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Effect of yogic practices on resting heart rate of differently abled students

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Abstract

Effect of yogic practices on resting heart rate in differently abled students was examined. Sixty down syndrome students from Pratheeksha special school, Mukkam, Kozhikode District aged between 15 and 18 years were selected as subjects randomly. The subjects were equally divided into control group and experimental group. Yogic practices were assigned for twelve weeks to the experimental group. The control group was not allowed to participate in the programme. To all the subjects a pre-test and a post-test data were collected through bio monitor. The data collected from the subjects were statistically analyzed with 't' ratio to find out the significant difference among experimental and control group on resting heart rate. The analysis reveals that the yogic practices significantly decreased the resting heart rate of differently abled students.

Keywords: Yogic Practices, Heart Rate.

Introduction

Children who deserve special need are called to be differently abled children. "Special Needs" is an umbrella underneath which a staggering array of diagnoses can be wedged. children with special needs may have mild learning disabilities or profound mental retardation, developmental delays that catch up quickly or remain entrenched; occasional panic attacks or serious psychiatric problems. The designation is useful for getting needed services, setting appropriate goals, and gaining understanding for a child and stressed family. Down syndrome is a congenital disorder arising from a chromosome defect, causing intellectual impairment and physical abnormalities including short stature and a broad facial profile. It arises from a defect involving chromosome 21, usually an extra copy (trisomy-21). Asanas provides the means for people of any age not only to get and stay in shape but also to develop balance, coordination, and a sense of centeredness. It renews, invigorates, and heals the body, stretching and toning the muscles, joints, and spine and directing blood and oxygen to the internal organs including the glands and nerves. (Krishna, 1998) [2]

During exercise or immediately after exercise, the heart rate can give information about the fitness level and health. It is observed that the lower the resting heart rate is the healthier heart. For calculating resting heart rate, sit quietly for 10 minutes before checking the heart rate. (Seidel *et al.* 2007) [4].

Pathak (2008) [3] determined that twelve weeks of graded exercise on Deaf Dumb children of 14 to 20 years age showed adaptive changes in Resting Heart Rate, Vital Capacity and Body Composition.

Hence it was proposed to find out the effect of 12 weeks yogic practice on resting heart rate in differently abled students.

It was hypothesized that 12 weeks of yogic practice will show significant changes on resting heart rate in differently abled students.

Methodology

The purpose of the study was to find out the effect of physical response to yogic practices among differently abled students. To fulfill the purpose of the study sixty down syndrome students were randomly selected from Pratheeksha special school, Mukkam, Kozhikode District, Kerala. They have down syndrome and their age ranged between 15 and 18 years. The selected subjects were divided into two equal groups consisting of thirty each. No

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attempt was made to equate the groups. Experimental group I underwent yogic practices and Group II acted as control group, the subjects in control group were not engaged in any training programme.

Yogic Practices

Asanas, pranayama and meditation were practiced by the experimental group for 45 to 50 minutes. Five min warm up. After that Tadasana, Pathahasthasana, Trikonasana, Vajrasana, Ustrasana, Sasangasana, Matchyasana, Bhujangasana, shalabhasana and savasana were practiced. Kapalapathi and Nadi suddhi pranayama were added in the training programme. Meditation for fifteen minutes and finally Yoga nidra was done by the experimental group.

Bio monitor was used to measure the resting heart rate of the subjects. The heart rate of the subjects was monitored through

using the method of finger plythornography with the help of an auto-electronic transducer on finger. Before taking the resting heart rate, the subjects were asked to sit comfortably on chair for fifteen minutes. The investigator fixed the sensor unit to the finger of the subject. Then the bio monitor was switched on by pressing the on switch. The heart rate per minute was shown by the digital meter. After a minute, the digital meter showed the subject’s heart rate, score was recorded in beats per minute.

Analysis of Data and Interpretation of Results

The data was collected before and after the training period for both control and experimental groups on resting heart rate. The data was statistically analyzed by ‘t’ ratio. The level of significance was fixed at 0.05 level of confidence.

Table 1: Computation of ‘t’ ratio on Resting heart rate of Experimental Group and Control Group

Groups	Pre-test mean	Pre-test S. D (±)	Post-test mean	Post-test S. D (±)	‘t’ ratio
Control Group	86.37	6.02	86.23	6.03	0.57
Experimental Group	85.97	6.05	80.43	5.66	6.39*

* Significant at 0.05 level for the degrees of freedom 1 and 29, 2.045

Table shows that the ‘t’ ratio on resting heart rate of experimental group was 6.39. Since the value was higher than the required table value of 2.045, it was found to be statistically significant at 0.05 level of confidence for degrees of freedom 1 and 29. And the obtained ‘t’ ratio between pre and post test of control group 0.57 was lesser than the required table value of 2.045, found to be not statistically significant.

This significant improvement may be due to the effect of 12 weeks of yogic practices on experimental group. The results

of this study indicate that there was a decrease in resting heart rate of the experimental group after 12 weeks of yogic practices. So the hypothesis is accepted.

The results of this study indicate that there was a significant change in resting heart rate of the experimental group after twelve weeks of yogic practices.

The above finding of the present study is in agreement with the studies conducted by Jyotsana *et al.* (2003) [1], Telles *et al.* (1993) [6] and Sivasankaran *et al.* (2007) [5].

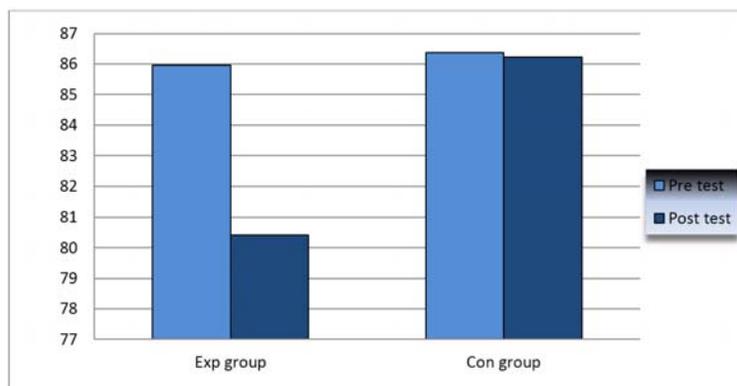


Fig 1: Bar diagram showing the mean values of resting heart rate for experimental and control groups.

Conclusion

With the limitation of the study, the following conclusion is drawn.

Results of the study indicate that yogic practices decrease the resting heart rate in differently abled students.

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