

The Effectiveness of Hot Fomentation with Epsom Salt Versus Common Salt on Knee Joint Pain among Elderly in the Selected Old Age Home of Pune City

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Abstract

Background & Objective: Aging is a multidimensional process of change in the physical, psychological and social. In India Osteoarthritis 2nd most cause of knee joint pain with the prevalence of 22 to 39%. Our aim was to assess the effectiveness of hot fomentation with Epsom salt versus Common salt on knee joint pain among elderly

Methods: A Quasi Experimental, Non- randomized one group pre-test post-test control group design was adopted involving 40 elderly who have knee joint pain. After obtaining informed consent elderly were allocated into two groups of 20 each by using the Non-probability purposive sampling technique. Hot fomentation (100 ml of water at the temperature of 30-40 degree Celsius) with 2gm of Epsom salt for the experimental group and common salt for the attention control group for 5 days once a day. Global pain scale was used to assess the level of pain.

Results: The significant change was observed in Pain level as evident that the t-value is 26.29, p-value of Epsom is 0.00001 that is less than 0.05 and the t-value is -21.03, p-value of Common salt is 0.0001 that is less than 0.05, both the interventions were effective but Epsom salt is more effective than common salt on knee joint pain. Hence, null hypothesis (H_0) was rejected. None of the demographic variables are found to have significant association with the level of knee joint pain.

Conclusion: The effectiveness of hot fomentation with Epsom salt is higher than the common salt so null hypothesis is rejected.

Key words: Hot fomentation, Epsom Salt, common Salt, knee joint pain, elderly.

Introduction or Background

Each multicellular organism is able to develop and maintain its identity using energy from the sun for so long. That's why deterioration prevails over synthesis, and the age of organism. Aging is a natural process. In elderly age blurred vision, joint pain, back pain, skin changes, low immunity are the common problems.

Knee joint pain is the very common in elderly person. Knee joint pain is usually present with structural changes morning stiffness, instability, unable to walk, bony enlargement, unable to use stairs and restricted movement.^[1] WHO report (2010) worldwide, Osteoarthritis affect 9.6% men and 18% of women the age of 60 or above and the condition will be 4th leading

cause of disability by 2020.

Majority of the cases the condition can be prevented by a proper lifestyle and food habits.^[2] Arthritis knee pain relief with Epsom salt baths is a popular topic that is often brought up amongst people with pain in their knees.^[3] There are other home remedies for knee joint pain is soaking in warm water with Common salt are one of the oldest forms of alternative therapy, and there's good reason why this practice has stood the test of time.

The findings shows that it makes the joints looser. It reduces pain and prolonged effect that goes beyond the period of immersion. Not only does heat relax muscles, it also stimulates blood flow and improves circulation, helps increases range of motion, and reduces stiffness in

painful joints. ^{14]}

Applying the heat by general or local which produce the physiological change in the body causing vasodilatation and relaxation of muscles which relieves the pain.

Material and Methods

A Quantitative approached with Quasi Experimental Non- randomized one group pre-test post-test control group design was found to be the most appropriate. This study was conducted in the selected old age home of Pune city. Total 40 elderly who met the inclusion criteria were selected by using the Non-probability purposive

sampling technique. The samples were allocated into two groups with 20 each for the experimental and attention control group. Hot fomentation (100 ml of water at the temperature of 30-40 degree Celsius) with 2gm of Epsom salt for the experimental group and common salt for the attention control group for 5 days once a day. Global pain scale was used to assess the level of pain.

Results

The analysis and interpretation of the data collected to determine the effectiveness of hot fomentation with Epsom salt versus Common salt on knee joint pain is carried out based on objectives set by the researcher taking the level of significance as 0.05.

Table 1: Descriptive statistics of effectiveness of hot fomentation with Epsom salt on knee joint pain among elderly.

n=20

Pain level		Frequency		Percentage		Calculated t- value	p-value
		Pre-test	Post-test	Pre-test	Post-test		
Mild (0-70)	n=20	1	9	5	45	26.29	0.00001
Moderate (71-140)		19	11	95	55		
Severe (141-210)		0	0	0	0		
		Pre-test		Post-test			
Mean		119		99.15			
SD		1.41		4.95			

The above table provides data about the effectiveness of application of hot water with Epsom salt on knee joint pain among the elderly. The mean pain level was from 119(pre-test) to 99.15(post-test) with SD from 1.41(pre-test) to 4.95(post-test). As the calculated t-value is 26.29 and p-value= 0.00001, where p<0.05, Significant at 0.05 level of significance. Hence, statistically there is effectiveness of hot fomentation with Epsom salt on knee joint pain.

Table 2: Descriptive statistics of effectiveness of hot fomentation with common salt on knee joint pain among elderly. n=20

Pain level	n=20	Frequency		Percentage		Calculated t-value	p-value
		Pre-test	Post-test	Pre-test	Post-test		
Mild (0-70)		0	0	0	0	-21.03	0.0001
Moderate (71-140)		11	20	55	100		
Severe (141-210)		9	0	45	0		
		Pre-test		Post-test			
Mean		137.4		115			
SD		9.90		2.83			

The above table provides data about the effectiveness of application of hot water with common salt on knee joint pain among the elderly. The mean pain level was from 137.4(pre-test) to 115(post-test) with SD from 9.90(pre-test) to 2.83(post-test). As the calculated t-value is -21.03 and p-value= 0.00001, where p<0.05, Significant at 0.05 level of significance. Hence, statistically there is effectiveness of hot fomentation with common salt on knee joint pain.

Figure 1: Comparison of Effectiveness of Hot Fomentation with Epsom Salt And Common Salt On Knee Joint Pain. n=40

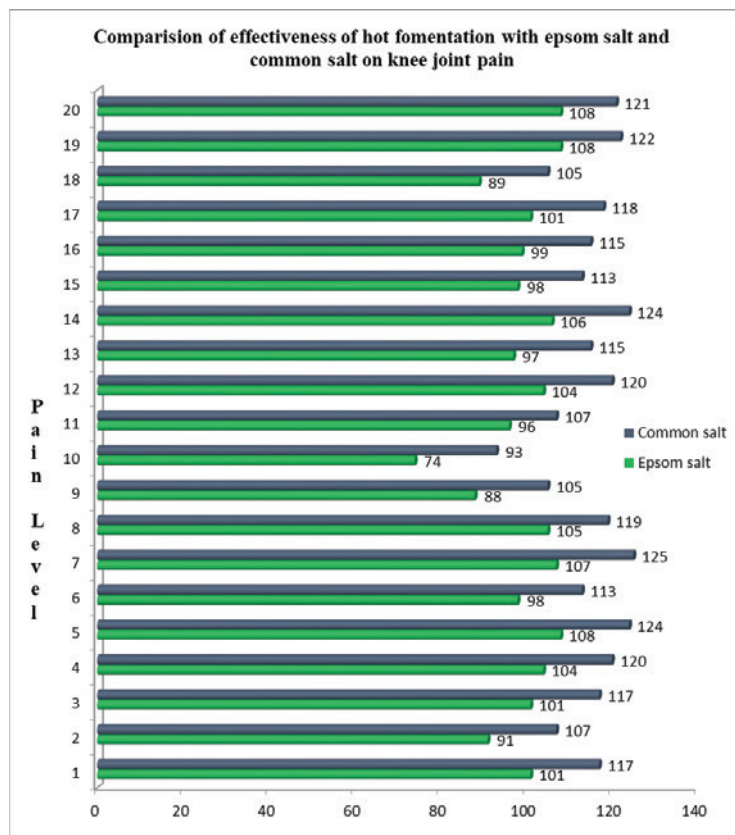


Figure 1: Bar diagram showing comparison of effectiveness of hot fomentation with Epsom salt and Common salt on knee joint pain

The figure above represents the comparison between the effectiveness of hot fomentation with Epsom salt and common salt. Figure shows that pre-test son the level of knee joint pain.

The significant change was observed in Pain level as evident that the t-value is 26.29, p-value of Epsom is 0.00001 that is less than 0.05 and the t-value is -21.03, p-value of Common salt is 0.0001 that is less than 0.05, both the interventions were effective but Epsom salt is more effective than common salt on knee joint pain. Hence H_0 was rejected.

Conclusion

The findings of the study shows that there significant difference between the score of the experimental attention control group. Therefore, hot fomentation with Epsom salt brought out to be significant.

Conflict of Interest – Nil

Source Of Funding – Self

Code of Conduct – No ethical issue was there in the study

Ethical Clearance – Obtained from Institutional Research Committee

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