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Effect of Yogic Practices and *Panchakarma* Therapy on Clinical Variables among Men with Low Back Pain

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ABSTRACT

The present study was conducted to find out the effect of yogic practices and panchakarma therapy on clinical variables such as pain and range of motion among men with low back pain. To achieve the experimental study, 45 men prone to low back pain within Chennai city in the age group of 35 to 45 years, were selected randomly into two experimental and control groups. Each group consisted of 15 subjects. Random group design was used for the selection of subjects. Experimental group I underwent yogic practices and II underwent panchakarma therapy for the period of 16 weeks, three days per week for the maximum of an hour in the morning. The control group was not exposed to any specific training program. Pre and post tests were taken before and after training for the above three groups. The pain was measured by a questionnaire called “Visual Analogue Scale (VAS)” and range of motion was measured by centimeters tape “Modified Schober Method (Inch tape)”. The data on the clinical variables namely, pain and range of motion level was collected from all the three groups at baseline and at the sixteen weeks. To analyse the data, Analysis of Covariance (ANCOVA) was used. The results of the study shows that there is a significant reduction in the pain and increased range of motion due to the influence of yogic practices and panchakarma therapy. Hence, the hypothesis was accepted at 0.05 level of confidence.

KEYWORDS

Low back pain, Yogic practices, Pain, Range of Motion



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INTRODUCTION

“Low back pain is a major health issue all over the world and the lifetime prevalence is reported to be as high as 84%. The occurrence of chronic low back pain is about 23%, with 11-12% of the residents being disabled”¹ due to this and also 8 in 10 people have one or additional bout of back pain.²

In general cases, a study available in the journal spine found that yoga for low-back pain is a useful approach to reduce the pain. It was also found that those who practiced *yoga* two days a week experienced significantly less lower-back pain, disability, and depression than those using conventional treatment.³

YOGA

Yoga is a traditional Indian science, which is a practice for mind and body including physical postures and breathing techniques also meditation. It helps in maintaining physical, mental, and spiritual well-being of a person. *Yoga* therapy helps to treat various disorders of body systems such as cardiovascular, respiratory, digestive, circulatory, excretory, urinary, reproductive, endocrine system, and musculoskeletal system.⁴

Swastasyaswasthrakshanam/Aturasyavikar prashamanch

- (*Charaka/Su/30/26*)

PANCHAKARMA THERAPY

Panchakarma is a particular system in *ayurvedic* science for purification and detoxifying the body. It helps to remove the toxins from the body through five of the therapeutic procedures, *vamana*, *virechana*, *basti*, *nasya*, and *raktamokshana*. These procedures help in the removal of deep-rooted stress and disease-causing agent along with balancing the *doshas*.⁵ The patient is administered either one of the procedures or a combination of procedures. Fundamental *panchakarma* therapy involves the following procedures:

1. *Poorva karma* /preparatory stage: *Snehan* (oleation) and *swedana* (steam). Oleation is further divided into internal and external. Internal oleation can be form of medicated *ghee* or oil for consumption in different forms while external oleation involves different types of massages.
2. *Pradhan karma*/main treatment: It is the process of detoxification by one of the *panchakarma* procedures as per the patient's medical needs.
3. *Paschat karma-rasayana* / rejuvenation is done after the main treatment: This includes diet recommendations, lifestyle modifications, and simple *ayurvedic* supplements.⁶

Yoga and *panchakarma* therapies are becoming increasingly popular across the world. There are several studies conducted



showing the efficacy of *Yoga, Ayurveda,* and *Panchakarma* therapy in improving the quality of life, cardiovascular health, and body composition (Woodyard, 2011; Barrows & Fleury, 2016; Bera & Rajapurkar, 1993).⁷

PURPOSE OF THE STUDY

The present study was considered to find exposed the effect of *yogic* practice and *panchakarma* therapy on pain and range of motion among men with low back pain.

HYPOTHESIS

1. It was hypothesized that there would be considerable differences on *yogic* practices and *panchakarma* therapy (Experimental groups) then control group on pain and range of motion among men with low backpain.
2. It was hypothesized that there would be significant differences between *yogic* practices and *panchakarma* therapy on pain and range of motion among men with low back pain.

REVIEW OF RELATED LITERATURE

Carneiro, K. A., & Rittenberg, J. D.(2010)conducted a study on role of exercise and alternative treatment for low back pain. The determination of whether a patient should pursue an active or passive treatment program is often made by medical practitioners. “Knowledge about all forms of treatment, including

complementary and alternative (CAM) treatments, is essential to treat low back pain. Medical practitioner-directed active treatments that have been shown to be effective for the treatment of low back pain include physical therapy-directed exercise programs such as core stabilization and mechanical diagnosis and therapy (MDT). Based on the current literature, it appears that yoga is the most effective non physician directed active treatment approach to nonspecific low back pain when comparing other CAM treatments. Acupuncture is a medical practitioner-directed passive treatment that has been shown to be a good adjunct treatment. More randomized controlled studies are needed to support both CAM treatments and exercise in the treatment of low back pain”.

Verma, A., Shete, S. U., &Doddoli, G. R. (2017) conducted a study on effect of *yoga* and *panchakarma* therapy on psycho physiological variables. *Yoga* and *ayurveda* are two consistent established Indian sciences which have been found to be balancing to both others when administered together. *Panchakarma* is a particular method in *ayurvedic* science for cleansing and detoxifying the body. “It leads to expulsion of toxins of the body with the help of five therapeutic treatment procedures, i.e., *vamana, virechana, basti,*



nasya, and *raktamokshana*. The *yoga* and *panchakarma* therapy on psychophysiological variables in patients visiting health-care center, Kaivalyadhama was the objective. Nine Japanese study participants (average age 48.8 years) were used under study to validate the outcomes of *yoga* and *panchakarma* therapy on physiological, biochemical and psychological variables". At the baseline, lipid profile and body composition analyses were done moreover the WHO Quality-of-Life questionnaire was administered. After completion of two weeks of *yoga* and *panchakarma* therapy, posttest was conducted. Percentage-wise analysis was done to analyze the findings of the study. The results revealed 7.1%, 10.87%, 9.78%, and 10% reduction in cholesterol, triglyceride, low-density lipoprotein, and very low-density lipoprotein, respectively. There was an improvement in fat mass (9.3%), body mass index (3.77%), and fat-free mass (2.28%). Quality of life on all the domains, i.e., physical health (33.49%), psychological health (12.78%), social relationships (8.87%), and environment (12.74%) showed considerable improvement the experimental training. *Yoga* and *panchakarma* therapy given at Kaivalyadhama is extremely effective in restoring physical, mental, and emotional well-being of an individual.

METHODOLOGY

To achieve the purpose of the study, 45 men prone of low back pain from Chennai city were selected as subjects; their age was ranged from 35 to 45 years. All the subjects were assigned to two experimental groups (I and II) and control group, each consisting of 15 subjects. In this study *yogic* practices and *panchakarma* therapy were given to Experimental groups (I and II) for the period of sixteen weeks, three days per week for the maximum of an hour in the morning. The control group was not given any specific training but they participated in the regular activities.

Yogic practices given to the individualistic, depending on their pain and range of motion appropriate modifications were adopted to suit the individual Practices. The *Yogic practices* given to the experimental group include Prayer, Loosening Exercises, *Shavasana*, *Hasthasanchalan*, *Sasankasana*, *PadaSanchalanasana*, Pelvic Tilt, *Makrasana*, *Bhujangasana*, *Marjariasana*, *Shalabhasana*, *Pranayama*, *Bramari*, Meditation, Relaxation.

The *panchakarma* therapy practices given to the included were *poorva Karma*, which is the preparatory procedure required before the main procedure to enable a individual to be given the full benefits of the main treatment. It is consists of two main process



– *Snehan* (oleation) and *Swedana* (fomentation). These method help to remove the accumulated toxic substance in the body thus prepare them for their total removal. *Pradhan karma* or the main process. On achievement of the first step, it is determined which of these are to be done depending upon the closeness of the waste. An increased level of upper respiratory tract waste shall call for *Vamana*. Similarly, a lower gastro growth of ravage calls for a

Virechanam. Paschaat Karma or the post-therapy dietary routine to restore the body's digestive and absorptive ability to its normal state.

RESULTS AND DISCUSSIONS

The data collected from the three groups before and after the experimental training period were statistically analyze by using Analysis of Covariance (ANCOVA) to find out the significance 0.05 level.

Table 1 Analysis of Co-Variance of Experimental Groups and the Control Group on Pain (Scores in Numeric Values)

Test	Group-I Yogic practices	Group-II Panchakarma therapy	Group-III Control	Source of Variation	Degrees of Freedom	Sum of Square s	Mean Sum of Square s	F-Ratio
Pre	7.00	7.13	6.47	Between	2	3.73	1.37	1.13
				With in	42	69.47	1.65	
Post	4.07	4.80	7.00	Between	2	69.91	34.96	22.68*
				With in	42	77.33	1.84	
Adjusted Post	3.95	4.57	7.34	Between	2	93.37	46.68	71.05*
				With in	41	26.54	0.65	

*Significance at 0.05 level.

Table F ratio at 0.05 level of significance for 2, 42 df and 2, 41df was 3.22 and 3.23 respectively.

The obtained F value on pre test scores 1.13 was lesser than the necessary F value of 3.22 to be considerable at 0.05 level. This proves that there was no important between the groups of pre test and randomization at the pre test was equal.

The post test scores investigation prove that there was important difference the groups, as the obtain F value 22.68 was greater than the required F value of 3.22. This proved that the differences between the test means of the subjects were significant.

Taking into thought the pre and post test score among the group's adjusted mean score were designed and subjected to statistical treatment. The obtained F value of 71.05 was greater than the necessary F value of 3.23. This proved that there was a significant difference among the means due to sixteen weeks between the experimental groups on Clinical variable Pain. Since substantial improvements were recorded, the outcome was subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were obtainable in table 2.



Table 2 Scheffe's Post-Hoc Test for Pain

Adjusted Post- test Means			Mean Difference	Confidence Interval
Group - I Yogic Practices	Group-II Panchakarma Therapy	Group-III Control		
3.90	4.93		1.03*	0.89
	4.93	7.30	2.37*	0.89
3.90		7.30	3.40*	0.89

*Significant at 0.05 level.

The multiple mean comparisons exposed in table -2 proved that there existed important differences between the adjusted means of *yogic* practices (Group I) and control group, *panchakarma* therapy (Group II) and control group. There was significant

difference between *yogic* practices (Group I) and *panchakarma* therapy (Group II). The ordered adjusted means on Pain were presented through figure for better understanding of the results of this study in Figure 1.

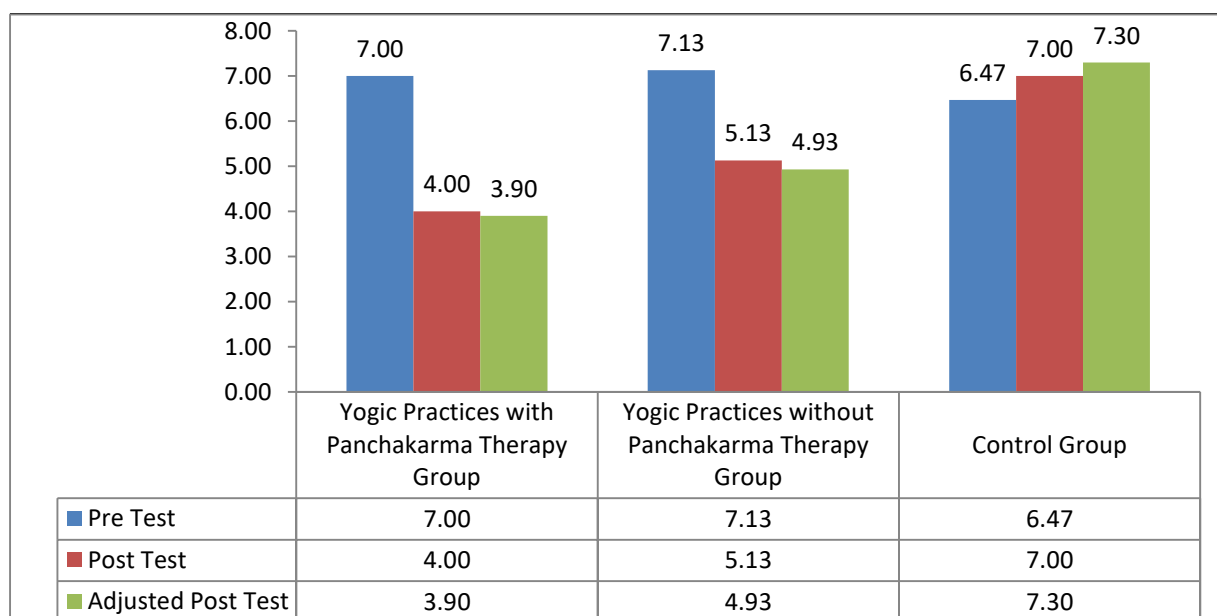


Fig 1 Bar Diagram Showing the Mean Values Difference among *Yogic* Practices, *Panchakarma* Therapy and control groups (Scores in Numeric Values)

The Analysis of Covariance (ANCOVA) on Range of Motion of *Yogic* practices,

Panchakrama Therapy and Control group was analyze and are obtainable in table#3

Table 3 Analysis of Co-Variance of Experimental Groups and the Control Group on Range of Motion (Scores in degree)

Test	Group-I Yogic practices	Group-II Panchakarma therapy	Group-III Control	Source of Variation	DOF	SOS	Mean Sum of Squares	F-Ratio
Pre	85.60	81.67	88.47	Between	2	349.64	174.82	1.50
				With in	42	4328.7	103.06	
Post	105.07	97.67	93.47	Between	2	1034.80	517.40	9.25 *
				With in	42	5200.00	123.83	
	104.78	100.53	90.88	Between	2	1479.28	739.64	28.11*



Adjusted Post	With in	41	2420.79	59.04
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*Significance at 0.05 level.(SOS= Some of Square. DOF= Degrees of Freedom)

Table F ratio at 0.05 level of significance for 2, 42 df and 2, 41df was 3.22 and 3.23, respectively.

The obtained F value on pre test scores 1.50 was lesser than the necessary F value of 3.22 to be significant at level. This proved that there was no important difference between the groups of pre test and randomization at the pre test was equal. The post test scores analyses prove that there was important difference between the groups as the obtained F value 9.25 was greater than the necessary F value of 3.22. This proves that the difference between the test means of the subjects were significant.

Taking into thought the pre and post test scores among the groups, adjusted mean scores were considered and subjected to statistical treatment. The obtained F value of 28.11 was greater than the required F value of 3.23. This proved that there was a significant difference among the means due to sixteen weeks of *Yogic* practices and *Panchakarma* therapy on Clinical variable Range of Motion.

Since significant improvements were record, the outcome was subjected to post hoc analysis by Scheffe's Confidence Interval test. The results were obtainable in table - 4.

Table 4 Scheffe's Post-Hoc Test for Range of Motion (Scores in degree)

Adjusted Post- test Means			Mean Difference	Confidence Interval
Group-I Yogic Practices	Group-II Panchakarma Therapy	Group-III Control		
105.87	98.69		7.18*	7.04
	98.69	88.70	9.99*	7.04
105.87		88.70	17.17 *	7.04

*Significant at 0.05 level of confidence

The multiple mean comparisons exposed in table - IV proved that there existed significant differences between the adjusted means of *Yogic* practices (Group I) and control group, *panchakarma* therapy (Group II) and Control group. There was important difference between *Yogic* practices(Group I) and *panchakarma* therapy (Group II).The ordered adjusted means on Range of Motion were obtainable

through figure for better considerate of the results of this study in Figure 2.

CONCLUSIONS

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

1. It was concluded that pain reduced and range of motion increased significantly due to the influences of sixteen weeks *yogic* practices (Group-I) and *panchakarma*



therapy (Group-II) than the control (Group-III) among men with low back pain.

2. It was concluded that yogic practices (Group-I) was slightly effective than *panchakarma* therapy (Group-II) in reducing pain and increased range of motion among men with low back pain.

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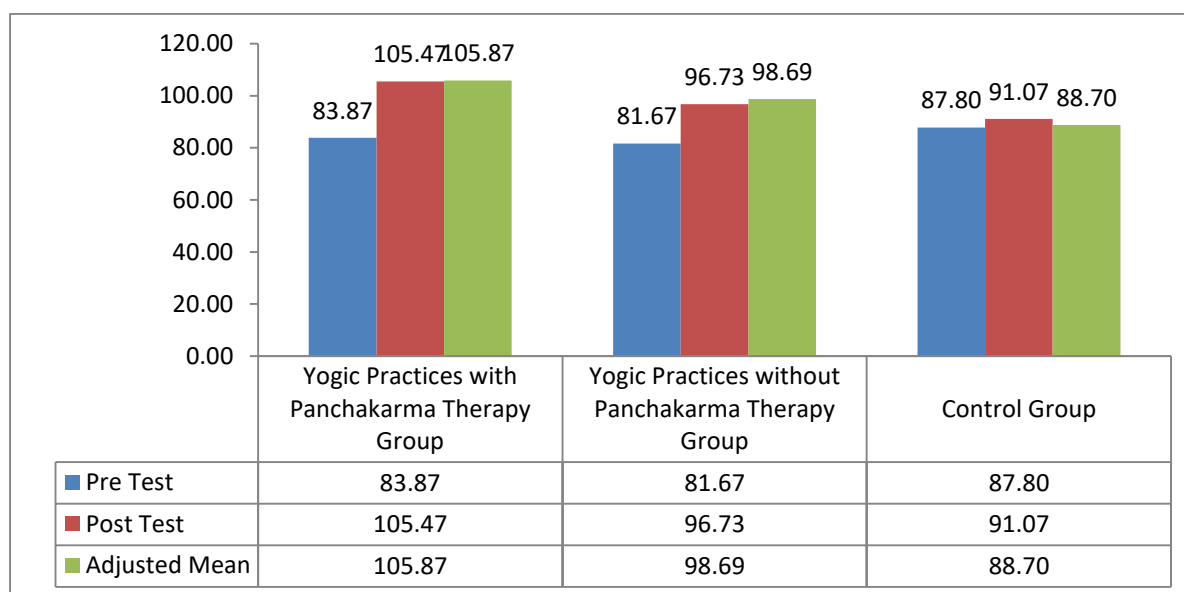


Fig 2 Bar Diagram Showing the Mean Values Difference among Yogic Practices, Panchakarma Therapy and control groups (Scores in degree)



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