

1. The same study can be conducted as a true experimental design.
2. The similar study can be done as a qualitative method of research.
3. Similar study may be replicated using a large sample with might lead to generalization.
4. Same study can be conducted as comparative study between urban and rural elders with knee joint pain.

10. Source of Funding

None

11. Conflict of Interest

The author declare no conflict of interest

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