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Physiological reaction to the persuade of yogic practice on disabilities

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Abstract

Background: A disability can be something a person was born with. Or it can be the result of an illness or an accident. Many people with disability have multiple disabilities. Poverty is one of the biggest causes of disability. Poor people are most vulnerable to disability because they are forced to live and work in unsafe environments with poor sanitization, crowded living conditions, and with little access to education, clean water, or enough good food.

Objectives: The aim of research to investigate the effect of yogic practices on physiological variables of disabilities. All the subjects belonged to economically different status of families having different food habits; hence their diet could not be controlled. The personal habit of the subject and their state of mind as well as emotional stress and strains, owing to their studies and exams in school could not be controlled. However, the nullifying affect of the above factors was accepted for the purpose of the study.

Methods: Experimental method was applied on a sample to find out the effects of hatha yoga exercises on selected physiological variables. To achieve this purpose of the study, forty eight students Children with disabilities Coimbatore, Tamil Nadu, India, during the academic year 2019-2020 were randomly selected as subjects. The age selected subjects were ranged from 13 to 16 years respectively. The selected subjects were divided into two equal groups of twenty four subjects each at random. Group I underwent hatha yoga exercises for twelve weeks (for five days per week) whereas and Group II acted as control that did not undergo any special training programme apart from their regular physical education activities as per their curriculum. Since, all the subjects were Coimbatore, they had a similar academic work and a regular activities in accordance with the requirements of the Department of Physical Education and sports Sciences curriculum. The following physiological variables namely resting pulse rate, blood pressure.

Conclusion: The result of the present study physiological variables speculated significant improvement due to the hatha yoga practice of school children with disabilities. Future research should examine the effects of the specific type of exercises employed, age, gender, training status and load/intensity on yoga practices.

Keywords: hatha yoga practice, disabilities, resting pulse rate, blood pressure

1. Introduction

1.1 Yoga: Universal of God

Yoga is not a religion; it is a way of living whose aim is 'a healthy mind in a healthy body'. Man is a physical, mental and spiritual being; yoga helps in promoting a balanced development of all the three. Other forms of physical exercises, like aerobics, assure only physical well-being. They have little to do with the development of the spiritual or astral body. Yogic exercises recharge of the body with cosmic energy. One is not able to accept that certain things are unattainable for him as well, and to achieve those unattainable he take the shelter of drugs and steroids, and those artificial means leaves him of nowhere. When someone loses his peace of mind, medals and certificate becomes useless and incapable of bringing his happiness. A stressful person falls prey of unhealthy company and involves himself in unsocial and unhealthy practices. Sometimes, people are envious of other's name and fame and imagine other's prosperity as their defeat. They always remain disturbed. Everybody in his own field is mentally anxious. Here comes the role of yoga. It can play a vital role in eliminating mental stress from life. The national policy of education had given emphasis on yoga right from the school level. It states, "As a system which promotes an integrated development of body and mind, yoga will receive special attention. Efforts will be made to introduce yoga in all schools; to this end, it will be introduced in teachers training courses."

For the modern generation life has become a race track where everybody wants to come first. Right from the childhood parents expect their kids to be an all rounder, whether it is sports, cultural activities or academics. To compete with each other, today's youth specializes in every field and wants to win by any possible means. Similarly, in the field of sports and physical education the capacities have developed beyond belief. The records are made and broken every day. And being one of the competitors', human being is forgetting his own precincts. One is not able to accept that certain things are unattainable for him as well, and to achieve those unattainable he take the shelter of drugs and steroids, and those artificial means leaves him of nowhere. When someone loses his peace of mind, medals and certificate becomes useless and incapable of bringing his happiness. A stressful person falls prey of unhealthy company and involves himself in unsocial and unhealthy practices.

2. Methodology

2.1 Experimental Approach to the Problem

In order to address the hypothesis presented herein, we selected forty eight (48) students Children with disabilities, Government disability school, Thondamuthur, Coimbatore, Tamil Nadu, India. During the academic year 2019-2020 were randomly selected as subjects. The age selected

subjects were ranged from 13 to 16 years respectively. The subjects were randomly assigned in to two equal groups namely, Hatha Yoga Practice (HYPG) (n=24) and Control group (CG) (n=24). The respective training was given to the experimental group the 5 days of the weeks for the training period of twelve weeks. The control group was not given any sort of training except their routine.

2.2 Design

The evaluated physiological variables were resting pulse rate was assessed by Bio monitor the unit of measurement was in counts, and blood pressure was assessed by Sphygmomanometer and the unit of measurement was in mmHg. The parameters were measured at baseline and after 12 weeks of hatha yoga practice were examined. The intensity was increased once in two weeks based on the variation of the exercises.

3. Training Programme

The training programme was lasted for 30 minutes for session in a day, 6 days in a week for a period of 12 weeks duration. These 30 minutes included warm up for 5 minutes, 20 minutes hatha yoga practice and 5 minutes warm down. The equivalent in hatha yoga practice is the length of the time each action in total 6 day per weeks.

Table 1: Computation of mean and analysis of covariance of resting pulse rate of experimental and control group (Total Scores in beats/min)

Test	Hatha Yoga Practice Group	Control Group	Source of variance	Df	Sum of Square	Mean Square	"F" ratio
Pre test	90.53	91.80	Between	1	120.03	120.03	2.51
			Within	28	134.13	134.13	
Post test	85.60	90.33	Between	1	168.03	168.03	32.46*
			Within	28	144.93	144.93	
Adjusted post test	85.69	90.25	Between	1	143.21	143.21	27.14*
			within	27	142.46	142.46	

*significant level 0.05 level of confidence

Table value for df 1 and 28 was 3.21 Table value for df 1 and 27 was 3.22.

Table I shows that the pre test mean scores of heart rate of Experimental group I hatha yoga sadhana practices was 86.69 and control group was 85.63. The post test means showed differences due to Twelve weeks of hatha yoga sadhana practices and mean values recorded were 72.54 and 82.68 respectively. The obtained F value on pre test scores 0.15 was lesser than the required F value of 3.22 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 21.73 was greater than the required F value at 3.22. This proved that the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment.

The obtained F value at 26.28 was greater than the required F value at 3.22. This proved that there was Significant differences among the means due to Twelve weeks of hatha

yoga sadhana practices on the physiological variable resting pulse rate. The obtained adjusted mean values were presented through bar diagram in figure 1.

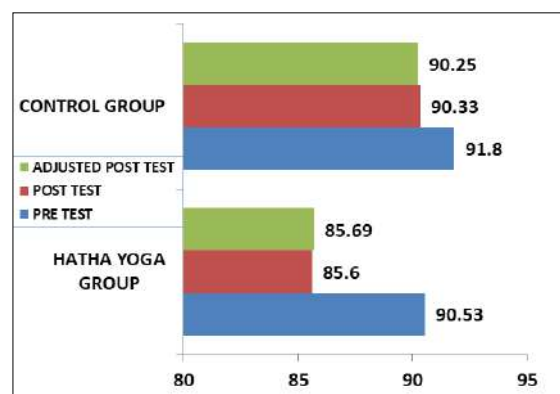


Fig 1: Bar diagram of resting pulse rate on experimental group and control group

Table 2: Computation of mean and analysis of covariance of systolic blood pressure of experimental and control group (Total Scores in beats/min)

Test	Hatha Yoga Practice Group	Control Group	Source of variance	Df	Sum of Square	Mean Square	"F" ratio
Pre test	138.27	140.40	Between	1	340.13	340.13	2.34
			Within	28	408.53	408.53	

Post test	129.67	139.47	Between	1	720.30	720.30	39.62*
			Within	28	509.07	509.07	
Adjusted post test	129.70	139.43	Between	1	655.21	655.21	34.78*
			Within	27	508.62	508.62	

*significant level 0.05 level of confidence

Table value for df 1 and 28 was 3.21 Table value for df 1 and 27 was 3.22.

Table II shows that the pre test mean scores of systolic blood pressure of Experimental group I hatha yoga sadhana practices was 138.27 and control group was 140.40 The post test means showed differences due to Twelve weeks of hatha yoga sadhana practices and mean values recorded were 129.67 and 139.47 respectively. The obtained F value on pre test scores 2.34 was lesser than the required F value of 3.22 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 39.62 was greater than the required F value at 3.22. This proved that the differences between the post test mean at the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 34.78 was greater than the required F value at 3.22. This proved that there was Significant differences among the means due to Twelve weeks of hatha yoga sadhana practices on the physiological variable systolic blood pressure.

The obtained adjusted mean values were presented through bar diagram in figure 2.

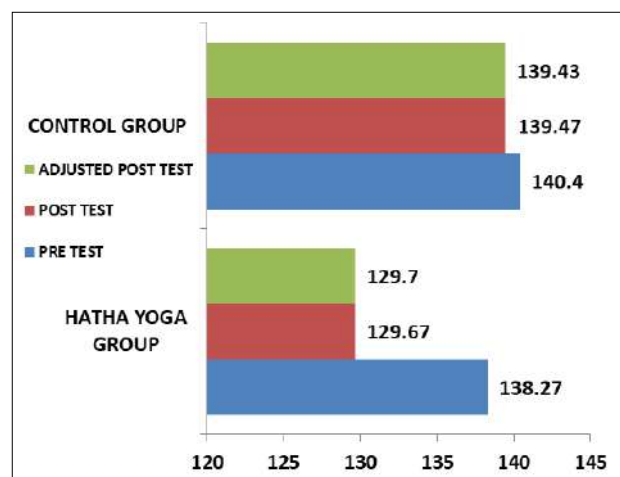


Fig 2: Bar diagram of systolic blood pressure on experimental group and control group

Table 3: Computation of mean and analysis of covariance of diastolic blood pressure of experimental and control group (Total Scores in beats/min)

Test	Hatha Yoga Practice Group	Control Group	Source of variance	Df	Sum of Square	Mean Square	"F" ratio
Pre test	90.53	91.80	Between	1	120.03	120.03	2.51
			Within	28	134.13	134.13	
Post test	85.63	90.33	Between	1	168.03	168.03	32.46*
			Within	28	144.93	144.93	
Adjusted post test	85.69	90.25	Between	1	143.21	143.21	27.14*
			Within	27	142.46	142.46	

*significant level 0.05 level of confidence

Table value for df 1 and 28 was 3.21 Table value for df 1 and 27 was 3.22.

Table-III shows that the pre test mean scores of diastolic blood pressure of Experimental group I hatha yoga sadhana practices was 90.53 and control group was 91.80 The post test means showed differences due to Twelve weeks of hatha yoga sadhana practices and mean values recorded were 85.60 and 90.33 respectively. The obtained F value on pre test scores 2.51 was lesser than the required F value of 3.22 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal. The post test scores analysis proved that there was significant difference between the groups as the obtained F value at 32.46 was greater than the required F value at 3.22. This proved that the differences between the post test mean at the subjects were significant.

Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 27.14 was greater than the required F value at 3.22. This proved that there was Significant differences among the means due to Twelve weeks of hatha yoga sadhana practices on the physiological variable diastolic blood pressure. The obtained adjusted mean values were presented through

bar diagram in figure 3.

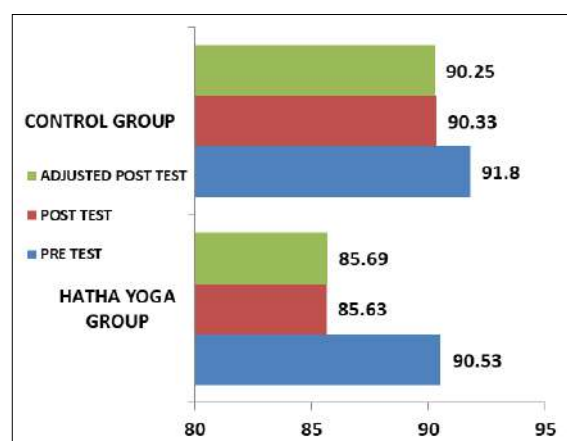


Fig 3: Bar diagram of diastolic blood pressure on experimental group and control group

4. Discussion and Findings

The present study was the influence of yoga practice on school children with disabilities. The results of this study

indicated that yoga practice is more efficient to bring out desirable changes over the resting pulse rate, blood pressure of the school boys. Toth *et al.*, (2012) Effect of Resistance Training on Physical Disability in Chronic Heart Failure Journal List HHS Author Manuscripts. Kiani Fatemeh *et al.*, (2010)^[7] the effect of rehabilitation program on mechanical efficiency, heat rate and Vo2max in spastic children. Mayara Borkowske *et al.* (2007) Effects of Physical Exercise For Adults With Intellectual Disabilities. Hence, it was concluded that for physiological variables improvement on yoga practice of disabilities.

5. Conclusions

Within the limitation and delimitations set for the present study and considering the results obtained, the following conclusion were drawn.

1. The physiological variables resting pulse rate was significantly improved due to twelve weeks of hatha yoga sadhana among children with disabilities comparing to the control group.
2. The physiological variable resting systolic blood pressure was significantly decreased due to twelve weeks of hatha yoga sadhana among children with disabilities comparing to the control group.
3. The physiological variable diastolic blood pressure was significantly decreased due to twelve weeks of hatha yoga sadhana among children with disabilities comparing to the control group.
4. Hatha yoga sadhana group was effective than control group for physiological variables (Resting pulse rate, systolic blood pressure and diastolic blood pressure).

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