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Effect of twelve weeks nostril dominance on haemoglobin among college going students

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Abstract

The purpose of this study was to determine the effects of various technique of Yoga Danda practice and the effect of nostril dominance on Hemoglobin. Study was further delimited to investigate the effect of nostril dominance breathing viz.:

a) Left nostril dominance b) Right nostril dominance c) Both Nostril dominance

The study was conducted on One hundred and twenty males B.P. Ed. Students with a view the determine the comparative effect of three different techniques of Yoga danda on hemoglobin. All the subjects were randomly divided into four groups in such a way so that each group contains 30students (30 in control group, 30 in right side Yoga danda group, left side Yoga danda group & both side Yoga danda group). Random group design was employed for the experiment. The respective yogic exercise programme was conducted for twelve weeks for all the experimental groups. The result of t –ratio & ANCOVA was applied at 0.05 level of significance revealed no significant improvement was found in hemoglobin.

Keywords: yoga danda, nostril dominance, hemoglobin and yoga

Introduction

We breathe day and night even during sleep. breathing pattern changes after hour (Approx) from right nostril to left nostril or vice versa nadi when flow of breathing is more through right nostril, we call it right nostril dominated, whereas of the flow of breathing is more through left nostril, we call it left nostril dominated.

The most prominent organ in this system is nostril passes. Yogis have long back observed that airflow through two nostrils throughout a day is not of uniform pattern. It fluctuates; between left nostril dominance or right nostril dominance or both nostril dominance. Indian yogis have also long back understood causes of this typical air passes mechanism and could manipulate it with yogic exercises.

Yoga exercises producing regeneration based on the principle of the muscles, in fact, release and relax after stretching for a specific time period in a tense and isometric position against specific resistance. This results in inhibition of motor neurons. Such relaxation differs from common stretching exercises, which passively stretch the shortened muscles without deliberate focus on influencing motor neurons. Yogic exercises providing regeneration influence the vital neuro-vegetative plexuses (Chakras) and the endocrine glands. By doing this, the metabolism and overall-regeneration of the athlete is positively enhanced.

Statement of the Problem

The purpose of this study was to find out the effect of The Effect of Nostril Dominance On selected Hemoglobin Parameter.

All subjects were randomly assigned to three experimental groups as follows:-

	Groups	Subjects Number
A	Control Group	30
B	Experimental Group of Left Nostril Dominance	30
C	Experimental Group of Right Nostril Dominance	30
D	Experimental Group of Both Nostril Dominance	30
	Total	120

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Materials and Methods

One hundred and twenty male students in the age group ranging between 19 to 25 years and studying in BP Ed were randomly selected as subjects from Noida College of Physical Education (UP). All the subjects were randomly divided into 4 groups, 30 students in each group (30 in control group, 30 in experimental group of left nostril, 30 in experimental group in right nostril dominance & 30 in experimental of both nostril dominance). The yogic training was carried out for a total duration of twelve weeks.

Collection of Data

The data was collected hemoglobin parameter by administering the respective tests. The tests were administered at the play fields of Noida College of Physical Education, Noida (U.P.). To ensure that the data collected was reliable; each subject was given sufficient number of trials to Perform the respective tests for each variable.

The data was collected before the start of the experimental treatment (Pre-test) and end of six weeks and twelve weeks

training period (Post-test). The tests used were explained to the subjects prior to their administration. The subjects were given a chance to become familiar with the test through practice.

Reliability of Data

All the instruments and equipments used were purchased from standard agencies and companies.

Tester Competency and Reliability of Data

The tester competency was evaluated together with the reliability of tests. Test-retest method was employed to determine reliability of the scores of subjects. The scores of subjects in the various tests were recorded on two days with a gap of one day in between under identical conditions. Pearson's product moment correlation was computed between the two measures of each variables and the reliability coefficient are shown in Table - 1. It was observed that the tester's reliability was significantly high, establishing the competency of the scholar to administer the tests.

Table 1: Co-efficient of Reliability of Different Variables

S. No.	Variables	Control Group		Left Nostril Dominance		Right Nostril Dominance		Both Nostril Dominance	
		Pre- Test	Post- Test	Pre- Test	Post- Test	Pre- Test	Post- Test	Pre- Test	Post- Test
1.	Hemoglobin	.90*	.89*	.93*	.88*	.87*	.92*	.92*	.93*

Significant at .01 level N=30

r.01 (28) = .463

Administration of Training Programme

All the subjects were assembled at the play field of Noida College of Physical Education, Noida, (U.P.) and were briefed on the three types of training.

The three experimental groups (B, C & D) were administered three types of practices i.e. left nostril dominance, right nostril dominance and both nostrils dominance group. Group A did not participate in any kind of practice except attending the regular college programme. The three experimental groups also participated in the regular college programme.

The training was conducted for a period of twelve weeks, five days a week excluding the time consumed for conducting pre-test and posttest. The scholar demonstrated the training to each group, all the subjects of the experimental groups participated in their respective training programme. Sufficient and required recovery time was provided in between the tests. The programme was administered for a period of twelve weeks, five days a week. The subjects were classified into four groups (A, B, C, D) consisting of 30 subjects each. Group A was the control group and B, C, D groups were the experimental groups. Three types of experimental training programmes were developed after an exhaustive consultation with experts, through literature review and critical deliberation with exercise physiologist and test and measurement specialists.

Nostril dominance training programme of three variations was developed after initial practiced feasibility testing. For each experimental group (B, C, D) respectively left nostril dominance, right nostril dominance and both nostrils dominance, specific training programme's were developed. Each programme contained of atleast 10 asanas with one relaxative asana, one pranayama and yoga danda practices.

In addition to the twelve weeks training programme which was conducted one extra week was devoted initially for orienting the subjects to each aspect of the training programmes.

Training programmes were personally supervised by the

research scholar and his two assistants throughout the twelve weeks duration.

The details of the training programme were as follow.

1. Five days a week training session.
2. Each session of training was of 50 minutes duration.
3. Total training programme was of twelve weeks duration.

Contents of training programme for each experimental group were as follows:

1. Left nostril dominance

Procedure

The subjects in appropriate dress were instructed to lie down in supine position (Shavasana) for 2 minutes. Then they were directed to perform asanas towards their right side like vakrasana, ardhmatsyendrasana, janushirasana (figure-1), akarnadanurasana, gomukasana, garudasana, vrikshasana, konasana, trikonasana and standing katichakrasana for 35 minutes. The subjects were asked to do chandrabadan pranayama for 5 minutes. Then the subjects were asked to turn their body towards their right side for 3 minutes. Yogadanda was kept towards right side of the armpit for 5 minutes. It was assumed that they were left nostril dominated.

Scoring

The subject's nostril breathing was checked and it was confirmed as the nostril dominance. A mirror technique was used to assess the nostril dominance. The percentage of left nostril dominance as indicated by the impression of the subjects expired air remained on the mirror was recorded.

2. Right nostril dominance

Procedure

The subjects in appropriate dress were instructed to lie down in supine position (Shavasana) for 2 minutes. Then they were directed to perform asanas towards their left side like vakrasana, ardh matsyendrasana, janushirasana,

aakarndhanurasana, gomukasana, garudasana, vrikshasana, konasana, trikonasana and standing katicakrasana for 35 minutes. The subject were asked to do Suryabedan pranayama for 5 minutes. Then the subjects were asked to turn their body towards their left side for 3 minutes. Yogadanda was kept towards left side of the armpit for 5 minutes. It was assumed that they were right nostril dominated.

Scoring

The subject's nostril breathing was checked and it was confirmed as the nostril dominance. A mirror technique was used to assess the nostril dominance. The percentage of right nostril dominance as indicated by the impression of the subjects expired air remained on the mirror was recorded.

3. Both nostril-dominance

Procedure

The subjects in appropriate dress were instructed to lie down in supine position (Shavasana) for 2 minutes. Then they were directed to perform asanas like vipritkarni, halasana, bhujangasana, salbhasana, dhanurasana, paschimottasana (figure-4), yogamudra, vakasana, mayurasana and padahastana for 35 minutes. The subjects were asked to do Anulom viloma pranayama for 5 minutes. Then the subjects were asked to take rest for 3 minutes. Yogadanda was kept towards both sides of the armpit for 5 minutes. It was assumed that they are both nostrils dominated.

Scoring

The subject's nostril breathing was checked and it was confirmed as the nostril dominance. A mirror technique was used to assess the nostril dominance. The percentage of both nostrils dominance as indicated by the impression of the subjects expired air remained on the mirror was recorded.

Haemoglobin Content

Equipment: Sahil's Haemoglobino meter

Description: Sahil's Acid Haematin method was used for the estimation of hemoglobin content of the blood.

The hemoglobin pipette the hemometer tube and stirrer were thoroughly cleaned and dried. In the hemometer tube N/10

hydrochloric acid was taken up to the 20th division on the comparator in the space provided for it. The pricking needle was sterilized by scabbing it with rectified prite). The top of the left ring finger of the subject was cleaned by using spirit. The finger was allowed to dry up and then punctured boldly with the pricking needle. Exactly 20 cubic ml. of blood was drawn into the piped by sanction.

The pipette was then dipped into N/10 hydrochloric acid by contained in the hemometer tube and thoroughly mixed by rinsing the pipette with the acid several times.

The tube was allowed to stand in the comparator for about ten minutes for the maximum development of the colour. Distilled water was added to solution it was stirred to ensure through mixing, when the colour of the mixture matched with that of the standard, the tube was taken out of the comparator and the stirrer was removed from the tube. The reading on the hemoglobin scale on the tube was taken at the level of the lower meniscus of the solution, avoiding parallel error and recorded.

Scoring: The scale was provided in grams of hemoglobin content per 100ml of blood.

Statistical Technique for Analysis of Data

Analysis of Co - Variance was employed to analyze yogic training effect after twelve weeks of yogic training the level of significance was kept at 0.05 level. Further post hoc mean comparison was also made to find out when F value where found significant.

The pre and posttest after six weeks of yogic training were subjected to t-ratio test to find out significance of mean difference between pre and posttest for each variables. Further Analysis of Co-variance was employed to analyze yogic training effect after twelve weeks of yogic training. The level of significance was kept at 0.05 level.

Haemoglobin

To find out whether the experimental treatment had effected any changes in Hemoglobin after six weeks of yogic training programme (left nostril dominance, right nostril dominance, both nostrils dominance), t test was used. Analysis of data pertaining to this is presented in table 1.

Table 1: Comparison of mean values between pre and post data on haemoglobin after six weeks yogic training (in grams/100 ml.)

Group	Tests						OM	SEM	t-ratio
	Pre			Post					
	M	SD	SE	M	so	SE			
Control Group	10.84	0.54	0.10	10.85	0.55	0.10	0.02	0.01	1.98
Left Nostril Dominance Group	11.09	0.79	0.14	11.15	0.81	0.14	0.06	0.03	2.00
Right Nostril Dominance Group	11.49	0.95	0.17	11.67	0.99	0.18	0.18	0.10	1.80
Both Nostrils Dominance Group	11.16	0.81	0.14	11.31	0.74	0.13	0.15	0.08	1.90

*Significant at 0.05 level of confidence.

N = 30

t .05 (28) = 2.04

Table-1 clearly reveals that the t value for Left Nostril Dominance, Right Nostril Dominance and Both Nostrils Dominance is insignificant on Hemoglobin. Since the obtain t value 1.90, 1.80 and 2.00 are lesser than the tabulated t value required to be significant. This finding of insignificant t value clearly implies that the respective nostril dominance yogic training has not improved in Hemoglobin. Further t value was also found not significant for control group showing that there

is also no significant change in control group.

To determine which of the experimental treatment (left nostril dominance group, right nostril dominance group, both nostrils dominance, "Group) was most effective in bringing out a significant change in Hemoglobin after twelve weeks of yogic training. Analysis of co-variance was used. Analysis of data pertaining to this is presented in table 2.

Table 2: Analysis of co – variance of the means of the three experimental groups and control group in haemoglobin performance after twelve weeks

Means	Groups					Sum of Square	df	Means Sum of Square	F-ratio
	Control Group	Left Nostril Dominance Group	Right Nostril Dominance Group	Both Nostrils Dominance Group					
Pre Test Means	10.84	11.09	11.49	11.16	A	6.39	3	2.13	3.41
					w	72.29	116	0.62	
Post Test Means	10.94	11.31	11.62	11.34	A	7.10	3	2.37	3.91
					w	70.13	116	0.60	
Adjusted Post Test Means	11.22	11.36	11.30	11.32	A	0.31	3	0.10	1.97
					w	6.13	115	0.53	

*Significant at 0.05 level of confidence

F.os (3,116) = 2.68

F.os (3,115) = 2.68

Table - 2 of analysis of co-variance on Hemoglobin content was found to be insignificant among the three experimental group of since the obtain F value 1.97 was lower than the F value required to be significant at 0.05 level. This statistical

findings clearly shows that the selected Nostril Dominance has no significant effect on Hemoglobin content.

Nostril dominance

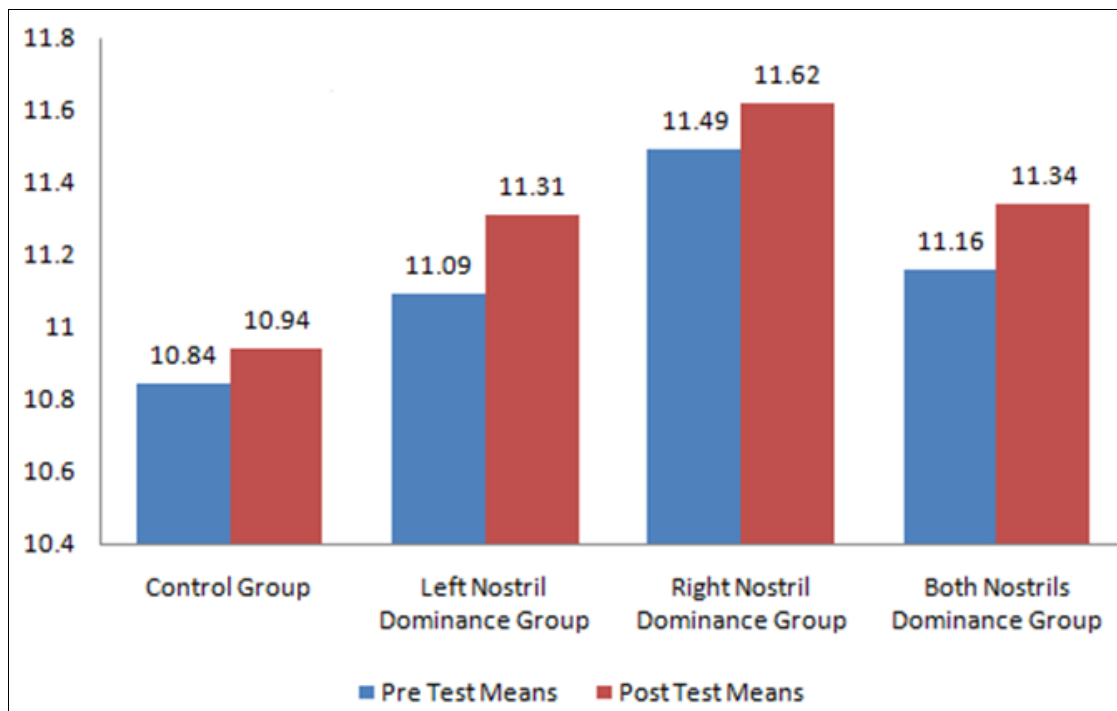


Fig 1: Comparison of the Means on Hemoglobin of the Control Group and Three Experimental Groups

Discussion of Findings

Nostril dominance breathing pattern is a natural phenomenon. The changes in dominance pattern during 24 hours a day is a result of hemispherical activity of central nervous system. And the various body parts involve throughout a day in various human activity which plays an important role in hemispherical activity that determines the pattern of Nostril dominance breathing.

The findings of the study shows that the three forms of nostril dominance (left nostril dominance group, right nostril dominance group and both nostril dominance group) breathing on yogic training has no significant improvement in the hemoglobin. The nostril dominance would yield more result if it is carried out for longer duration.

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