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Effect of six weeks of yogic intervention on oxygen percentage level

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Abstract
The regular 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 oxygen concentration in youngsters who are attending school.

Keywords: Asana, pranayama, oxygen level, analysis of covariance, yogic intervention

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 Ramkrsana 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 rat (Madanmohan, Lakshmi J, Kaviraja U, Ananda BB, 2003) [26]. Regular practise of various types of pranayama for fifteen days (Ankad RB, Balachandra AS, Herur A, Patil S, Chinagudi S, Shashikala GV, 2011) [28] and practise of asanas, pranayamas, and suryanamaskara (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 practise 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 five subjects; Group B was given the treatment of pranayama, which included five subjects; Group C was given the combination of asana and pranayama, which included five subjects; and Group D served as the control group, which included five subjects. The training regimen lasted for a total of only six weeks of the research.

Statistics

For the analysis of data descriptive statistics were applied which were mean, and standard deviation. Furthermore, Analysis of Covariance was used to obtain the mean difference along with the post hoc test HSD turkey was applied. For this study, the level of significance was set at α 0.05.

Result and Discussion

Table 1: Displays the values of descriptive statistics for the experimental groups

Groups	N	Mean	Std. Deviation
Asana	5	15.20	1.304
Pranayama	5	16.00	1.581
Asnanapraynama	5	15.60	1.517
Control	5	15.80	1.643
Total	20		

Table no.1 displays the values of descriptive statistics for the experimental groups (Asanas Group, Pranayama Group, and Asana Pranayama Group) and the Control Group for the anthropometric variable of weight. It reveals that the mean and standard deviation (S.D.) values of the Asana's Group, Pranayama Group, and Asana Pranayama Group, as well as the Control Group, were determined to be 15.60 and 1.517 The mean and standard deviation for all of the subjects was 15.65 and 1.511 respectively.

Table 2: Descriptive Statistics of adjusted

Groups	N	Mean	Std. Deviation
Asana	5	94.6000	.54772
Pranayama	5	94.4000	.54772
Asnanapraynama	5	94.6000	.54772
Control	5	94.4000	.54772
Total	20	94.5000	.51299

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 Oxygen percentage level, which shows that the mean and S.D. values of the Pranayama Group, Asana group, and Asana pranayama Group & Control Group are found to 94.6000±.5477, 94.4000±.54772, 94.600±.54772 and 94.4000 ± .54772.

Table 3: Post Hoct comparison of the group means in post-measurement after adjustment for the initial differences

Source	Type I Sum of Squares	df	Mean Square	F	Sig
Predata	2.450	1	2.450	2.919	.108
Treatment Groups	18.708	3	6.236	7.429	.003
Error	12.592	15	.839		
Total	185315.000	20			
Corrected Total	33.750	19			

R Squared = .627 (adjusted R Squared = .527)

There was a significant difference in the pre-test values of the anthropometric variable of weight for the four selected Groups, as the value was found to be .003 (Table 3 indicates that the numerical error which represents the point after 4 digits), which proves to be the base of Analysis of Co-Variance. This is shown in Table no. 3, which indicates the values test of the difference between the subject effects. Additionally, a statistically significant gap was discovered between the post-test scores of the experimental group and those of the control group. The value that was discovered to be 8.15 was statistically significant at the 0.05 level.

Table 4: Dependent Variable: POSTDATA

A	95.954[a]	.412	
P	96.246[a]	.412	
AP	97.754[a]	.412	
C	95.046[a]	.412	
a. Covariates appearing in the model are evaluated at the following values: PRE DATA = 94.5000.			

The adjusted means and standard deviations of each of the post-testing Groups are shown in table 2, which may be seen here. Which one is for the Asanas Group with the numbers 95.954 and .412, the Pranayama Group with the numbers 96.245 and .412, the Asana Pranayama Group with the number 97.745 and .412, and the Control Group with the numbers 95.064 and .412.

Table 5: Anova result

(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.[b]
A	P	-.292	.585	1.000
	AP	-1.800*	.579	.043
	C	.908	.585	.850
P	A	.292	.585	1.000
	AP	-1.508	.585	.126
	C	1.200	.579	.336
AP	A	1.800*	.579	.043
	P	1.508	.585	.126
	C	2.708*	.585	.002
C	A	-.908	.585	.850
	P	-1.200	.579	.336
	AP	-2.708*	.585	.002

Conclusion

From the result, we can conclude that when Asana was compared against the pranayama and control group it was found to be significant at .292 and .908 but was found to be insignificant against the Asana Pranayama group at 1.800. when Pranayama was tested against group asana Pranayama Group and the control group it was found to be insignificant among all. When Asana pranayama was tested against the asana and control group it was found to be significant at 1.800 and 2.708 and was insignificant against the pranayama group. And when the control group was tested against the asana and pranayama groups it was found to be significant at .908 and 1.200 but insignificant against the asana pranayama group.

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