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Effect of Yogic Practices on Knee Pain and Anxiety Among Aged Women Suffering With Osteoarthritis

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Abstract: The purpose of this research was to examine the effects of yoga practices on selected clinical variables, such as knee pain, and psychological variables such as anxiety in women with osteoarthritis. Thirty women in their 60s and 70s with osteoarthritis were recruited using a random sample group design in Chennai, India and they were divided into two groups of 15 participants each. It was expected that older women with osteoarthritis would benefit more from Yogic practices than the control group in terms of knee pain and anxiety. Before beginning the training program, both Groups (A and B) were given a pre-test on the aforementioned dependent variables. Yogic techniques were provided to Group A, whereas Group B (the Control Group) engaged in active rest. Groups A and B were retested on the same dependent variables after eight weeks of experimentation. To determine statistically significant differences between the experimental and control groups, we used an analysis of co-variance (ANCOVA). At the 0.05 confidence level, the findings demonstrated that Yogic practices decreased knee pain and anxiety among older women with osteoarthritis. It is concluded that yogic practices are essential for osteoarthritis women.

Keywords: Osteoarthritis, Knee pain, Anxiety, Yoga

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Introduction

Osteoarthritis (OA) is the most common kind of arthritis in India, with over 15 million adults diagnosed each year. Doctors predict that by 2025, India would have more than 60 million cases of osteoarthritis. Recent decades have seen

an increase in the prevalence of osteoarthritis among Indians aged 30 to 50, and the condition remains a major cause of suffering for the elderly in the healthcare industry. Patients in India who report knee discomfort constitute about 80% of

the country's population. About 20% of these people say they lack the capacity to do even the most basic of tasks, and another 11% say they need special care (Mishra, 2012). Nearly 2% of the population over the age of 70 suffers from knee pain and impairment due to OA (Hashmi, 2011).

Articular cartilage is the primary target of osteoarthritis, a degenerative joint condition. It is a natural part of becoming older and tends to strike the areas of the body that have been under the greatest pressure throughout the years, such as the knees, hips, fingers, and lower back. One of the top 10 most debilitating illnesses in affluent nations is osteoarthritis.

The risk of osteoarthritis rises by 4.5 times for those who work in agriculture for 1-9 years, and by 9.3 times for those who work in agriculture for 10 years or more. Over 60-year-olds, symptomatic osteoarthritis affects an estimated 9.6% of men and 18.0% of women globally. Eighty per cent of persons with osteoarthritis will have mobility restrictions, and twenty-five per cent will be unable to carry out basic daily tasks. Because osteoarthritis affects the aging female body as a whole, it is imperative that any therapy be evaluated holistically. Any lifestyle adjustments, including yoga, meditation, or exercise, would be beneficial.

The ultimate goal of yoga is to unite the individual soul with the Divine. The coming together of the Divine Spirit with the Human Soul. This study's focus and variables were selected because they would inform the public about the positive effects of yogic practices and inspire women to make positive changes in their lives. The purpose of this research was to determine whether or not yogic practices for older women with osteoarthritis would have a statistically significant effect on certain clinical variables, such as knee pain and psychological variables, such as anxiety. It was hypothesized that there would be significant differences on selected clinical Variable such as knee pain and psychological variable such as anxiety due to yogic practices

among aged women suffering with osteoarthritis than control group.

Delimitations of this study are –(i) only arthritic older women participated in the trial; (ii) only residents of Chennai were considered for inclusion; (iii) subject ages were limited to those between 60 and 70 years old; and (iv) only knee pain and anxiety were included as dependent variables in the analysis. The yoga practice was the sole independent factor.

Limitations of the study are -- (i) there was no attempt to account for contextual variables such as socioeconomic standing; (ii) climate was not taken into account; (III) lifestyle choices and other non-trivial factors were ignored; (iv) no consideration was given to the individuals' typical routines; and (v) the individuals' diets and medication schedules were not monitored.

Materials and Methods

Thirty participants were chosen at random using a Random Group Sampling Design to conduct an experimental investigation with control group. So, there were a total of 30 participants, 15 in Group I and 15 in Group II. Each group (I and II) was given a pre-training exam on the dependent variable of interest. Group I participated for 60 min of yoga practices, six days a week, for eight weeks. Group II (control group) was without receiving any special instruction. Both groups were again tested after eight weeks on the same set of physiological characteristics (such as heart rate and stress levels) that had been chosen as the dependent variable. To determine statistically significant differences between the experimental and control groups, we used an analysis of covariance (ANCOVA). The significance threshold of the test was set at 0.05.

Yogic practices for osteoarthritis:

Following Asanas were selected in the treatment programme based on Iyengar.

Warm up Exercises:

- Dandasana

- Suptapadangusthasna
- Virabhadrasana II
- Salabhasana
- Paschimottanasana
- Utthitatrikonasana
- Paripoorna Navasana
- Adhomukha Svanasana

Results and Discussion

The hypothesis was evaluated at the 0.05 level of confidence, and Analysis of Co-variance (ANCOVA) was used to assess the data relating to the variable obtained from the two groups before and after the training period.

On the subject of pre-test scores, the obtained F value of 0.91 was lower than the necessary F value of 4.2 at the 0.05 level of significance. The results of the pre-tests showed no statistically significant differences between the groups, indicating that the randomization during the pre-test was fair. The examination of post-test scores indicated a statistically significant difference between the groups, as the resulting F value of 42.34 surpassed the minimum threshold of 4.20. This demonstrated that there were statistically significant variations between respondents' post-test means. The groups' pre- and post-test results were used to derive adjusted mean scores, which were then statistically analyzed. The calculated value of F (69.63) was larger than the minimum value of F (4.20). This demonstrated that there was a statistically significant difference between groups as a result of eight weeks of yoga practice on knee pain (Table 1). Table 2 and Figure 1 provide a representation of the adjusted order means for anxiety.

Moskowitz (2007) evaluated the potential of B.K.S. Iyengar-style yoga for relieving the symptoms of knee osteoarthritis. Participants attended 90-min courses once per week for 8 weeks, where they were taught modified versions of several Iyengar yoga poses. Before and after an 8-week course in yoga, participants were

evaluated using a variety of measures, including a medical history and physical examination, the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), the Arthritis Impact Measurement Scale 2 (AIMS2), the Patient Global Assessment (GA) on a Visual Analog Scale (VAS), the Physician Global Assessment (GA) on a VAS, and the 50-foot Walk Time. Eleven (11) participants signed up, nine (9) completed at least one session, and seven (including six obese participants) provided pre- and post-course data.

When participants' post-course WOMAC Pain, WOMAC Physical Function, and AIMS2 Affect scores were compared to their pre-course scores, statistically significant improvements were shown across the board. Trends in symptom improvement were evaluated using the WOMAC Stiffness, AIMS2 Symptoms, Social and Role, Physician Global Assessment, and Patient Global Assessment. Treatment-related side effects were not recorded. The results of this preliminary research show that yoga may be a viable therapeutic option for individuals over the age of 50 who are both overweight and unfamiliar with yoga, and who suffer from knee osteoarthritis. Yoga should be compared to other non-pharmacologic therapies for knee OA in future research. These interventions might include patient education or quadriceps- strengthening activities (Swami Shankardevananda, 1978).

To assess the acceptability and feasibility of a mild yoga intervention for sleep disruption in older women with osteoarthritis (OA), and to gather preliminary data on the intervention's effectiveness (Swami Karmananda, 1983). Diana M. Taibi (2010) performed a research. The 8-week yoga program consisted of 75-min weekly courses and 20-min nightly home practice, and all participants finished it. Women with osteoarthritis and insomnia-like symptoms participated. Pre- and post-intervention assessments included filling out symptom questionnaires and keeping a sleep diary for a week. Thirteen out of 14 recruited women ultimately went on to finish the research. Sleep

Table 1: Analysis of covariance of the means of two experimental group and the control group on knee pain (scores in numbers)

Tests/ Groups	EX. GR-I	CG GR-II	SV	Sum of Squares	df	Mean Squares	"F" Ratio
Pre-Test	7.0	6.47	B	2.13	1	2.13	0.91
			W	65.73	28	2.35	
Post- Test	3.73	7.0	B	80.03	1	80.03	42.34*
			W	52.93	28	1.89	
Adjusted Post- Test	3.60	7.14	B	91.16	1	91.16	69.63*
			W	35.35	27	1.31	

*Significant at 0.05 level of confidence. (Table F ratio at 0.05 level, of confidence for df 1 and 28= 4.2, 1 and 27= 4.21)

Table 2: Analysis of co-variance of the means of experimental group and the control group in anxiety – (scores in marks)

Test	Group-A	Group-B Control	Source of Variation	Degrees of Freedom	Sum of Squares	Mean Sum of Squares	F-Ratio
Pre	31.40	30.07	Between	1	13.33	6.67	0.04
			Within	28	6946.53	165.39	
Post	18.93	26.40	Between	1	418.13	209.07	5.13 *
			Within	28	1712.53	40.77	
Adjusted Post	18.88	26.35	Between	1	418.08	209.04	5.01*
			Within	27	1712.36	41.76	

* Significant at 0.05 level of confidence (Table F ratio at 0.05 level of confidence for df 1 and 28 = 4.20, 1 and 27 = 4.21).

onset latency, sleep efficiency, and the number of nights with insomnia were all substantially reduced after the intervention compared to before it.

There was a trend for better sleep after the intervention regardless of statistical significance on measures such the Pittsburgh Sleep Quality Index, the Epworth Sleepiness Scale, diary-reported total sleep duration, and waking after

sleep start. There was no appreciable change in actigraphic sleep results. This research lends credence to the idea that a consistent nighttime yoga practice is feasible and well-liked by middle-aged and older women living with OA. Initial results of this program shows yoga as a therapy option for insomnia caused by OA.

It was hypothesized that there would be significant differences on selected clinical

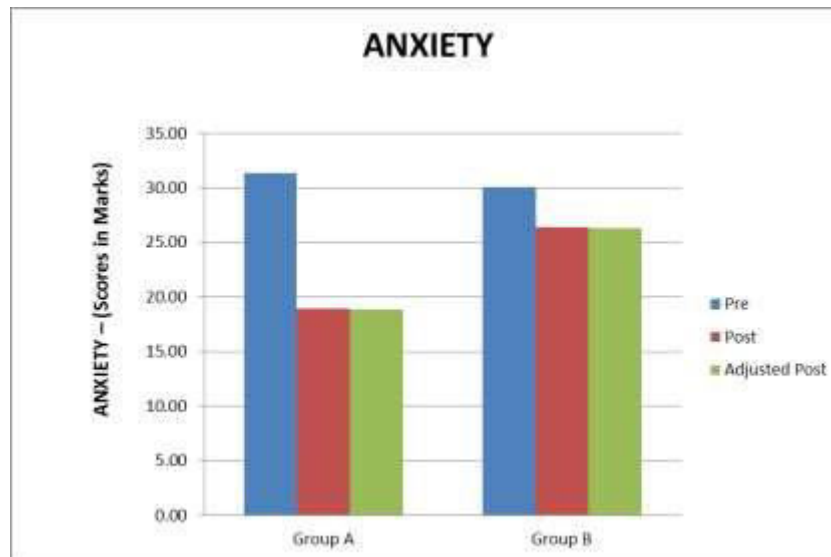


Fig. 1: Adjusted mean for post- test of the experimental group and control group for anxiety – (scores in Marks).

variables and psychological variable such as knee pain and anxiety due to yogic practices among aged osteoarthritis women than the control group. The results proved that there were significant differences on knee pain and anxiety (both decreased) due to yogic practices than the control group among aged osteoarthritis women.

Conclusion

It was concluded that yogic practices decreased knee pain and anxiety significantly among aged osteoarthritis women. Hence, yogic practices are beneficial for aged osteoarthritis women.

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