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Effect of Yogic Practices on Selected Physical and Physiological Variables among Male Geriatric People

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Abstract

To investigate effect of yoga practices among male geriatric people. Experimental group and Control of group with self reported Pre and Post Data. Participants in the experimental group reported significant improvement in the pain and insomnia management. Role of yogic practices in physiological conditions - mitigating pain and insomnia is in the affirmative. Nevertheless, a longer period of study involving meditative nature of practices is needed.

Keywords: Pain, Insomnia, Yogic Practices.

Introduction about Mukunda Mala

Yoga is a science of healthy living originating in Indian philosophy. There has been an immense interest in harnessing the yoga practices to disease management health promotion and maintenance. Use of Yoga as complementary and alternative therapy has predominated in public health domain as well as in medicine. Communicable and non communicable disease where potentials of yoga as a therapy is used to manage the all kind of problems and, as a mind -body rehabilitation tool. The purpose may be therapy, self-development, knowledge, clarity, transcendence or as mundane as relaxation. From this philosophical orientation, the solutions to many problems of life are sought and one such emerging area of application is holistic conceptualization of health and its achievement. The *process-oriented understanding* of yoga was characterized by the aspects such as mind-body integration, knowing self, concentration and being in present. The *technique-related understanding* emphasized on the fact that it is exercise to strengthen body and mind having specific tools like *asana*, *pranayama*, *dhyana* and so on. There was also an awareness of the therapeutic impact of yoga among practitioners and non-practitioners (Latha, 2005).

Researchers have shown that yoga is beneficial in Management of Lifestyle diseases like Hypertension, Diabetes, Asthma etc. The utility of yoga practices in cases of post traumatic stress is also widely reported. Use of yoga therapy as adjuvant to physiotherapy is the outcome of research which has clearly established the efficacy. Most of the yoga practices are non specific and standardised solution for the Male geriatric people. The need is to individualise yoga (Viniyoga) and also must specifically address the symptoms.

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Objectives

The aim of this study is to find out the effectiveness of yoga practices on selected physical and physiological components among Male geriatric people. Male geriatric people have pain, sleep disorder, energy loss, weight gain due to over care, memory loss etc. Thus the investigator has chosen these variables as these are health related variables.

Dependent Variables
Physical variables
a) Weight b) Range of Movement of arms c) Circumference.

Physiological Variables
a) Pain b) Insomnia

Independent Variables
Asana, Pranayama, Dhyana and Chanting with appropriate modifications

Test Administration
Weight - To measure the weight using Krupps bathroom weighing scale**.**
Scratch-Right-Left - To measure the distance between Right and Left finger tip using measuring tape.
Circumference - To measure the Circumference of Swollen arm.
Physiological Variables
Pain. Using Visual analog pain scale**.**

Insomnia. To find level of sleep difficulty using Athens Insomnia Scale (AIA) written by G. Firman M.D.

Sample

The sample for the study was recruited from Chennai-28. For the purpose of study 24 subjects who consented were selected and randomised into two groups consisting of 12 subjects each. The subjects were assessed at pre intervention and post intervention at 3 month period. All the subjects were tested for selected physical, and for 3 months. The control group had no intervention. Both the groups were tested for the same selected variables after a period of 3 months. The data obtained were analysed for independent t test and paired 't' test.

Viniyoga Practices

In the Tirumalai Krishnamacharya tradition, the methodology is to administer practices that are appropriate and in tune with the needs of the individual. Before prescribing intervention a comprehensive holistic assessment is made to understand the person's physical condition, physiological function status and also psychological parameters. Patanjali's Yoga Sutras clearly state that to overcome discomfort a wide range of choices are available. It could be deep breathing exercises, channelising the mind in philosophical enquiry, doing chanting of mantras by focussing on the meaning etc. The wide range of choices are offered just for the reason that each one can take up the appropriate practice according to the cause of the problem. Also the essential factor the individual's bent of mind and attitudes are very important. The sum and substance is, "One size fits all" approach cannot be of much help in yogic practices.

Accordingly practices like Tadasana, Uttanasana, Virabhadrasana, Trikonasana, Jatara Parivrtti, Ekapada Apanasana, Dwipadha pitham, Apanasana among the asanas were taught with modifications as per the capability of the individuals. The following pranayama practices Sitali or Sitkari, Anuloma Pranayama, Nadishuddi were taught as found appropriate. Dhyana practices were in accordance each one's belief system. Healing chants like 'Om', 'Om namaha', 'Om Somaya namaha' etc. were also used wherever needed. Individual supervised practices

Results and Discussions

Two groups, namely experimental and control groups was analysed with the differences in Mean value pre and post test scores on selected physical and physiological variables. The subjects were taken at random and difference between the means of two groups was studied. They were tested at 0.05 level of confidence.

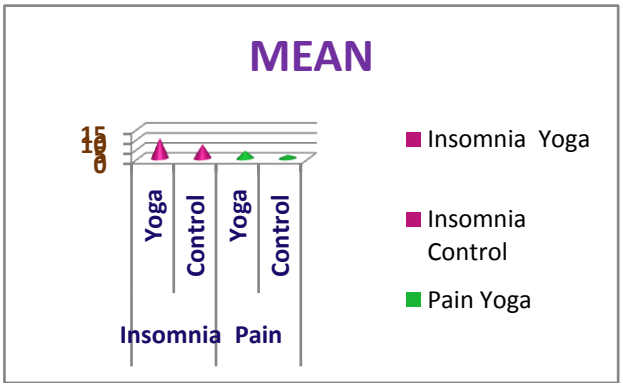
Results of Pre-Test on Yoga and Control Group

Table I. Showing the Mean, Sd and Significance of Two Groups at Baseline

Variable	Group	Mean	S.D	t-value measured	Significance
Weight	Yoga	64.95	11.94	1.253	0.223
	Control	74.87	17.68		
Scratch right	Yoga	11.07	13.29	0.460	0.650
	Control	13.79	15.57		
Scratch left	Yoga	13.29	09.30	0.414	0.683
	Control	15.02	11.14		
Circumference	Yoga	27.29	02.68	1.121	0.275
	Control	29.15	05.07		
Insomnia	Yoga	10.33	03.74	2.076*	0.053
	Control	07.16	03.83		
Pain	Yoga	03.83	02.12	2.283**	0.032
	Control	01.83	02.16		
General Fatigue	Yoga	12.25	02.63	0.882	0.387
	Control	13.33	03.33		

* Significant at 0.05 level Reference table 't' value for 0.05 level is 2.070

The Table 1 shows that pre-test mean score & weight, scratch right, scratch left, circumference have mean value of 64.95 kgs, 11.07 cm, 13.29 cm, 27.29 cm respectively for Yoga group. The same score for control group is 74.87, 13.79, 15.02, 29.15 respectively. There is no significant difference in physical variables. Similarly the mean value for Fatigue variable are 12.25, 12.83, 13.08, 11.66, 13.33, 63.08 for Yoga Group and the same scores for control group is 13.33, 11.75, 13.75, 11.08, 13.75, 62.83 respectively. There is a considerable difference between yoga and control group for the pain, insomnia variable.



Results on Yoga Group before and After Intervention

The pre test and post test scores of Physical and physiological variables below

Table II. Showing the Mean, Sd and Significance of Yoga Group Before and After Intervention

Variable	Group	Mean	S.D	t-value measured	Significance 2 tailed
Weight	Before	64.95	11.94	0.722	0.485
	After	64.58	12.55		
Scratch right	Before	11.07	13.29	2.490**	0.030
	After	07.16	09.76		
Scratch left	Before	13.29	09.30	0.000	1.000
	After	13.29	07.78		
Circumference	Before	27.29	02.68	1.650	0.127
	After	26.87	02.78		
Insomnia	Before	10.33	03.74	7.860**	0.000
	After	04.25	02.17		
Pain	Before	03.83	02.12	2.750**	0.019
	After	01.58	01.50		
General Fatigue	Before	12.25	02.63	2.280**	0.043
	After	14.50	02.35		
Physical Fatigue	Before	12.83	02.55	1.144	0.277
	After	14.41	04.73		

** Significant at 0.05 level. Reference table 't' value for 0.05 level is 1.796.

The table II shows no significant changes in mean values of weight. The scratch right shows values of pre test 11.07 cm and 7.16 cm in post test, which is significant change of 3.91 cm. The scratch left shows no change in pre and post scores. The circumference also shows only a change about 1 cm, the magnitude is not markedly high enough show statistically. The physiological variables of pain and insomnia show a significant change. Pain has a mean scores 3.83 in pre test and a mean score of 1.58 in post test. This is also statistically signified at t-value 2.750 that is at 0.03 levels. Similarly insomnia shows a change from 10.33 points to 4.25 points. The change can be quantified 5.08 point, which is quiet significant with t-value 7.860. The Fatigue scores of reduced activation and total fatigue show increased level after Yoga intervention

Discussion of Results

Only the scratch right shows significant changes, whereas scratch left shows no changes. This is due to fact many Male geriatric people in Yoga group had surgery in Right Breast and hat Post operative stiffness in Right hand range of movement. The physiological parameter of Insomnia and pain shows significant improvement. There was a considerable reduction in pain and very great improvement in quality of sleep.

Results on Control Group Before and After Intervention

Table III. Showing the mean, sd and significance of the control group before and after intervention

Variable	Group	Mean	S.D	t-value measured	Significance 2 tailed
Weight	Before	78.87	17.68	1.138	0.279
	After	76.10	16.23		
Scratch right	Before	13.79	15.57	0.183	0.858
	After	14.04	15.13		
Scratch left	Before	15.02	11.14	0.011	0.992
	After	15.00	08.86		
Circumference	Before	29.15	05.07	1.162	0.270
	After	32.25	09.46		
Insomnia	Before	07.16	03.83	0.736	0.477
	After	07.66	04.73		
Pain	Before	01.83	02.16	0.540	0.600
	After	02.08	01.37		
General Fatigue	Before	13.33	03.33	0.000	1.000
	After	13.33	02.14		

* Significant at 0.05 level . The Reference table 't' value is 2.201.

The Table III shows no significant changes in mean values of weight, scratch right, scratch left and circumferences values. The circumference shows values of Pre-test as 29.15 cm and 32.25 cm as post test score. The difference of 3.10 cm is not significant as the S.D of post score is 9.46 cm. The physiological scores of Insomnia and pain are 7.16, 01.83 point as pre scores, where as the corresponding post scores are 7.66 and 2.08 points, which are not statistically significant. All the fatigue score shows a increase, but significantly increase during 3 months of Non Intervention of Yogic practices.

Result of Post Test on Yoga and Control Group

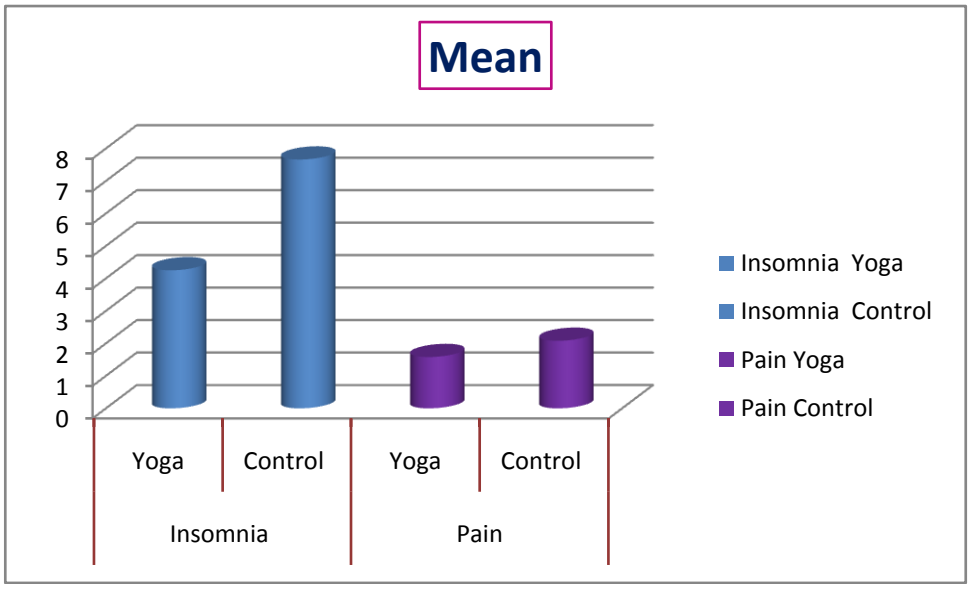
The Post test scores of physical and physiological variables on both yoga group and control group was measured and subjected to statistical treatment. The Result of Independent sample test is presented in Table IV.

Table IV. Showing the mean, sd and significance of two groups at post test

Variable	Group	Mean	S.D	t-value measured	Significance
Weight	Yoga	64.58	12.55	1.945	0.065
	Control	76.10	16.23		
Scratch right	Yoga	07.16	09.76	1.322	0.200
	Control	14.04	15.13		
Scratch left	Yoga	13.29	07.78	0.502	0.621
	Control	15.00	08.86		
Circumference	Yoga	26.87	02.78	1.888	0.072
	Control	32.25	09.46		
Insomnia	Yoga	04.25	02.17	2.270*	0.033
	Control	07.66	04.73		
Pain	Yoga	01.58	01.50	0.849	0.405
	Control	02.08	01.37		
General Fatigue	Yoga	14.50	02.35	1.268	0.218
	Control	13.33	02.14		
Physical Fatigue	Yoga	14.41	04.73	0.882	0.387
	Control	13.08	02.23		

* Significant at 0.05 level Reference table 't' value is 2.07

The Table IV shows that Post test mean scores of weight, scratch right, left and circumference have a mean value of 64.58 cm, 7.16cm, 13.29 cm and 26.87 cm for Yoga group. The same scores for control group were 76.10 kg, 14.04 cm, 15.0 cm, 32.25 cm respectively. There is no significant difference in physical variable.



The scores for physiological variables of insomnia and pain or Yoga group are 4.25, 1.58 points and that for Control group are 7.66, 2.08 points. There is a significant decrease in insomnia points for Yoga group.

Results and Discussions

Two groups, namely experimental and control groups was analysed with the differences in Mean value pre and post test scores on selected physical and physiological variables. The subjects were taken at random and difference between the means of two groups was studied. They were tested at 0.05 level of confidence.

Discussion of Hypothesis

For the purpose of this study it was hypothesized that the Yogic practices would improve the selected physical and physiological variables on Yoga group compared with control group. The result presented in Tables I, II, III & IV proved that there was significant difference in Range of Movement in Right arm and not much significant difference with respect to weight, scratch left circumference among the physical variables in 3 months of yoga training. Also among physiological variables, both pain and insomnia management shows much significant changes with 3 months Yogic intervention. The hypothesis for physiological variable was accepted at 0.05 levels.

Conclusions

For the purpose of study it was hypothesized that the yogic practices would improve the selected physical and physiological variables as compared with control group.

1. Weight did not significantly decrease for yoga group with 6 weeks of yoga practices.
2. Scratch right significantly decreased for yoga group with 6 week of yoga practices.
3. Scratch left did not significantly decrease for yoga group.
4. Circumference of operated arm did not significantly decrease for yoga group
5. Insomnia decreased significantly for yoga group with 3 months of yoga practice.
6. Pain drastically reduced with significant decrease for yoga group with 6 week of yoga practices.
7. Total Fatigue did not significantly reduce for yoga group..
8. The analysis of Result proved the yogic practices of viniyoga style was effective in general fatigue, pain, insomnia, Scratch (i.e.) Range of Movement of operated arm and these hypothesis was accepted at 0.05 level.
9. The Result analysis proved that yogic practices of viniyoga style were not effectively statistically proved in weight, circumference of swollen arm and fatigue. These hypotheses were rejected at 0.05 level.
10. The reason for rejection was that group is heterogeneous, sample is small, the intervention of yoga was only for 3 months.
11. The practice adherence of subjects in yoga group was in doubt due to disease processes. They were asked to practice at home, without supervision.

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