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## A study to evaluate the effectiveness of Epsom salt fomentation on knee joint pain among older adults in a selected old age home at Namakkal

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### Abstract

The research approach adopted was the quantitative approach. Quasi experimental none randomized control group research design was used in this study to measure the effectiveness of Epsom salt fomentation on knee joint pain among older adults. The selection of samples was done by Non-Probability Purposive Sampling Technique. The sample size was 30 older adults in experimental group and 30 older adults in the control group. Numerical pain rating scale was used to assess the level of pain among the older adults.

**Results:** The analysis reveals that among the older adults in pre-test 16(53.3%) had moderate pain and 14(46.7%) had severe pain. In post-test 17(56.6%) of them had no pain and 13(43.4%) had mild pain. The calculated t value was 23.4 and the p level value with the significance of 0.05 level was 2.05, it was noted that the calculated value is greater than the p level value, there was a highly significant difference between the pre-test and post test score, so the research hypothesis was accepted.

**Keywords:** Effectiveness, Epsom salt fomentation, old age homes, older adults

### Introduction

From the perspectives of biology, old age is inconsistent regarding the demography (conditions of mortality and morbidity), employment and retirement, and sociology. However, old age is commonly seen as being 60 or 65 years of age or older for statistical and public administration purposes. Epsom salt is also known as magnesium sulfate. Despite its name, Epsom salt is a completely different compound than table salt. It was most likely termed "salt" because of its chemical structure. Another common claim is that Epsom salt helps to reduce pain and swelling. Many people report that taking Epsom salt baths improves symptoms of fibromyalgia and arthritis.

### Need for the study

According to The World Health Organization, one year prevalence of knee joint pain was 21.6%. Females (26.3%) were more complained than males (6.1%) it increases as age the International League against Rheumatism. The global incidence prevalence of knee joint pain was 654.1 million in 2020 world-wide. The prevalence and incidence varied substantially between individual countries and increased with age. The ratio of prevalence and incidence in females and males were 1: 69. According to my personal experience when I had been posted in the community area for my completion of requirements, many older people had the complaints of knee joint pain. So, it develops interest to do research on knee joint pain among older adults with Epsom salt fomentation.

### Objectives of the study

- To assess the level of knee joint pain among older adults in both experimental and control group.
- To assess the level of knee joint pain among older adults after Epsom salt fomentation in both experimental and control group.
- To evaluate the effectiveness of Epsom salt fomentation among older adults in experimental and control group.

- To find out association between the post-test level of knee joint pain with their selected Socio Demographic and clinical variables in experimental and control group.

**Materials and Methods**

In this study the investigator selected the Paramarikum karangal old age home at Namakkal district for the study setting. Quasi Experimental Non randomized control group research design is the one adopted by the investigator for the current research study. Purposive sampling was used. The sample size includes sixty older adults with knee joint pain were recruited in the study. The effective sample size was 60, among which 30 were in experimental group and 30 were in control group.

**Description of the tools**

**Section-A**

It has the questions for collection of socio demographic data

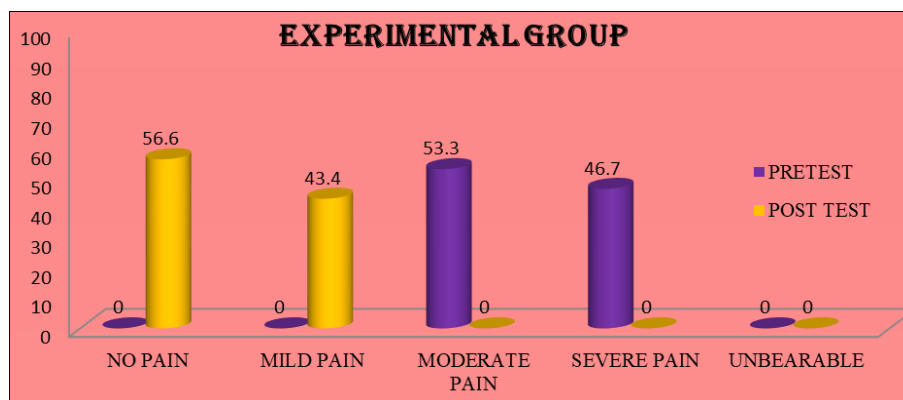
and clinical data. It was developed by the researcher. It had 20 questions with multiple options related to age, education, occupation, monthly income, and marital status, nature of work, dietary pattern, and clinical variables like height, weight, and previous history of illness.

**Section-B**

**Table 1:** Standardized Numerical pain rating scale.

Description	Rate	Score
No pain	0	0
Mild	1-3	1
Moderate	4-6	2
Severe	7-9	3
Unbearable	10	4

**Frequency and percentage distribution of pre-test and post-test level of knee joint pain among older adults in the experimental group**



**Fig 1:** show the frequency and percentage distribution of pre-test and post-test level of knee joint pain among older adults in experimental group, among the older adults in pre-test 16(53.3%) had moderate pain and 14(46.7%) had severe pain. In post-test 17(56.6%) of them had no pain and 13(43.4%) had mild pain

**Table 2:** Comparison of Pre-test and Post-test level of knee joint pain among study participants in Experimental group

Level of knee joint pain	Mean	Standard deviation	Mean difference	Paired t test value	P level	Remarks
Pre - test	2.4	0.5	2	23.4	2.05	Significant
Post - test	0.4	0.48				

The calculated t value was 23.4 and the p level value with the significance of 0.05 level was 2.05, it was noted that the calculated value is greater than the p level value, there was a

highly significant difference between the pre-test and post test score, so the research hypothesis was accepted.

**Table 3:** Comparison of Pre-test and Post-test level of knee joint pain among study participants in control group

Level of knee joint pain	Mean	Standard deviation	Mean difference	Paired t test value	P level	Remarks
Pre - test	2.5	0.5	0.3	2.8	2.05	Significant
Post - test	2.2	0.57				

The calculated t value was 2.8 and the P level value with the significance of 0.05 level was 2.05, it was noted that the calculated value is greater than the p level value, there was a

significant difference between the pre-test and post-test level of pain among older adults in Control group.

**Table 4:** Comparison of post-test level of knee joint among older adults in both experimental and control group

Group	Level of knee joint pain	Mean	Mean difference	Unpaired t test value	P value	Remarks
Experimental group	Pre-test	2.4	2	13.8	2.0	Significant
	Post- test	0.4				
Control group	Pre -test	2.5	0.3			
	Post-test	2.2				

### Association of post-test level of knee joint pain among older adults and demographic and clinical variables in experimental group

There is no significant association between the level of knee joint pain with the variables of Age, Education, Occupation, Nature of job, Monthly family income, Religion, Marital status, Dietary pattern, History of bad habits, Body mass index of the individuals, associated conditions, knee surgeries, type of knee joint pain, duration of knee joint pain, measures to relieve the knee joint pain, duration of exercise per day and there is significant association between the level of knee joint pain with the variable gender.

### Conclusion

The present study was used to evaluate the effectiveness of the Epsom salt fomentation on knee joint pain among older adults. The result revealed that there was a significant difference between the level of knee joint pain among older adults in experimental and control group. The findings infer that the Epsom salt fomentation is effective in reducing the knee joint pain among the older adults. The analysis portrays that the demographic and clinical variables had shown significant association between the post-test level of knee joint pain among older adults in experimental group and control group. The whole, carrying out the present study was really an enriching experience to the investigator. It also helped a great deal explore and improve the knowledge of the researcher and the respondents.

### Results

The present study has got the implications in the field of nursing, nursing administration, nursing research and nursing service. The nurse as a health care provider should be able to make significant contributions to reduce the knee joint pain.

### Recommendations of the study

The study recommends the following for the further research;

The similar study can be conducted with the larger samples for better generalizations. The study is very useful for the common people because the availability of the Epsom salt is cost effective to reduce their illness. So, we can recommend this practise in hospital nursing administration and elaborate the results in community area.

### Conflict of Interest

Not available

### Financial Support

Not available

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#### How to Cite This Article

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