



**EFFECT OF SELECTED YOGIC PRACTICES, PHYSICAL EXERCISES AND
PHYSIOTHERAPY TREATMENT ON PERSONAL CARE OF
LOW BACK PAIN PATIENTS**

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ABSTRACT

The purpose of the study was to investigate the effect of selected yogic practices physical exercises and physiotherapy treatment on personal care (washing and dressing) of low back pain patients. One hundred low back pain patients are taken from the Thavanur town, Kerala. The age, height and weight of the subjects ranged from 30 to 40 years, 158 to 169 centimetres and 55 to 70 kilograms respectively. The selected subjects were randomly assigned into five equal groups of 20 subjects each. Group I underwent Yogic practices, group II underwent physical exercises, group III underwent physiotherapy treatments, group IV yoga and physiotherapy treatments and group V acted as control. Prior to and after the training the subjects were tested on personal care (washing and dressing) of low back pain patients through the Oswestry low back pain disability questionnaire. Analysis of covariance was used to determine the significantly difference existing between pre test and post test on personal care (washing and dressing) of low back pain patients. The result of the study proved that due to twelve weeks of the experimental training was reduced back pain while personal care (washing and dressing) for the low back pain patients.

Key words: Personal Care, Low Back Pain, Yogic Exercise, Physiotherapy, Patients

INTRODUCTION

Low back pain is not a specific disease but rather a complaint that may be caused by a large number of underlying problems of varying levels of seriousness (Borczuk, 2013). The majority of low back pain does not have a clear cause but is believed to be the result of non-serious muscle or skeletal issues such as sprains or strains. Obesity, smoking, weight gain during pregnancy, stress, poor physical condition, poor posture, and poor sleeping position may also contribute to low back pain. Women may have acute low back pain from medical conditions affecting the female reproductive system, including endometriosis, ovarian cysts, ovarian cancer, or uterine. Nearly half of all pregnant women report pain in the lower back or sacral area during pregnancy, due to changes in their posture and center of gravity causing muscle and ligament strain.

Increasing general physical activity has been recommended, but no clear relationship to pain or disability has been found when used for the treatment of an acute episode of pain. For acute pain, low to moderate-quality evidence supports walking (Hendrick and others, 2010). Treatment according to McKenzie method is somewhat effective for recurrent acute low back pain, but its benefit in the short term does not appear significant. There is tentative evidence to support the use of heat therapy for acute and sub-chronic low back pain but little evidence for the use of either heat or cold therapy in chronic pain. Exercise therapy is effective in decreasing pain and improving function for those with chronic low back pain. It also appears to reduce recurrence rates for as long as six months after the completion of program and improves long-term function.

METHODOLOGY

Selection of Subjects:

One hundred low back pain patients are taken from the Thavanur town, Kerala. The age, height and weight of the subjects ranged from 30 to 40 years, 158 to 169 centimetres and 55 to 70 kilograms respectively. The selected subjects were randomly assigned into five equal groups of 20 subjects each. Group I underwent Yogic practices, group II underwent physical exercises, group III underwent physiotherapy treatments, group IV yoga and physiotherapy treatments and group V acted as control. Prior to and after the training the subjects were tested on personal care (washing and dressing) of low back pain patients through the Oswestry low back pain disability questionnaire. Analysis of covariance was used to determine the significantly difference existing between pre test and post test on personal care (washing and dressing) of low back pain patients.

Training Protocol:

The Group I performed Yogic practices three sessions per week on alternative days for 12 weeks and each session lasted from 20 to 40 minutes. The following yoga was performed Naukasana, Dhanurasana, Bhujangasana, Uttanapadasana, Salabhasana, Janusirasana, Pavanamuktasana and Yog Mudra. The recovery period between asana was fifteen seconds and between sets one minute. The sets and repetition was increased in progress. Group II underwent physical exercises programme three sessions per week on alternative days for 12 weeks and each session lasted from 20 to 40 minutes. The recovery period between exercises was sixty seconds and between sets three minutes. The following physical exercises are performed by the subjects straight leg race, single knee to chest stretch, hamstring stretch, hip flexes stretch, lower trunk rotation stretch, prone lumbar extension and pelvic tilt. Group III underwent physiotherapy treatments for 12 weeks. The

following physiotherapy treatments are given to the subjects. 10 min ice therapy, hot moist packs, ultra sound therapy, short wave diathermy, infra red radiation and wax bath. Group IV underwent the yoga practice and physiotherapy treatments for twelve weeks. Group V acted as control.

Research Design:

The experimental research design used in this study was random group design involving 100 subjects, who were divided at random in to five groups of twenty each. All the five groups were selected from the same population.

Statistical Technique

The data collected from the five groups prior to and post experimentation on personal care (washing and dressing) was statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA). Since five groups were involved, whenever the obtained 'F' ratio for adjusted post test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. In all the cases level of confidence was fixed at 0.05 for significance.

RESULTS

The pre and post test data collected from the experimental and control groups on personal care (washing and dressing) of low back pain patients were statistically analysed by ANCOVA and data pertaining to this, has been presented in Table I.

TABLE I
ANALYSIS OF COVARIANCE ON PERSONAL CARE OF EXPERIMENTAL AND CONTROL GROUPS

	Yoga Practice	Physical Exercise	Physio-therapy	Yoga and Physio-therapy	Control Group	S O V	SS _s	df	MS	F-ratio
Pre test Mean	4.60	4.80	4.85	4.90	4.75	B	1.06	4	0.26	0.26
SD	1.09	1.01	0.93	0.91	1.02	W	94.10	95	0.99	
Post test Mean	4.05	3.25	4.50	4.01	4.70	B	25.10	4	6.27	7.10*
SD	1.19	1.11	0.60	0.85	0.80	W	83.90	95	0.88	
Adjusted Post test Mean	4.06	3.24	4.49	3.99	4.71	B	25.13	4	6.28	7.07*
						W	83.46	94	0.88	

*Significant at .05 level, $F_{.05}(4, 95)=2.47$ & $F_{.05}(4, 94)=2.47$

Table-I shows that the pre test mean and standard deviation on personal care of low back pain patients of yoga practice, physical exercise, physiotherapy, yoga and physiotherapy and control groups are 4.60 ± 1.09 , 4.80 ± 1.01 , 4.85 ± 0.93 , 4.90 ± 0.91 and 4.75 ± 1.02 respectively. The obtained 'F' ratio value of 0.26 for pre test means on personal care low back pain patients of yoga practice, physical exercise, physiotherapy treatment, yoga and physiotherapy treatments and control groups were less than the required table value of 2.47 for the degrees of freedom 4 and 95 at 0.05 level of confidence. It reveals that there is statistically insignificant difference among the yoga practice, physical exercise,

physiotherapy treatment, yoga and physiotherapy treatments and control groups during pre test period.

The post test mean and standard deviation on personal care of low back pain patients of yoga practice, physical exercise, physiotherapy, yoga and physiotherapy and control groups are 4.05 ± 1.19 , 3.25 ± 1.11 , 4.50 ± 0.60 , 4.01 ± 0.85 and 4.70 ± 0.80 respectively. The obtained 'F' ratio value of 7.10 for post test means on personal care of low back pain patients of yoga practice, physical exercise, physiotherapy treatment, yoga and physiotherapy treatments and control groups were higher than the required table value of 2.47 for the degrees of freedom 4 and 95 at 0.05 level of confidence. It reveals that there is statistically significant difference among the yoga practice, physical exercise, physiotherapy treatment, yoga and physiotherapy treatments and control groups during post test period on personal care.

The adjusted post test means on personal care of low back pain patients of yoga practice, physical exercise, physiotherapy, yoga and physiotherapy and control groups are 4.06, 3.24, 4.49, 3.99 and 4.71 respectively. The obtained 'F' ratio value of 7.07 for adjusted post test means on personal care of low back pain patients of yoga practice, physical exercise, physiotherapy treatment, yoga and physiotherapy treatments and control groups were higher than the required table value of 2.47 for the degrees of freedom 4 and 94 at 0.05 level of confidence. It reveals that there is statistically significant difference among the yoga practice, physical exercise, physiotherapy treatment, yoga and physiotherapy treatments and control groups during adjusted post test period on personal care.

Since, the adjusted post test 'F' ratio value is found to be significant the Scheffe's test is applied as post hoc test to determine the paired mean differences, and it is presented in table-II.

TABLE II
SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST
TEST PAIRED MEANS OF PERSONAL CARE

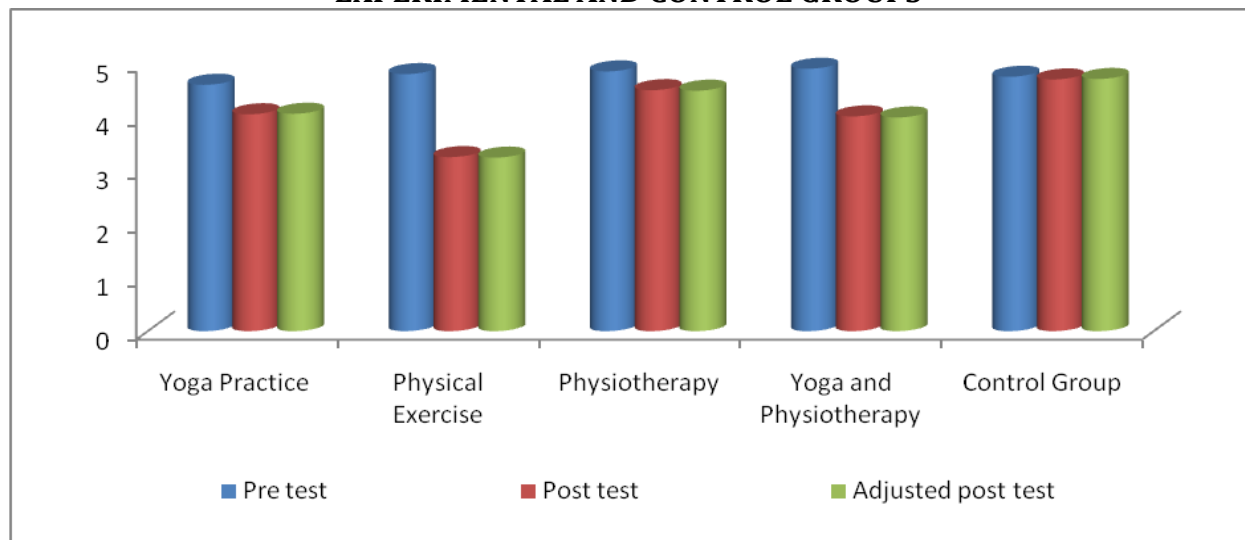
Yoga Practice	Physical Exercise	Physiotherapy	Yoga and Physiotherapy	Control Group	MD	CI
4.06	3.24				0.82*	0.65
4.06		4.49			0.43	0.65
4.06			3.99		0.07	0.65
4.06				4.71	0.65*	0.65
	3.24	4.49			1.25*	0.65
	3.24		3.99		0.75*	0.65
	3.24			4.71	1.47*	0.65
		4.49	3.99		0.50	0.65
		4.49		4.71	0.22	0.65
			3.99	4.71	0.72*	0.65

Table-II shows the Scheffe's test results that there is significant difference exists between the adjusted post tests means of yoga practice and physical exercise groups; yoga practice and control groups; physical exercise and physiotherapy groups; physical exercise and control groups; physiotherapy and control groups; yoga & physiotherapy and control groups on personal care (washing and dressing) of low back pain patients. And also there is no significant difference exists between yoga practice and physiotherapy groups; yoga

practice and yoga & physiotherapy treatments groups; physiotherapy treatments and yoga & physiotherapy treatments groups; physiotherapy and control groups.

Figure – I

**CYLINDER DIAGRAM SHOWING THE MEAN VALUE ON PERSONAL CARE OF
EXPERIMENTAL AND CONTROL GROUPS**



DISCUSSION

The result of the study showed that yoga practice, physical exercise, physiotherapy treatments, yoga & physiotherapy treatments and control groups had significant difference on personal care (washing and dressing) of low back pain patients. However physical exercises group is better influence to reduce the low back pain while personal care (washing and dressing) than other experimental groups. The following studies are supporting with my study results. Exercise therapy is effective in decreasing pain and improving function for those with chronic low back pain (*Guild, 2012*). Elastic resistance band exercises resulted in significant improvement in pain reduction (*Nitsure, et al., 2015*). The results suggest that individuals with low back pain should refrain from specific back exercises and instead focus on nonspecific physical activities to reduce pain (*Hurwitz, et al., 2005*).

CONCLUSION

The conclusion of the study stated that physical exercise are influenced to reduce the low back pain while their personal care (washing and dressing) of the subjects.

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