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RESEARCH ARTICLE

A study to assess the effectiveness of stretching exercises on pain, stiffness and performance of activity of old age people with knee osteoarthritis in selected old age home, Chennai.

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Abstract

Osteoarthritis (OA) is a common health problem affecting elderly people with the knee being one of the most commonly affected areas. Knee osteoarthritis contributes to symptoms of knobby swelling at the joint, cracking or grinding noise on joint movement with joint pain, stiffness and decreased function of the joint as the main primary symptoms making it hard to perform the daily activities. A study, therefore, was undertaken to assess the effectiveness of stretching exercises on pain, stiffness and performance of activity of old age people with knee osteoarthritis in selected old age home – Chennai. The sample consists of 60 inmates of the selected old age home. Using purposive sampling technique, 30 samples were in the experimental group and another 30 samples in the control group. In order to assess the level of symptoms of knee osteoarthritis WOMAC Osteoarthritis Index (Western Ontario Mc Master University Osteoarthritis Index) was used. Results revealed that the stretching group showed significant improvements in level of symptoms (pain, stiffness, activity limitation) of knee osteoarthritis from 32.6 to 13.6 i.e, mean pre test and post test, while the control group didn't show any significant differences. The difference was found to be statistically significant at $p<0.001$. Stretching exercises therefore have benefits in reducing the symptoms of knee osteoarthritis among patients with knee osteoarthritis.

Introduction:-

Ageing or aging is the process of becoming older. Ageing involves the changes in the physical, psychological, and social change. Old age people are very vulnerable and prone to certain diseases as their immune system becomes weaker with age.

Osteoarthritis is a type of joint disease that results from breakdown of joint cartilage and underlying bone mostly affecting middle-age to elderly people. The joints most commonly affected are the hips, knees, hands and spine and great toes. According to the Arthritis Foundation, more than 27 million people in the U.S. have osteoarthritis, with the knee being one of the most commonly affected areas. In India Osteoarthritis affects over 15 million people every year. The overall incidence of knee osteoarthritis is approximately 200 per 100,000 person- years. However the incidence of knee osteoarthritis after age 50 is thrice as greater in woman as in men. Symptoms of osteoarthritis may include joint pain and stiffness, knobby swelling at the joint, cracking or grinding noise with joint movement

and decreased function of the joint. It is diagnosed based on symptoms and physical examination. There is no proven treatment yet that can reverse joint damage from osteoarthritis but often possible with a mixture of physical measures like exercises, weight loss technique, and drug therapy like Non Steroidal Anti inflammatory agents and sometimes surgery.

Objectives of the study:-

- To determine the pre test and post test level of symptoms of knee osteoarthritis of experimental and control group.
- To assess the effectiveness of stretching exercises on level of symptoms of knee osteoarthritis.
- To associate the post test level of symptoms of knee osteoarthritis with selected demographic variables such as age, gender, marital status, religion.

Hypothesis:-

H_1: There is significant difference in the level of symptoms of knee osteoarthritis before and after the intervention in the experimental group.

H_2: There will be significant association between the post test level of symptoms of knee osteoarthritis with their selected demographic variables (age, gender, marital status, religion) in the experimental group.

Methodology:-

A quasi experimental study, nonrandomized control group design has been employed in this study. The sample consists of 60 inmates of the selected old age home in Chennai.30 samples were in the experimental group and another 30 samples in the control group. The level of symptoms of knee osteoarthritis were assess using WOMAC Osteoarthritis Index (Western Ontario Mc Master University Osteoarthritis Index).

Results:-

Table 1: Assess the pre test and post test level of symptoms of knee osteoarthritis in experimental group.

Score Interpretation	Experimental group n=30			
	Pre test		Post test	
	F	%	F	%
Normal	-	-	-	-
Mild	4	13.3	28	93.3
Moderate	26	86.7	2	6.7
Severe	-	-	-	-
Extreme	-	-	-	-

Table 1 depicts the pre test and post test scores of experimental group. Among the experimental group 4(13.3%) experienced mild level of symptoms of knee osteoarthritis and a majority 26(86.7%) experienced moderate level symptoms of knee osteoarthritis in the pre test. But in the post test 28(93.3%) of the samples experienced mild level of symptoms of knee osteoarthritis and 2(6.7%) experienced moderate level of symptoms of knee osteoarthritis.

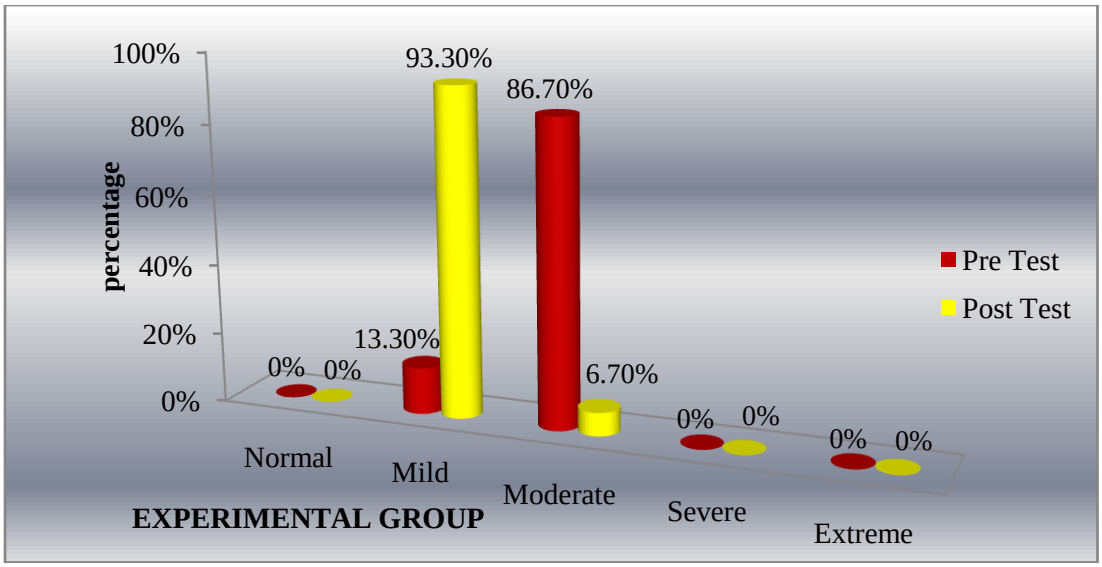

FIGURE 1: PRE TEST AND POST TEST SCORE LEVEL OF SYMPTOMS OF KNEE OSTEOARTHRITIS IN EXPERIMENTAL GROUP.

Table 2: Assess the pre test and post test level of symptoms of knee osteoarthritis in control group.

Score Interpretation	Control group n=30			
	Pre test		Post test	
	F	%	F	%
Normal	-	-	-	-
Mild	6	20	6	20
Moderate	24	80	24	80
Severe	-	-	-	-
Extreme	-	-	-	-

Table 2 depicts the pre test and post test scores of control group. In the control group 6(20%) experienced mild level of symptoms of knee osteoarthritis and 24(80%) experienced moderate level of symptoms of knee osteoarthritis in the pre test. But there was no change in the post test score as 6(20%) continued to experienced mild level of symptoms of knee osteoarthritis and 24(80%) continued to experienced moderate level of symptoms of knee osteoarthritis.

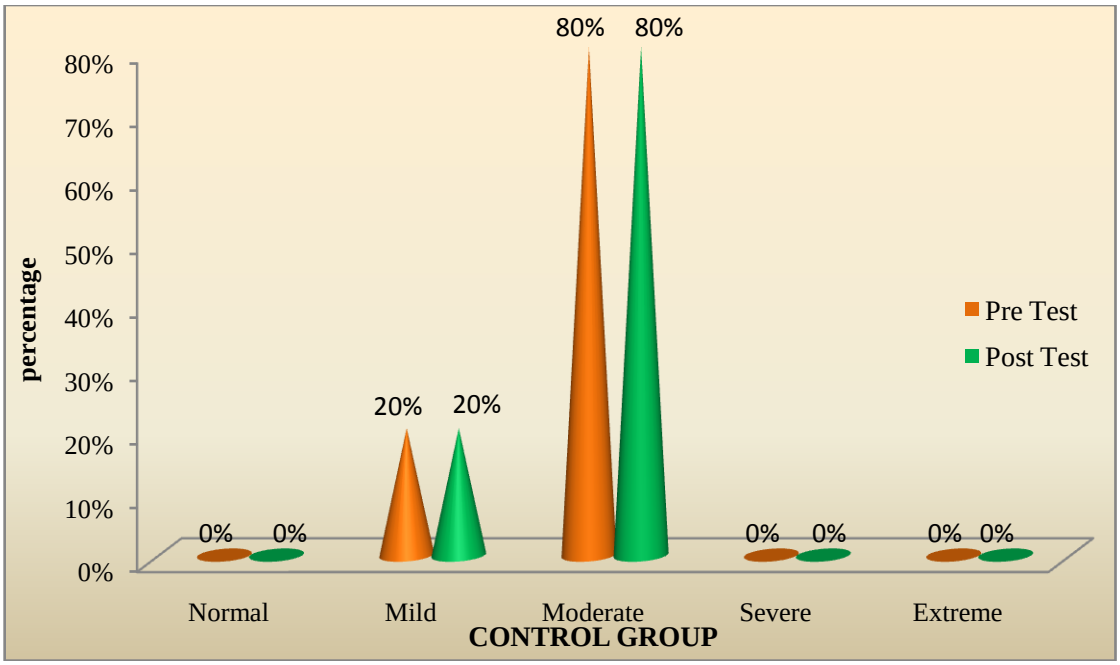

FIGURE 2: PRE TEST AND POST TEST SCORE LEVEL OF SYMPTOMS OF KNEE OSTEOARTHRITIS IN CONTROL GROUP.

Table 3: Comparison of mean pre test and post test level of symptoms of knee osteoarthritis in experimental group.

Measurement	Mean	SD	Difference		Paired 't 'value
			Mean difference	SD Difference	
Pre test	**32.8**	**8.1**	**19.2**	**2.1**	**50.5*** S(p<0.001)**
Post test	**13.6**	**6.0**			

Table 3 represents effectiveness of stretching exercises on the level of symptoms of knee osteoarthritis in the experimental group before and after the intervention. It reveals that in experimental group the mean value is 32.8 before intervention and 13.6 after intervention. The S.D value is 8.1 before intervention and 6.0 after intervention. The difference of mean and S.D is 19.2 and 2.1 respectively. The overall paired 't' test value is '50.5***' which is statistically significant at p <0.001, thus indicating effectiveness of stretching exercises on the level of symptoms of knee osteoarthritis in the experimental group.

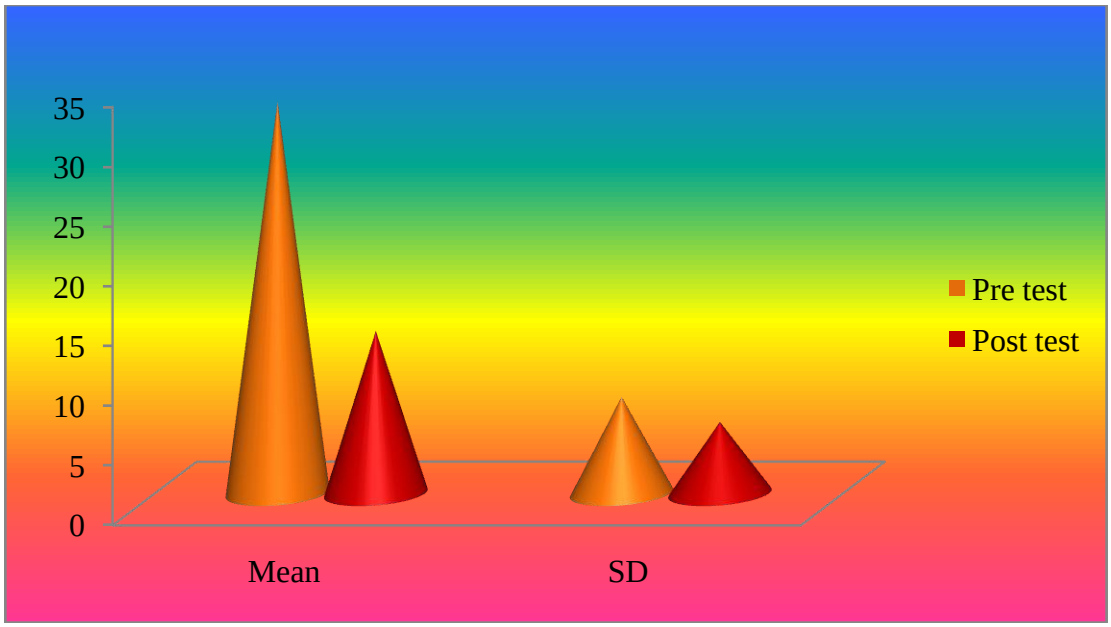

FIGURE 3: COMPARISON OF MEAN PRE TEST AND POST TEST LEVEL OF SYMPTOMS OF KNEE OSTEOARTHRITIS IN EXPERIMENTAL GROUP.

Table 4: Comparison of mean post test level of symptoms of knee osteoarthritis between experimental group and control group.

Measurement	Mean	SD	Unpaired 't' value
Experimental group	**13.6**	**6.0**	**8.5**
Control group	**31.2**	**9.6**	**Significant (P< 0.001)**

Table 4 reveals that in experimental group the mean value is 13.6 was lesser than mean post test value 31.2 in the control group. The S.D value is 6.0 in the experimental group and 9.6 in the control group. The obtained't' value '8.5' was statistically significant at $p<0.001$. The above findings indicate that there is a significant difference in the mean post test level of symptoms of knee osteoarthritis of old age between the experimental group and control group. Thus proving the effectiveness of stretching exercises in the experimental group.

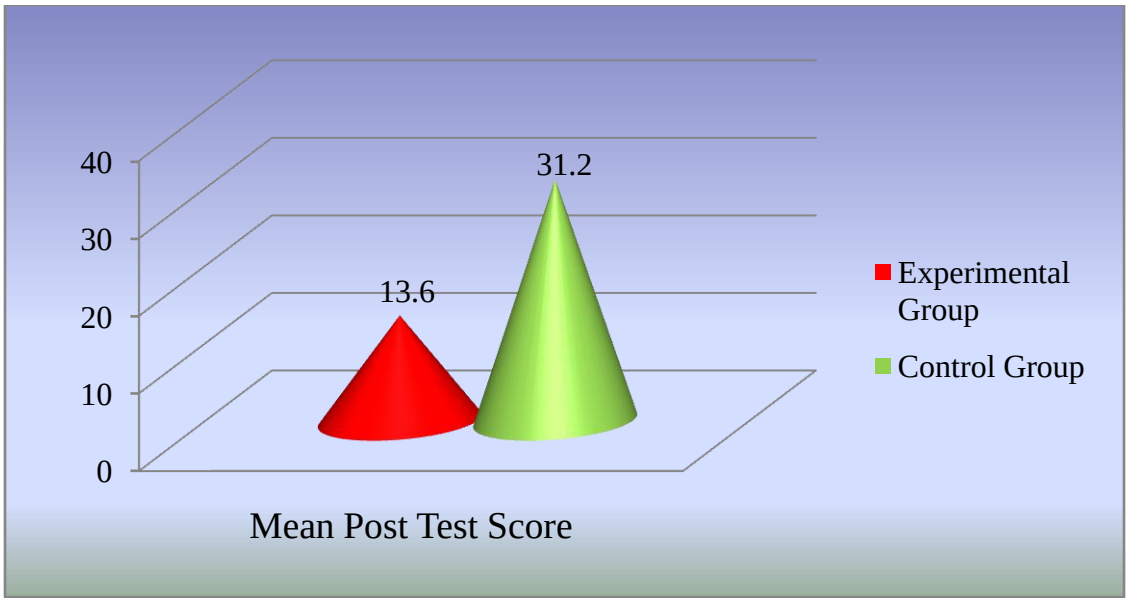

FIGURE 4: COMPARISON OF MEAN POST TEST LEVEL OF SYMPTOMS OF KNEE OSTEOARTHRITIS BETWEEN EXPERIMENTAL GROUP AND CONTROL GROUP.

Conclusion:-

The result showed that most of the old age people in old age home suffered from mild and moderate level of symptoms of knee osteoarthritis. The study reveals the effectiveness of stretching exercises on pain, stiffness and performance of activity of old age people with knee osteoarthritis. The difference was found to be statistically significant at $p<0.001$ which indicates its effectiveness.

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