

Effect of Yogic Practices and Therapeutic Exercises on Selected Functional and Clinical Variables among Rheumatoid Arthritic Women

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Abstract

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Yoga poses help strengthen the joints and improve their function, thus reducing the risk of stiffness in rheumatoid arthritic patients. The purpose of the study was to find out the effect of yogic practices and therapeutic exercises on selected functional and clinical variables among rheumatoid arthritic women. To achieve the purpose, 45 women patients of rheumatoid arthritis were selected from Chennai City. They were divided into three groups, A, B, and C. Pre test and post test were collected from the three groups. Group A was given yogic practices and Group B was given therapeutic exercises. Group C was a control group. The two experimental groups were given six weeks of training. The collected data were analyzed using analysis of covariance. The results of the study showed that there was a significant change in the functional and clinical variables due to the influence of training in the two experimental groups than the control group. Yogic practices had significant effect than therapeutic exercises of the two experimental groups.

Keywords: Yoga, Rheumatoid arthritis, Therapeutic exercises.

Introduction

Continuing research shows the therapeutic benefits that yoga has on rheumatoid arthritis. Scientific studies in major medical journals have found that yoga can help arthritis patients by building muscle strength, increasing flexibility, promoting better balance, reducing body aches, creating a better sense of well-being, reducing feelings of anxiety and depression.

The results of the study appearing in the Indian Journal of Rheumatology found that the rheumatoid arthritis patients who followed an eight-week yoga program experienced considerable improvement in their arthritis symptoms, and some were able to stop taking arthritis medications they had been prescribed. A gentle form of this ancient therapy can not only help with rheumatoid arthritis pains, but should also relax and enable to better enjoy daily activities.

Purpose of the Study

The present study was designed to find out the effect of yogic practices and therapeutic exercises on selected functional and clinical variables among women patients of rheumatoid arthritis.

Hypothesis

It was hypothesized that there would be a significant difference on selected functional and clinical variables among women patients of rheumatoid arthritis due to yogic practices and therapeutic exercises.

Review of Related Literature

Bosch PR, et. al. (2009) conducted a study on functional and physiological effects of yoga in women with rheumatoid arthritis. Stress, both psychological and physiological, has been implicated as having a role in the onset and exacerbations of rheumatoid arthritis (RA). This study investigated whether neuroendocrine and physical function in women with RA can be altered through a yoga intervention. Sixteen independently living, postmenopausal women with an RA classification of I, II, or III according to the American College of Rheumatology functional classification system served as either participants or controls. The study group participated in three 75-minute yoga classes a week over a 10-week period. At baseline and on completion of the 10-week intervention, diurnal cortisol patterns and resting heart rate were measured. Balance was measured using the Berg Balance Test. Participants completed the Health Assessment Questionnaire (HAQ), a visual analog pain scale, and the Beck Depression Inventory. Results showed that yoga resulted in a significantly decreased HAQ disability index, decreased perception of pain and depression, and improved balance. Yoga did not result in a significant change in awakening or diurnal cortisol patterns ($P = .12$)

Telles S. et. al (2011) conducted a study on effect of one week of yoga on function and severity in rheumatoid arthritis. Previous studies have shown that yoga practice improved the hand grip strength in patients with rheumatoid arthritis (RA). Sixty-four participants with RA (group average age $\pm$ S.D., 46.5 ± 9.6 years; 47 females) were assessed at the beginning and end of a one week yoga program. The Stanford Health Assessment Questionnaire (HAQ), hand grip strength, rheumatoid factor, and C-reactive protein levels were assessed on the first and last day and compared using a t-test for paired data. All participants showed reduced disability scores of the HAQ and rheumatoid factor levels, with an increase in bilateral hand grip strength in male participants alone. Conclusions: This single group study indicated that a brief intensive yoga program was beneficial in RA, with decreased disability, better functionality and changes in the rheumatoid factor levels suggesting improvement.

Methodology

To achieve the purpose of the study, 45 women patients of rheumatoid arthritis from Chennai city aged between 40 and 50 years were selected randomly. The selected subjects were divided into two experimental groups and a control group with 15 subjects each in a group.

The two experimental groups underwent training for the period of six weeks, six days per week for the maximum of one hour. The control group was not exposed to any specific training but they participated in the regular activities.

The yogic practices given to the experimental group A include pavanamuktasana series padasanchalan types, janusanchalana types, uttanapadasana, viparithakarani, ardha salabasana, dhanurasana, dhandasana, janu sirsasana, paschimothanasana, tadasana, trikonasana, padahasthasana, savasana.

The therapeutic exercises given to the experimental group B include bent-leg raises, straight-leg raises, lying leg lift, wall sit, bridge, calf stretch, calf raise, quadriceps stretch, hamstring stretch

The selected functional variable, balance measured by Tinetti Performance Oriented Mobility Assessment (POMA), clinical variable, pain measured by VAS.

Results and Discussions

The data pertaining to the variables collected from the two groups before and after the training period were statistically analyzed by using Analysis of Covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance.

The Analysis of Covariance (ANCOVA) on balance of two experimental groups and the control group was analyzed and are presented in table I:

Table - I
Computation of Analysis of Covariance on Balance

Test	Yoga	The. Ex	Control	Source of variance		Degrees of freedom	Means of squares	Obtained F value
Pre Test	18.733	19.133	19.333	Between	2.8	2	1.4	0.438806
				Within	134	42	3.19047	
Post Test	27.467	24.400	19.133	Between	532.93	2	266.466	248.3343*
				Within	45.07	42	1.07301	
Adjusted Post Test	27.54	24.38	19.07	Between	539.5669	2	269.783	289.7861*
				Within	38.16995	41	0.93097	

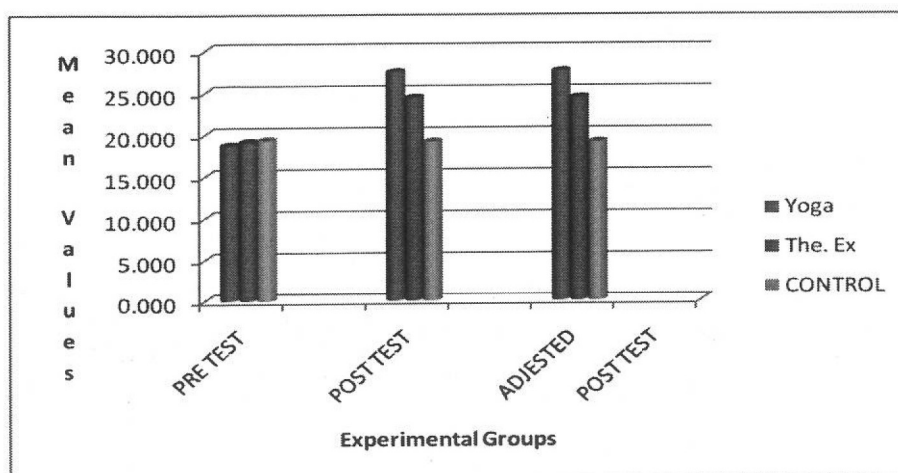
Table F ratio at 0.05 level of confidence for 2 and 42 (df) = 3.22, 2 and 41 (df)=3.23

*significant

The obtained 'F' value of 289.78, adjusted post test means was greater than the required table 'F' value of 3.22. This proved that there was a significant difference among the means due to six weeks training of yogic practices on balance.

Bar diagram for better understanding of the results of this study in figure 1 on balance.

Figure-1
Bar Diagram of Balance



Results and Discussion of Pain

The pre and post test scores of the clinical variable, pain was measured and subjected to statistical treatment. The results on the effect of six weeks training of yogic practices and therapeutic exercises are presented in the Table II.

Table-II
Computation of Analysis of Co Variance on Pain

Test	Yoga	The. Ex	Control	Source of variance		Degrees of freedom	Means of squares	Obtained F value
Pre Test	7.733	8.067	7.800	Between	0.9333	2	0.466667	0.693396
				Within	28.266	42	0.673016	
Post Test	2.000	5.000	7.867	Between	258.18	2	129.0889	195.495*
				Within	27.73	42	0.660317	
Adjusted Post Test	2.00	5.00	7.87	Between	257.71	2	128.8566	190.584*
				Within	27.720	41	0.676112	

Table F ratio at 0.05 level of confidence for 2 and 42 (df)=3.22, 2 and 41 (df)=3.23

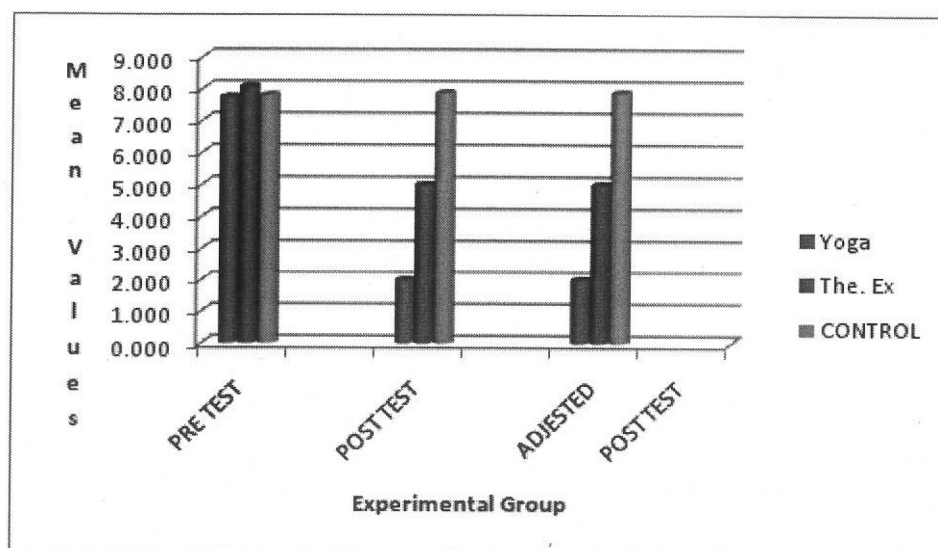
*significant

The obtained 'F' value of 190.58 adjusted post test means was greater than the required table 'F' value of 3.22. This proved that there was a significant difference among the means due to six weeks training of yogic practices and therapeutic exercises on pain.

Bar diagram for better understanding of the results of this study in figure 2.

Figure-2

Bar Diagram of Pre and Post Test Means of Pain



Conclusion

Based on the results obtained, the following conclusions were drawn:

1. It was concluded that Balance was significantly improved and Pain was significantly reduced due to the influences of six weeks training of Yogic practices and Therapeutic exercises than the control group on Rheumatoid arthritic patients.
2. It was concluded that Yogic practices was effective than Therapeutic exercises in improving Balance and reducing pain on Rheumatoid arthritic patients.

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