‘‘A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM COMPRESS WITH EPSOM SALT IN REDUCING JOINT PAIN AMONG ELDERLY AT SELECTED COMMUNITY AREAS, HYDERABAD, TELANGANA’’.

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Abstract: A Quasi - experimental study was undertaken to ‘‘Evaluate the effectiveness of warm compress with Epsom salt in reducing joint pain among elderly at selected community areas, Hyderabad, Telangana’’. In this study a quantitative approach and non randomized control group design was adopted. 60 elderly persons with joint pain were selected using non probability convenient sampling technique at Turkayamjal, Hyderabad, Telangana. Numerical pain rating scale was used to assess the level of pain among elderly people. The results of the study revealed that in pre-test in the experimental group 3.3% of the elderly people are having mild pain,13.3% of the elderly people are having moderate pain, 60% of the elderly people are having severe pain and 23.3% of the elderly people are having worst pain where as in the post test 53.3% of the elderly people are having no pain, 26.7% are having mild pain and 20.0% of the elderly people are having moderate pain. In the control group, pre test shows that 23.3% of the elderly people are having moderate pain, 60 % of the elderly people are having severe pain, 16.6 % of the elderly people are having worst pain. In the post test 3.3% of the elderly people are having no pain, 3.3% of the elderly people are having mild pain, 26.6% of the elderly people are having severe pain and 66.6% of the elderly people are having worst pain. The post test mean scores were increased from 2.9 to 3.5, The calculated ‘‘t’’ value was 3.0. The table value was lower than calculated ‘‘ t’’ value. The findings in the experimental group reveals that in post-test pain scores were decreased from 3.03 to 0.66 After administration of warm compress with Epsom salt the calculated ‘‘t’’ value was 21.0 which was greater than calculated ‘‘t’’ value. There was a significant difference between the level of pain scores of elderly people with joint pain before and after the application of warm compress with Epsom salt . Hence Hypothesis [H_1] was accepted.

Key words : Effectiveness, Epsom salt, Warm compress, Joint pain

1. Introduction

Ageing is a natural process of living organisms. Common health problem among elderly population is musculo skeletal pain based on the health surveys undertaken in both developed and developing countries. Joint pain is discomfort in a joint. Sometimes the joint swells and feels warm as well. The most common cause of joint pain among elderly people is due to advanced age and loss of mineral density from the bones. Joint pain can be mild, causing soreness only after certain activities or it can be severe making even small movements very painful. Joint pain is a chronic, progressive process in which new tissue is produced in response to joint and cartilage detoriation. The most common pain for the elderly people is joint pain and it occurs more commonly in women than in men. It accounts for substantial disability as a result of its effect on the large weight bearing joints and the spine. Joints are the location where articulation of bones takes place. Many joints allow for movement between the bones. Symptoms of joint pain include swelling, stiffness or enlarged, numbness, loss of motion , difficulty in bending or straightening the joint.

Need for the study

According to National survey (2019) reported that elderly population is over 82 million. A number of physiological changes occur when we grow older. Globally, Prevalence cases of joint pain increased from 247.51 million in 1990 to 527.81 million in 2019. More than 150 million people have reported joint pain globally, 2021. According to the United Nations, it has been estimated that by 2050 , 350 million people will suffer from joint pain worldwide, of whom 40 million will be severely disabled. In India, it is affecting more than 15 million elderly annually. Around 23.46 million elderly in india had joint pain in 2019; this increased to 62.35 million in 2022. The age-standardised prevalence of joint pain increased from 4,895 in 2019to 5,313 in 2022, per 100,000 persons. Making proper healthcare services available to them is prior importance for the country.

2. Review of Literature

Ms.Rosaline lilly.et.al.,(2021), a descriptive methodology survey approach and convenient sampling technique was used for 100 elderly people in selected community in dehradun. Data were collected with structured questionnaire which consists of 50 questions regarding demographic characteristics, knowledge regarding joint pain. Data analysis was done using descriptive statistics as percentage to assess the knowledge among the elderly in community. The results showed that 5% of the elderly had adequate knowledge, 40 % of the elderly had moderate knowledge, 55% of the elderly people had inadequate

knowledge. The booklets were distributed among elderly to improve their knowledge. The study concluded that elderly people having lack of knowledge regarding joint.

R.Madaswamy.et.al.,(2022), a pre experimental research design one group pre test and one group post test was conducted at Chennai, and by using purposive sampling technique 100 samples were taken with joint pain residing at selected area. The tool consists of two sections like demographic variables and pain rating scale to measure the level of joint pain. Descriptive and inferential statistics were used for data analysis. The pre test data revealed that 47% were had severe pain ,51% were had moderate pain, 2% were had mild pain. The post-test data revealed that 81% were had no pain, 19% were had mild pain and none of them had moderate and severe pain. The finding reveals that pre-test mean and standard deviation score of joint pain was 9.08+_2.61. The post-test mean and standard deviation score of joint pain was 18.49+_2.53. The calculated paired t value is t=0.000. It was found to be statistically significant at p=<0.005 level. It indicates that the hot water application with Epsom salt was significantly effective to improve the level of joint pain among elderly.

S.Anuradha.et.al.,(2021), a quasi experimental research design was conducted at Arunodaya Vruddashram in Andhra Pradesh. The sample consists of 60 elderly residing in old age home and convenience sampling technique was used. The pain level was checked using the osteoarthritis pain rating scale. For experimental group, interventions were given twice a day for 10 days, and the control group followed their routine care. Results showed that in the experimental group SD was 0.57,chi square value was 0.44, had 73% reduction in pain level as compared to the control group. It was concluded that warm compress of Epsom salt is highly effective in reducing joint pain among elderly.

3. Objectives of the study

1. To assess the level of joint pain among elderly people in the experimental group and control group by using numerical pain rating scale.
2. To evaluate the effectiveness of warm compress with Epsom salt in reducing joint pain among elderly people in experimental group.
3. To find the association between the post test level of pain scores among elderly people along with their selected demographic variables in experimental group.

4. Methodology

Quantitative research approach and Quasi experimental Non randomized control group design was used in this study.

Population : Elderly persons with joint pain at selected Community areas, Hyderabad

Sample : Elderly persons with joint pain aged > 60 years

Sample size : 60 (30 experimental group; 30 control group)

Sampling technique : Non probability convenient sampling technique

Hypothesis

H1: There will be a significant difference between the pre-test and post-test pain scores among elderly people with joint pain in the experimental group and control group.

H2: There will be a significant association between the post-test pain scores along with their selected demographic variables such as age, gender, education, occupation, diet, monthly income in experimental group.

Variables of the study

Dependent variable : Joint pain

Independent variable : Epsom salt warm compress.

Data collection Tool and Techniques

Based on objectives of the study , following tools were used :

- Tool I: Structured Interview schedule
- Tool II: Numerical Pain Rating Scale

Reliability

Reliability of tool was checked by using Cronbach alpha reliability test and the calculated ‘ r’ value was 0.8 which indicates tool was reliable.

Content validity of the tool

The content validity of the tool was obtained by submitting the tool to the experts in the field of Medical Surgical Nursing. All experts were agreed with the statement and incorporated few valuable suggestions.

Table 1: Frequency and percentage distribution of elderly people with joint pain according to their demographic variables in the experimental group and control group.

(n = 60)

Age of elders in years	**Experimental group**		**Control group**	
	Frequency(F)	**Percentage**	**Frequency (f)**	**Percentage**
60to 65years	10	33.3%	14	46.7%
66to 70years	14	46.7%	10	33.3%
71to 75years	4	13.3%	3	10.0%
Above76years	2	6.7%	3	10.0%
Gender				
Male	14	46.6%	19	63%
Female	16	53.3%	11	37%
Education				
Illiterate	20	67%	17	57%
Primary education	2	7%	1	3%
Secondary education	7	23%	9	30%
Graduate	1	3%	3	10%
Occupation				
Government employee	7	23%	8	27%
Private employee	3	10%	3	10%
Unemployed	11	37%	3	10%
Labor	9	30%	16	53%
Diet				
Vegetarian	11	37%	12	40%
Non Vegetarian	3	10%	3	10%
Mixed	16	53%	15	50%
Monthly Income				
Below₹5000	20	66.7%	12%	40.0%
₹ 5001– 8000	5	16.7%	5%	16.7%
₹ 8001 –11000	2	6.7%	7%	23.3%
Above₹11000	3	10.0%	6%	20.0%

Table 1 shows that there was a significant difference among the elderly persons in the experimental and control group with respective to their demographic variables such as age, gender, education, occupation, diet, monthly income.

Table 2: Frequency and Percentage distribution of elderly with joint pain in both experimental and control group.

(n_1=30,n_2= 30)

	Level of Pain	Experimental group		Control group	
		F	%	f	%
Pretest	No pain	0	0.0%	0	0.0%
	Mild pain	1	3.3%	0	0.0%
	Moderate pain	4	13.3%	7	23.3%
	Severe pain	18	60.0%	18	60%
	Worst pain	7	23.3%	5	16.6%
Posttest	No pain	16	53.3%	1	3.3%
	Mild pain	8	26.7%	1	3.3%
	Moderate pain	6	20.0%	0	0.0%
	Severe pain	0	0.0%	8	26.6%
	Worst pain	0	0.0%	20	66.6%

Table 2 shows that , In the experimental group, pre-test shows that 3.3% of the elderly are having mild pain,13.3% of the elderly are having moderate pain,60% of the elderly are having severe pain and 23.3% of the elderly are having worst pain. After administration of warm compress with Epsom salt, post-test shows that 53.3% of the elderly are having no pain, 26.7% are having mild pain and 20.0% of the elderly are having moderate pain. In the control group, pre-test shows that 23.3%of the elderly are having moderate pain, 60% of the elderly are having severe pain, 16.6 % of the elderly are having worst pain. In the post-test 3.3% of the elderly are having no pain, 3.3%of the elderly are having mild pain, 26.6% of the elderly are having severe pain and 66.6% of the elderly are having worst pain.

Table 3: Evaluate the Effectiveness of Warm compress with Epsom salt and comparing pre test and post test scores between experimental and control group.

(n_1=30,n_2= 30)

Group	Experimental group		Control group	
	Pretest	Posttest	Pretest	Posttest
Mean	3.03	0.66	2.9	3.5
Standard deviation	0.71	0.80	0.63	0.93
Standard error	0.13	0.12	0.11	0.17

Paired‘t’test				
Group	Paired differences	t value	Df	Sig.(2 – tailed)
	Mean			
Experimental	2.37	21.0	29	0.00
Control	-0.6	3.0	29	0.04

Table 3 shows the mean and standard deviation of joint pain among elderly. In experimental group, pre-test mean was 3.03 with 0.71 S.D and 0.13 S.E and after application of warm compress with Epsom salt among elderly pain scores in post-test mean was 0.66 with 0.80 S.D and 0.12 S.E. From the paired ‘t’ test calculated t value is 21.0 at 29 degrees of freedom at p=0.00 < 0.05, here the calculated value is greater than the table value (2.045). Hence there was a significant difference between the pre-test to post- test at 5% level of significance. So we conclude that warm compress with Epsom salt was effective in reducing joint pain among elderly. Whereas in control group, pre-test mean was 2.9 with 0.63 S.D and 0.11 S.E and in the post-test mean was 3.5 with 0.93 S.D and 0.17 S.E. From the paired ‘t’ test calculated value is 3.0 at 29 degrees of freedom at p=3.0>0.05,here the calculated t value is less than the table value (2.045). Hence there was no significant difference between the pre-test to post-test at 5% level of significance.

Table 4: Association between demographic variables and post-test pain scores among elderly with joint pain in experimental group by using chi- square test.

(n = 30)

Age of elderly in years	Post test pain scores										Grand Total	Chi-Square
	No pain		Mild pain		Moderate pain		Severe pain		Worst pain			
	F	%	F	%	F	%	F	%	F	%		
60-65yrs	5	50%	4	40%	1	10%	0	0.0%	0	0.0%	10	15.35 @6df S*
66-70yrs	8	57%	3	21%	3	21%	0	0.0%	0	0.0%	14	
71-75yrs	2	50%	1	25%	1	25%	0	0.0%	0	0.0%	4	
Above76 years	1	50%	0	0%	1	50%	0	0.0%	0	0.0%	2	
Gender												
Male	7	50%	4	29%	3	21%	0	0.0%	0	0.0%	14	0.117 @ df NS
Female	9	56%	4	25%	3	18%	0	0.0%	0	0.0%	16	
Education												
Illiterate	8	40%	8	40%	4	20%	0	0.0%	0	0.0%	20	7.669 @6 df NS
Primary education	1	50%	0	0.0%	1	50%	0	0.0%	0	0.0%	2	
Secondary education	6	85%	0	0.0%	1	14%	0	0.0%	0	0.0%	7	
Graduate	1	100%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	
Occupation												
Government employee	4	57%	1	14%	2	29%	0	0.0%	0	0.0%	7	3.423 @ 6 df NS
Private employee	2	67%	0	0.0%	1	33%	0	0.0%	0	0.0%	3	
Unemployed	6	55%	3	27%	2	18%	0	0.0%	0	0.0%	11	
Labor	4	44%	4	44%	1	11%	0	0.0%	0	0.0%	9	
Diet												
Vegetarian	4	36%	3	27%	4	36%	0	0.0%	0	0.0%	11	5.125 @ 6 df NS
Non vegetarian	2	67%	0	0.0%	1	33%	0	0.0%	0	0.0%	3	
Mixed	10	63%	5	31%	1	6%	0	0.0%	0	0.0%	16	

Monthly income	Post test pain scores										Grand Total	Chi-Square
	No pain		Mild pain		Moderate pain		Severe pain		Worst pain			
	F	%	F	%	F	%	F	%	F	%		
Below ₹5000	11	55%	6	30%	3	15%	0	0.0%	0	0.0%	20	3.885 @ 6 df NS
₹5001 – 8000	2	40%	1	20%	2	40%	0	0.0%	0	0.0%	5	
₹8001 –11000	2	100%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	
Above ₹11000	1	33%	1	33%	1	33%	0	0.0%	0	0.0%	3	

Table 4 shows significant association with age where $\chi 2$ (15.35) was higher than the table value of $\chi 2$ (12.592) at 6 degrees of freedom at p= 0.018 , that shows there was a significant association between the post-test pain score level among elderly with joint pain with the age. $H_2$was accepted.

5. Discussion

The findings of the data shows that in pre test among Experimental group the pre-test mean pain score was 3.03 and post- test mean score was0.66, the obtained t value was 21.0, found greater than table t value. There was a significant difference in the pre-test and post-test pain scores. In control group pre-test mean pain score was 2.9 and post-test mean score was 3.5, the obtained t value was 3.0, found lower than table t value. There was no statistical significant difference in the pre-test and post- test pain scores. Among experimental group, after administration of warm compress with Epsom salt 2.37% of pain score reduction was noted where as in control group 0.6% of pain score reduction was noted. Differences between pre-test and post-test score was analysed using t test with 0.00l level of significance. Hence, (H_1) was accepted.

6. Conclusion

There was a significant difference in the mean pain perception score of elderly with joint pain before and after warm compress with Epsom salt. Justification for undertaking this study was to relive the clients from joint pain by warm compress with Epsom salt and to determine its effectiveness, so that warm compress with Epsom salt can be used in future for all elderly with the joint pain for health promotion.

7. Limitations

- The study was limited to elderly with joint pain residing at Turkayamjal, Community area, Hyderabad, Telangana.

8. Recommendations

1. A similar kind of study can be conducted for a larger group to generate the findings.
2. A longitudinal study can be conducted to assess the effect of warm compress with Epsom salt in reducing joint pain.
3. A comparative study can be done to determine the effectiveness of warm compress with Epsom salt in different settings.

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