EFFECT OF YOGIC PRACTICES ON SELECTED CARDIO BREATHING CONSTRAINTS

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Abstract: *The purpose of this study was to find out the effect of nostril dominance yogic practices on selected cardio respiratory parameters. For this purpose 21 male M.Phil. Scholars, of the age group ranging between 21 to 28 yrs. were randomly selected as subjects from WC UNIVERSITY, Gwalior. Further they were divided into 3 group consisted of 7 subjects in left nostril dominance, right nostril dominance and both nostril dominance. The selected cardio respiratory parameters were peak flow meter, vital capacity, cardiovascular endurance, heart rate and respiratory rate. The training was conducted for a period of 3 weeks, 4 days a week excluding the time consumed for conducting pre test and post test. Nostril dominance training programme of three variations were developed after initial practice feasibility testing. For each experimental group (A, B & C) left nostril dominance, right nostril dominance and both nostril dominance, specific training programme were developed. Each programme contained at least 10 asanas with one relaxative asana, one pranayama and yoga danda practices. Analysis of covariance was used as statistical procedure to find out the mean difference among the group. The statistical results of the study revealed that there were increases in mean difference of all the selected variables among the groups but there was no statically significant difference among the three experimental groups.*

Keywords: - *Nostril Dominance, Cardio Respiratory, Heart Rate, Respiratory Rate*

Introduction

Yoga is a traditional method of meditation developed by the saints of ancient India. They practiced yoga as an effective method of controlling their mind and bodily activities. In modern times most of the people are attracted to yoga due to its healing power. People practicing yoga often say that they experience higher states of consciousness. (zyedkhan, 2010)

The goals of yoga are varied and range from improving health to achieving moksha. Within the Hindu monist schools of Advaita Vedanta, Shaivism and Jainism, the goal of yoga takes the form of moksha, which is liberation from all worldly suffering and the cycle of birth and death (samsara), at which point there is a realization of identity with the Supreme Brahman. In the Mahabharata, the goal of yoga is variously described as entering the world of Brahma, as Brahman, or as perceiving the Brahman or Ātman that pervades all things. For the bhakti schools of Vaishnavism, bhakti or service to Svayam Bhagavan itself may be the ultimate goal of the yoga process, where the goal is to enjoy an eternal relationship with Vishnu. (Wikipedia, 2012)

Medical science has recently discovered the nasal cycle, something that was known by the yogis thousands of years ago. Scientists have recently found that we don't breathe equally with both nostrils, that one nostril is much easier to breathe through than the other at any particular time and that this alternates about every three hours (Justin O'Brien, 2002).The yogis claim that the natural

period is every two hours, but we must remember these studies were done on people who do not have an optimum health level (Richard Rosen 2006).

Scientists also discovered that the nasal cycle corresponds with brain function. The electrical activity of the brain was found to be greater on the side opposite the less congested nostril. The right side of the brain controls creative activity, while the left side controls logical verbal activity. The research showed that when the left nostril was less obstructed, the right side of the brain was predominant. Test subjects were indeed found to do better on creative tests. Similarly when the right nostril was less obstructed the left side of the brain was predominant. Test subjects did better on verbal skills (Mukunda Stiles, 2008).

Medical science has not quite caught up with the ancient yogis yet. The yogis went one step further. They observed that a lot of disease was due to the nasal cycle being disturbed; that is, if a person breathed for too long through one nostril. To prevent and correct this condition, they developed the alternate nostril breathing technique. This clears any blockage to air flow in the nostrils and re-establishes the natural nasal cycle. For example, the yogis have known for a long time that prolonged breathing through the left nostril only (over a period of years) will produce asthma. They also know that this so-called incurable disease can be easily eliminated by teaching the patient to breathe through the right nostril until the asthma is cured, and then to prevent it recurring by doing the alternate nostril breathing technique. The yogis also believe that diabetes is caused to a large extent by breathing mainly through the right nostril. (Yoga Infocenter, 2012)

Methodology

For the purpose of this study 21 male M.Phil. Scholars, of the age group ranging between 21 to 28 yrs. were randomly selected as subjects from WC UNIVERSITY, Gwalior. Further they were divided into 3 group consisted of 7 subjects in left nostril dominance, right nostril dominance and both nostril dominance. The selected cardio respiratory parameters were peak flow meter, vital capacity, cardiovascular endurance, heart rate and respiratory rate. The training was conducted for a period of 3 weeks, 4 days a week excluding the time consumed for conducting pre test and post test. Nostril dominance training programme of three variations were developed after initial practice feasibility testing. For each experimental group (A, B & C) left nostril dominance, right nostril dominance and both nostril dominance, specific training programme were developed. Each programme contained at least 10 asanas with one relaxative asana, one pranayama and yoga danda practices. In addition to the three weeks training programme which was conducted, one extra week was devoted initially for orienting the subjects to each aspect of the training programme. Analysis of covariance was used as statistical procedure to find out the mean difference among the group.

Results

TABLE-1
ANALYSIS OF COVARIANCE OF THE MEAN OF THREE EXPERIMENTAL GROUPS ON PEAK FLOW METER

	Group						
	(A)	**(B)**	**(C)**	**Sum of Square**	**df**	**Mean Square**	**F-ratio**
Pre-test mean	520.00	521.00	519.00	16.6 14057.85	2 18	8.3 780.95	0.01
Post-test mean	526.43	528.57	529.29	30.95 12792.85	2 18	15.47 710.714	0.22
Adjusted post-test mean	526.65	527.45	530.19	48.07 236.23	2 17	24.03 13.89	1.73

Table-1 clearly signifies that the pre test mean of F- ratio for peak flow meter was 0.01 which is statistically insignificant. It was further observed that post test mean of F- ratio for peak flow meter was 0.22 which is not significant at (P<0.05). Adjusted post test mean of peak flow meter F-ration was 1.73 which is statistically insignificant at (2, 17) degree of freedom.

TABLE-2
ANALYSIS OF COVARIANCE OF THE MEAN OF THREE EXPERIMENTAL GROUPS ON VITAL CAPACITY

	Group						
	(A)	**(B)**	**(C)**	**Sum of Square**	**df**	**Mean Square**	**F-ratio**
Pre-test mean	2.36	2.34	1.93	0.83 5.54	2 18	0.41 0.30	1.34
Post-test mean	2.63	2.81	2.59	0.20 5.85	2 18	0.103 0.325	0.318
Adjusted post-test mean	2.53	2.72	2.78	0.22 3.22	2 17	0.115 0.190	0.605

Table-2 clearly signifies that the pre test mean of F- ratio for vital capacity was 1.34 which is statistically insignificant. It was further observed that post test mean of F- ratio for vital capacity was 0.318 which is not significant at (P<0.05). Adjusted post test mean of vital capacity F-ration was 0.605 which is statistically insignificant at (2, 17) degree of freedom.

TABLE-3
ANALYSIS OF COVARIANCE OF THE MEAN OF THREE EXPERIMENTAL GROUPS ON RESTING HEART RATE

	Group						
	(A)	**(B)**	**(C)**	**Sum of Square**	**df**	**Mean Square**	**F-ratio**
Pre-test mean	51.71	51.29	51.57	0.667 80.57	2 18	0.33 4.47	0.74
Post-test mean	50.71	51.14	50.14	1.524 79.14	2 18	0.76 4.39	0.173
Adjusted post-test mean	50.54	50.35	50.10	0.68 10.12	2 17	0.34 0.59	0.57

Table-3 clearly reveals that the pre test mean of F- ratio for resting heart rate was 0.74 which is statistically insignificant. It was further observed that post test mean of F- ratio for resting heart rate was 0.173 which is not significant at ($P<0.05$). Adjusted post test mean of resting heart rate F-ration was 0.57 which is statistically insignificant at (2, 17) degree of freedom.

TABLE-4
ANALYSIS OF COVARIANCE OF THE MEAN OF THREE EXPERIMENTAL GROUPS ON CARDIO-RESPIRATORY ENDURANCE

	Group						
	(A)	**(B)**	**(C)**	**Sum of Square**	**df**	**Mean Square**	**F-ratio**
Pre-test mean	43.62	42.67	42.99	3.32 199.9	2 18	1.66 11.10	0.15
Post-test mean	44.90	44.29	49.90	1.89 162.58	2 18	0.94 9.03	0.105
Adjusted post-test mean	44.45	44.63	44.99	1.08 15.91	2 17	0.54 0.93	0.57

Table-4 clearly shows that the pre test mean of F- ratio for cardio respiratory endurance was 0.15 which is statistically insignificant. It was further observed that post test mean of F- ratio for cardio respiratory endurance was 0.105 which is not significant at ($P<0.05$). Adjusted post test mean of cardio respiratory endurance F-ration was 0.57 which is statistically insignificant at (2, 17) degree of freedom

TABLE-5
ANALYSIS OF COVARIANCE OF THE MEAN OF THREE EXPERIMENTAL GROUPS ON RESPIRATORY RATE

	Group						
	(A)	**(B)**	**(C)**	**Sum of Square**	**df**	**Mean Square**	**F-ratio**
Pre-test mean	13.43	13.43	13.00	0.85 35.42	2 18	0.42 1.96	0.218
Post-test mean	12.86	12.57	12.29	1.14 16.0	2 18	0.57 0.88	0.64
Adjusted post-test mean	12.78	12.50	12.4	0.47 6.11	2 17	0.23 0.36	0.65

Table-5 clearly indicates that the pre test mean of F- ratio for respiratory rate was 0.218 which is statistically insignificant. It was further observed that post test mean of F- ratio for respiratory rate was 0.64 which is not significant at ($P<0.05$). Adjusted post test mean of respiratory rate F-ration was 0.65 which is statistically insignificant at (2, 17) degree of freedom

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 hemispheric activity of central nervous system and the various body part involve throughout a day in various human activities play an important role in hemispheric activity that determine the pattern of nostril dominance breathing.

Through this phenomenon is a categorically respiratory related, finding of this study has thrown light on areas and dimensions which earlier thought to be lesser relevance with nostril dominance or respiratory parameters. (Alan Searleman (2003)

The research scholar conceptualized this study with the purpose to find out which nostril dominance groups are more effective on selected cardio respiratory variables. The finding of the study shows that the three form of nostril dominance breathing on yogic training enhance the mean values of cardio respiratory variables like peak flow rate, vital capacity, cardio-respiratory endurance, heart rate and respiratory rate but there were no statistical significant was notice among the groups.

The studied conducted on nostril dominance showed significant improvements on selected variable after a sufficient duration of experiment time. To bring valuable change on cardio respiratory variable the training program must be consisted not more than three month.

The finding of the study showed the increase on cardio respiratory variables could be attributed to the fact that the experimental yogic programme was exclusive combination of yoga asanas, pranayamas and yoga danda that stimulates and induces specific pattern of nostril dominance breathing. (Ivanka Savi,. & Berglund Hans (2006)

The finding that Both Nostril Dominance effect most is likely to be the reason that in the case of Left Nostril Dominance and Right Nostril Dominance the air passage through nasal cavity through either right or left nostril by nasal mucus and nasal pharynx congestion. This happens due to

activation of opposite sensory nerves through selected yogic asanas. As a result the air passage through nasal flow is restricted one.

In comparison to this during Both Nostril Dominance exercise the nasal passage is completely widen off which helps in the air flow through nasal cavity. As a result every organ that is involved in the cardio-respiratory system is exercised to the maximum level. Obviously this might be the reason that the Both Nostril Dominance yogic training affected most. (Deka.M et al 2012).

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