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Effect of yogic intervention on the vital capacity of school going children

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Abstract

The daily practice of yoga, which has its origins in ancient Indian culture, is associated with attaining optimal levels of physical, mental, intellectual, and spiritual wellness. Pranayama and Asana are the two disciplines that make up yoga. These have a lot of favorable impacts on the body's physiology, manifesting in various systems. The current experiment was initiated in response to evidence that was published on the influence that asanas and pranayama had on the weight of male school-aged youngsters. To determine whether or not there is a difference in weight between the participants who practiced yoga postures (asanas), breathing exercises (pranayama), or both (asana-pranayama combinations), and the subjects who did not practice any kind of yoga. It was decided to pick 20 male student volunteers from the city of Gwalior in the state of M.P., India, whose ages ranged from 14 to 18. A random selection approach was used to distribute the subjects equitably across the four groups, consisting of three experimental and one control group. Experimental Group A received asanas (five individuals), Group B received pranayama (five subjects), and Group C received a combination of asanas and pranayama (five subjects). The control Group D received no training for the course of the trial, which lasted for twelve weeks. They spent forty-five minutes, six days a week doing pranayama and asanas, except for Sunday, which was their weekly day off. The combination of asana and pranayama has been shown to considerably enhance Vital capacity in youngsters who are attending school.

Keywords: Chronic low back pain, interferential current electrotherapy, physiotherapy, rehabilitation

Introduction

The term "yoga" comes from the Sanskrit word "Yuj," which may be translated as "to unite." Yoga can be translated as "unity" or "oneness." The spiritual concept of "union" refers to the coming together of "individual consciousness" and "universal awareness" in order to depict this coming together or unification. On a more pragmatic level, yoga is a technique of balancing and harmonising not just the physical body but also the mind and the emotions. This is accomplished by the practise of asana, pranayama, mudra, bandha, shatkarma, and meditation, and it is a prerequisite that has to be fulfilled before one may unite with the higher reality (Swami Satyananda Saraswati, 2004) ^[1]. Swami Vivekananda's translation of yoga describes it as the "restriction of the mind-stuff from adopting diverse shapes," yet another interpretation defines yoga as "the management of thought-waves in the mind" (as translated by Swami Prabhavananda of Sri Ramkrasana Math). According to another observation made by the Maharsi, "thereafter the soul abides in its genuine self." To put it another way, yoga is about being one's true self. Yogic practises, which are part of an ancient tradition with Indian roots, have been shown to result in optimal mental, intellectual, spiritual, and physical health. The practise of yoga has been shown to have a lot of positive physiological impacts on a variety of our body's systems. Regular practise of yoga has been shown to result in significant improvements in the cardiorespiratory, thermoregulatory, and psychologic functions of healthy individuals (Ray US, Mukhopadhyaya S, Purkayastha SS, Asnani V, Tomer OS, Prasad R, 2001) ^[21] (Subbalakshmi NK, Saxena SK, Urmimala, D'Souza UJA, 2005) ^[19] Madanmohan, Siva Yogic practises have also been discovered to be most useful in alleviating hypertension (Murugesan R, Govindarajulu N, Bera TK, 2000) ^[22], bronchial asthma (Sathyaprabha TN, Murthy H, Murthy BT, 2001) ^[39], diabetes mellitus (Telles S, Naveen KV, 1997) ^[23], and coronary artery disease (Manchanda SC, Narang R, Reddy KS, Sachdeva U An earlier research found that school students who practised pranayama had a substantial rise in their PEFR levels (Sivapriya DV, Subamalani S, Shyamala T., 2010) ^[25].

The combination of different kinds of asanas and pranayama has also led to a significant increase in hand grip strength and hand grip endurance. It has also led to an increase in maximum expiratory pressure, maximum inspiratory pressure, forced expiratory volume, forced expiratory volume in first second, and peak flow rate (Madanmohan, Lakshmi J, Kaviraja U, Ananda BB, 2003) [26]. Regular practice of various types of pranayama for fifteen days (Ankad RB, Balachandra AS, Herur A, Patil S, Chinagudi S, Shashikala GV, 2011) [28] and practice of asanas, pranayamas, and Surya namaskar (Makwana K, Khirwadkar N, Gupta HC, 1988) [29] has led to a significant increase in the mean amount of time that a person can hold their breath. It is necessary to have an understanding of the influence that practicing asanas and pranayama alone has on weight in order to determine what, if any, advantages may be gained from the practice of yoga.

Methodology

One hundred twenty (20) male school students in the age range of 14-18 from the city of Gwalior in the state of M.P. in India were chosen at random to participate in the study. A random approach was used to split the individuals into four treatment groups and one control group. Group A was given the treatment of asanas, which included 05 subjects; Group B was given the treatment of pranayama, which included 05 subjects; Group C was given the combination of asana and pranayama, which included 05 subjects; and Group D served as the control group, which included 05 subjects. A total of 20 subjects were chosen for the study. The training regimen lasted for a total of only six weeks of research.

Training protocol

The temperature ranged from 25 degrees Celsius to 30 degrees Celsius over a period of six weeks at Gwalior city. The experimental training started at nine in the morning and lasted for forty-five minutes. It was carried out six days a week, with Sunday being the day off each week. Every single person who was a part of the experimental group was prepared to study Pranayama and Asana. Group 'A' represents the Pranayama group, Group 'B' represents the Pranayama group, Group 'C' represents the Combination of Asana and Pranayama, and Group 'D' represents the control group that did not take part in the training programme. The subjects of experimental group 'A' practised Asana (Matsyasana, Halasana, Bhujangasana, Dhanurasana, Chakrasana, Ardha Matsyendrasana, Paschimottanasana, Vajrasana, Standing kati chakrasana, Tadasana and group 'B' practised Pranayama (Anuloma Viloma and Bhastrika) and group 'C' practised combination of Asana and Pranayama (Surya Namaskar, Sarvangasana, Matsyasana, Halasana, Bhujangasana, Shalvhasana, Dhanurasana, Chakrasana, Ardha Matsyendrasana, Paschimottanasana and pranayama).

Analysis and interpretation of data

For the analysis of data, Descriptive statistics were applied which were mean, and standard deviation. Furthermore, One Way Analysis of Covariance (ANCOVA) was used to obtain the mean difference, and the post hoc test HSD turkey was applied. For this study, the level of significance was set at 0.05 level of significance.

Table 1: Descriptive Statistics of Vital Capacity of students of school going

| Groups | N | Mean | ST Division |
|-----------------|----|--------|-------------|
| Asana | 05 | 15.15 | 1.159 |
| Pranayama | 05 | 15.90 | 1.411 |
| Asana pranayama | 05 | 15.65 | 1.433 |
| Control | 05 | 15.80 | 1.453 |
| Total | 20 | 15.625 | 1.332 |

Table no.1 reveals that the values of descriptive statistics for the experimental groups (Asanas Group, Pranayama Group, and Asana Pranayama Group) and the Control Group for the vital capacity of students. It reveals that the mean and standard deviation (S.D.) values of the Asana' Group, Pranayama Group, Asana Pranayama Group and the Control Group were determined to be 15.15±1.159, 15.90±1.411, 15.65±1.433, 15.80±1.453 respectively. total the same is 15.625±1.332.

Table 2: Descriptive Statistics of Post-Data of Vital Capacity

| Groups | N | Mean | Std. Deviation |
|-----------------|----|--------|----------------|
| Asana | 05 | 2.4900 | .13338 |
| Pranayama | 05 | 2.8150 | .09333 |
| Asana pranayama | 05 | 3.6650 | .23458 |
| Control | 05 | 2.1950 | .11459 |
| Total | 20 | 2.7912 | .57373 |

Table No.2 indicates the values of descriptive statistics of the experimental Groups (Pranayama Group, Asana group, and Asana pranayama Group) & Control Group for the physiological variable of vital capacity, which shows that the mean and S.D. values of the Pranayama Group, Asana group, and Asana pranayama Group & Control Group are found to be 2.8150±.0933, 2.490±.1333, 3.6650±.2345 and 2.791±.114 respectively. Total the same is 2.7912±.573.

Table 3: Summary of one way ancova of vital capacity of school going children

| Source | Type I Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-----------------------|----|-------------|---------|------|
| GROUP | 23.896 | 3 | 7.965 | 336.337 | .000 |
| Error | 1.776 | 75 | .024 | | |
| Total | 649.290 | 80 | | | |
| Corrected Total | 26.004 | 79 | | | |

Table no.3 indicates the values test of the difference between the subject effects, which shows that there was a significant difference in post-test values of the Vital capacity variable for the four selected Groups, as the value was found to be 336.337, which was significant at 0.05 level. indicates the values test of the difference between the subject effects, which shows that there is a significant difference in post-test values of the physiological variable of Vital capacity for the three selected Groups which proves to be the base of the Analysis of Co-Variance. Also, a significant difference is found between the post-test values of the experimental and Control Group as the value has been found to be .000, which is significant at 0.05 level,

Table 4: Asana group and pranayama group

| | | | | |
|----|----|---------|------|------|
| AS | P | -.327* | .049 | .000 |
| | AP | -1.179* | .049 | .000 |
| | C | .298* | .049 | .000 |
| P | AS | .327* | .049 | .000 |
| | AP | -.852* | .049 | .000 |
| | C | .625* | .049 | .000 |
| AP | AS | 1.179* | .049 | .000 |
| | P | .852* | .049 | .000 |
| | C | 1.477* | .049 | .000 |
| C | AS | -.298* | .049 | .000 |
| | P | -.625* | .049 | .000 |
| | AP | -1.477* | .049 | .000 |

Table no. 4 that there was a significant difference between Asana group and pranayama group, asana pranayama group and control group, pranayama group and asana, asana pranayama and control group, asana pranayama and asana group, pranayama group and control group, control group and asana group, pranayama group and asana pranayama group differences was found.

Discussion of Findings

In light of the fact that the F-statistic is statistically insignificant, a post hoc comparison of the adjusted means of the four treatment groups has been carried out, and the results may be seen in table 4. It is important to note that there was a significant difference found between all four groups. These p-values are all lower than 0.05, which means that they are statistically significant at the 5% level. The following are some of the inferences that might be derived from this: On the basis of the data of the physiological variable known as Vital Capacity that was collected during the post-test, there is a statistically significant gap between the corrected averages of the Asana's Group and the Control Group. There is a statistically insignificant disparity between the Pranayama Group's adjusted means and the Control Group's adjusted means when it comes to the data on Vital capacity concentration during the post-test.

Conclusions

1. There was significant difference was found among four group i e Asan Pranayam Aasan Pranayam control group.
2. Pranayam group are more effective in comparison to Asan, Pranayam, control group.

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