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**A STUDY TO ASSESS THE EFFECTIVENESS OF HOT WATER
APPLICATION WITH EPSOM SALT ON KNEE JOINT PAIN AMONG
GERIATRIC PEOPLE AT SWARG OLD AGE HOME SEVASI,
VADODARA**

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ABSTRACT

Background: Elderly population is over 82 million. Several physiological changes occur when we grow older. people are living Pain is a multi-dimensional phenomenon. Management of knee joint pain includes pharmacological and non-pharmacological Knee joint pain is most seen in geriatric people is leading cause of pain and disability in most countries worldwide. There are few therapy available to reduce and relieve knee joint pain. People with knee discomfort frequently use Epsom salt baths as one such common remedy. It is a cost- effective way for treating knee joint pain, arthritis-related pain, swelling, inflammation, and discomfort. **Aims:** To evaluate the effectiveness of hot water application with Epsom salt among geriatric people. **Materials and Methods:** In present study, researcher adopted quasi-experimental two group pre-test post-test design. It was carried out on 60 samples. The Non-probability consecutive sampling technique was used to select samples for geriatric people with the age above 65 years. 30 gm of Epsom salt with 1 Liter hot water was administered in experimental group. Ethical clearance was taken from Institutional ethics committee. Data analysis was done mainly using descriptive and inferential statistics test. **Result:** The study identified effectiveness of that after

hot water application with Epsom salt in reducing knee joint pain in experimental group. The 't' value shows there is effectiveness of hot water application with Epsom salt to reducing knee joint pain., the H1 is to accept. **Conclusion:** From the result of the study, it was concluded that hot water application with Epsom salt was effective in reducing knee joint pain among geriatric people.

Keywords: Effectiveness, Hot water application with Epsom salt, Knee joint pain, Geriatric people

INTRODUCTION:

Globally, people are living longer. Today, most people may anticipate living into their 60s and beyond. The number of older people and their share of the population are increasing in every nation on earth [1].

Pain is described as an unpleasant feeling that can range in intensity as a result of an accident, illness, or emotional disturbance. However, pain goes beyond just unpleasant feelings. A key element of your neurological system is pain. In the end, pain is a feeling and a physical state. Despite being unpleasant, pain is an essential part of the body's protection mechanism. It is a component of a quick warning and defence relay that gives the central nervous system's motor neurons instructions on how to reduce any physical injury that is sensed [2].

Knee joint pain is a common health issue, with an estimated 25% of adults experiencing knee pain at some point in their lives. The incidence and prevalence of knee joint pain increase with age and are more common in women than men [3].

Nearly 80% patients in India reported knee joint discomfort, and of them, 20% reported being unable to do everyday tasks and 11%

required special care [4].

According to health studies conducted in both industrialized and developing nations, musculoskeletal pain is the most common health issue among the geriatric population. The most common symptoms among geriatric people are knee and low back discomfort. Back discomfort is less frequent among the elderly than knee joint pain [5].

There are few therapy options available to reduce and relieve arthritic pain [6]. People with knee discomfort frequently use epsom salt baths as one such common remedy. It is a cost-effective way for treating joint pain, swelling, inflammation, and discomfort [7]. Epsom salt has been used for many years as a natural cure for a variety of illnesses and has a wide range of uses in the home, garden, and beauty industry [8]. The use of Epsom salt to hot water is a very traditional cure the inflammation that works well. Because it was discovered in an English town called "Epsom" in England, a scientist named "Epsom salt" in his honour [9].

The specific alternative treatment alternatives that a patient might choose from, A bath with Epsom salts works well

as an alternate treatment. Warm water combined with epsom salts, which have potent anti-inflammatory qualities and a high sulphate and magnesium content, can effectively reduce knee arthritis-related pain and inflammation. To relieve minor aches and pains, epsom salt can instantly relieve joint discomfort [10]. It is important for Adequate muscle protein Healthy joints, digestive tract function and detoxification within the pancreas. Combining these lists, it becomes clear why some people think Epsom salt baths could be advantageous [11].

MATERIALS AND METHODS

The Quantitative Research approach is used for this study. The research design chosen for this study is Quasi -Experimental Research Design. The study was conducted in Swarg old age home, Sevasi, Vadodara, Gujarat. Source of data for this study are geriatric people with knee joint pain residing in selected old age home. The sample size constitutes 60 geriatric people, from selected old age home. Samples was identified by Non probability Consecutive sampling technique. Geriatric people, who were willing to give consent, who were available at the time of data collection, and people who have joint pain, people with Age 65 years and above were included in the following study. Geriatric people, who are Unwilling to participate in the study, and geriatric people with other critical

illness, skin disease, burns, fracture or Hypermagnesemia were excluded from the following study. The Tool is prepared by the investigator for Demographic data collection and standardized numerical rating scale is used to assess the level knee joint pain after the guidance of Experts. Tool consists two sections. Section 1: Demographic Data of the geriatric people. This section includes socio demographic variables of geriatric people above 65 year such as Age, Gender, Educational stratus, Prior occupational status, Type of family, Monthly Family income, Dietary pattern, Exercise, Joint pain duration, do you take any pain killers for knee joint pain? Section 2: Numerical Rating Scale. This Section include Standardized Numerical Pain Rating scale which is first used by Freyd in 1923 in psychology to assess the level of knee joint pain among geriatric people. The researcher got permission from principal and research ethical committee of Sumandeep nursing College. Formal permission has been obtained from obtained from trusty of at Swarg, old age home, Sevasi, Vadodara, and participants was selected based on the criteria of sample selection. Data collection period was 12 days. The investigator had collected the data for seven days in a week from 09:00 am to 5:00 pm. The investigator selected 60 samples based on the inclusive and exclusive criteria out of which 30 samples

were in experimental group 30 were in control group by using Non probability Consecutive sampling techniques. Per day 30 samples were taken for the study. From which equal distribution was done in experimental group and control group. During the data collection procedure, the investigator was introduced her to the geriatric people. Participants inform consent was taken from the participants. They were assured that no physical or emotional harm would be done during the study. Data pertaining to the socio-demographic variables were collected by interview method. The pre-test was conduct for 10-15 min. Establish and maintain a trust worthy relationship with a client, explain the benefits of hot water application with Epsom salt liker reduce pain level, do preliminary assessment Assess the pain level. The investigator had used numerical pain rating scale for assessing geriatric people's knee joint pain before applying intervention, The scale is most anchored by "no pain" and "severe pain" on 10 cm line and the geriatric people was asked to place a line at the point that represented their pain intensity in both experimental and control group.

For the samples in experimental group, hot water (114°F) as according to client's tolerance was used with addition of 30 gm of Epsom salt in 1-liter hot water after dissolving well in hot water, take a clean

wash cloth, deep it in hot water and after squeezing the excess water from the clean cloth, provide hot water compression to the client in comfortable position either sitting or supine position. Use the water for 10-15 min, this procedure was constantly applied for 10 days. After applying this intervention for 10 days post test was conducted to assess the pain level among geriatric people.

After conducting pre-test in control group no intervention was given directly post-test was conducted after 10 days of pre-test.

RESULTS:

level of knee joint pain before and after intervention among geriatric people with knee joint pain. In experimental group, there were during pre-test majority 15(50%) geriatric people had severe pain, 11(36.6%) geriatric people with moderate pain, and 4(13.3%) geriatric people had mild pain while in post-test maximum 21(70%) geriatric people had mild pain and 9(30%) geriatric people had moderate pain.

In control group, there were during pre-test majority 15(50%) geriatric people had moderate pain, 13(43.3%) geriatric people had severe pain and 2 (6.6%) geriatric people had mild pain. where as in post-test majority 17(56.7%) had moderate pain and 13(43.3%) had severe pain.

Table 1 depicts the level of knee joint pain before and after intervention among geriatric people with knee joint pain.

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Table 2 depicts the effectiveness of hot water application with Epsom salt on knee joint pain among geriatric people which was tested by using Paired 't' test. Findings reveals that in experimental group mean pre-test pain score was 6.70 with SD 1.39 and mean post-test pain score was 3.43 with SD 1.38 and mean difference was 3.27 with obtained 't' value of 5.588 which is statistically significant at $p < 0.05$ level.

In control group mean pre-test pain score was 6.57 with SD 1.54 and mean post-test pain score 6.23 with SD 1.43 and mean difference was 0.33 with obtained 't' value of 0.854 which is statistically non-significant is $p > 0.05$.

Table 3 depicts the comparison of knee joint pain among geriatric people in experimental group and control group before and after intervention which was tested by using unpaired 't' test. Regarding knee joint pain during pre-test in experimental group mean pain score was 6.70 with SD 1.39 and in control group mean score was 6.57 with 1.54 and mean difference was 0.13 with obtained 't' value 0.351 at $p > 0.05$ which is statistically non-significant.

Regarding knee joint pain during post-test in experimental group mean pain score was 3.43 with SD 1.38 and in control group was 6.23 with SD 1.43 and mean difference was 2.80 with obtained 't' value 5.710 which is statistically significant $p < 0.05$.

Table 1: Pre-test and post-test level of pain score among geriatric people in experimental group and control group (N=60)

Level of pain	Experimental group (n=30)				Control group (n=30)			
	Pre-test		Post-test		Pre-test		Post-test	
	F	%	F	%	F	%	F	%
No pain	0	00%	0	00%	0	00%	0	00%
Mild pain	4	13.3%	21	70%	2	6.6%	0	0
Moderate pain	11	36.6%	9	30%	15	50%	17	56.6%
Severe pain	15	50%	0	00%	13	43.3%	13	43.3%

Table 2: Effectiveness of hot water application with Epsom salt on knee joint pain among geriatric people (N=60)

Comparison of knee joint Pain		Mean	SD	Mean Difference	't' value	df	p value
Experimental group (n=30)	Pre-test	6.70	1.39	3.27	5.588	29	0.001*
	Post-test	3.43	1.38				
Control Group (n=30)	Pre-test	6.57	1.54	0.33	0.854	29	0.400 ^{NS}
	Post-test	6.23	1.43				

*P<0.05 level of significance; NS-Non significance

Table 3: Comparison of knee joint pain among geriatric people in experimental group and control group before and after intervention (N=60)

Comparison Post-test	Experimental group		Control group		Mean Difference	't' value	df	p value
	Mean	SD	Mean	SD				
Pre-test	6.70	1.39	6.57±1.54	1.54	0.13	0.351	58	0.727 ^{NS}
Post-test	3.43	1.38	6.23±1.43	1.43	2.80	5.710	58	0.001*

*P<0.05 level of significance; NS-Non significance

DISCUSSION

In this study a quantitative research approach with quasi experimental research design was used. Data was collected from 60 geriatric people with knee joint pain at swarg old age home, Sevasi, Vadodara, Gujarat. Consent form was signed by each participant before conducting the study. The tool was prepared by the investigator's guidance of experts. The tool consists of two sections. The demographic tool includes socio demographic variables of geriatric people above 65 year such as Age, Gender, Educational status, Prior occupational status, Type of family, Monthly Family income, Dietary pattern, Exercise, Joint pain duration, do you take any pain killers for knee joint pain? etc. The standardized numerical rating scale is used to assess the level of knee joint pain of geriatric people. The standardized numerical rating scale is including four categories like 0 - No pain, 1-3 Mild pain, 4-6 moderate pain and 7-10 Severe pain. The

statistical chi square test was used to find out the association between the post-test level of knee joint pain with selected demographic variables. Tables were used to represent the demographic characteristics, and level of knee joint pain. The result of the analysis shows that the findings related to in experimental group, there were during pre-test majority 15(50%) geriatric people had severe pain, 11(36.6%) geriatric people had moderate pain. In control group, there were during pre-test majority 15(50%) geriatric people had moderate pain, 13(43.3%) geriatric people had severe pain. whereas, in post-test maximum 21(70%) geriatric people had mild pain and 9(30%) geriatric people had moderate pain. where as in post-test majority 17(56.7%) had moderate pain and 13(43.3%) had severe pain. The overall findings related to pain revealed that the percentage of post-test level of knee joint pain score was less than the pre-test level of knee joint Pain. Hence it indicates that the hot water

application with Epsom salt was effective in reducing knee joint pain of geriatric people. effectiveness of hot water application with Epsom salt on knee joint pain among geriatric people which was tested by using Paired 't' test. Findings reveals that in experimental group mean pre- test pain score was 6.70 with SD 1.39 and mean post-test pain score was 3.43 with SD 1.38 and mean difference was 3.27 with obtained 't' value of 5.588 which is statistically significant at $p < 0.05$ level. In control group mean pre-test pain score was 6.57 with SD 1.54 and mean post- test pain score 6.23 with SD 1.43 and mean difference was 0.33 with obtained 't' value of 0.854 which is statistically non-significant is $p > 0.05$. Hence, H_1 There is a statically significant difference on level of knee joint pain among geriatric people before and after implementation of hot water application with Epsom salt is accepted. The statistical chi square test was used to find out the association between post-test level of knee joint pain with the demographic variables in the experimental group and control group Tables were used to represent the demographic variables The result of the analysis shows that the, demographic variables were not significant association (as the $p > 0.05$) with post-test level of knee joint pain score among geriatric people in the experimental and

control group, hence (H_2) is hypotheses are rejected. (H_0) is accepted.

CONCLUSION

This study presents the conclusion drawn, implication, limitation and recommendation of the present study, the focus of this study was to assess Effectiveness of hot water application with Epsom salt among geriatric people with knee joint pain. study undertaken to assess the effectiveness of hot water application with Epsom salt on knee joint pain among geriatric Samples was selected by Non probability Consecutive sampling techniques. The size of sample 60 and selection sample was done according to inclusion criteria and exclusion criteria. In the analysis used both descriptive and inferential statistics.

Conflict of Intrest:

The authors declare that there is no any conflict of interest.

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