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Effect of Anuloma-Viloma on some selected physiological variables of school going children

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Abstract

The purpose of the study was to determine the effect of Anuloma-Viloma on some selected physiological variables of school going children. 40 female students were randomly selected as subjects and further 20 students were randomly selected for experimental group and remaining 20 students were selected for control group. The age of the subjects ranged between 14 to 17 years. The experimental group was administrated Anuloma-Viloma and control group was given no training of an experimental period of six weeks. Pre-test data were collected from both the groups before giving six weeks of Anuloma-Viloma and also Post-test data were collected from both the groups at the end of six weeks of Anuloma-Viloma Practice. Descriptive statistics i. e. Mean, Standard Deviation and t-test were used as statistical technique for the present study. Result revealed that the six weeks of Anuloma-Viloma had significantly effects on physiological variables (vital capacity, breath holding rate and resting pulse rate) of school going children's of G. G. S. S School Prem Nagar, Delhi.

Keywords: Anuloma-Viloma, vital capacity, breath holding rate and resting pulse rate

Introduction

“Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture tomorrow.”

Swami Satyananda Saraswati

Yoga is the science of right living and, as such, is intended to be incorporated in daily life. It works on all aspects of the persons: the physical, vital, mental, emotional, psychic and spiritual.

The word yoga means ‘unity’ or ‘oneness’ and is derived from the Sanskrit word Yuj which means ‘to join’. This unity or joining is described in spiritual terms as the union of the individual consciousness with the universal consciousness. On a more practical level, yoga is a means of balancing and harmonizing the body, mind and emotions.

Yoga aims at bringing the different bodily functions into perfect coordination so that they work for the good of the whole body. The Occidental teaching show that the physical health depends very materially upon correct breathing. The Original teachers not only admit that their Occidental brothers are right, but say that in addition to physical benefit derived from correct habits of breathing, man’s mental power, happiness, self-control, clear-sightedness, morals, and even his spiritual growth may be increased by an understanding of the ‘Science of Breath’.

Methodology

Forty female participants, with ages ranging from 14 to 17 years students of G. G. S. S. School Prem Nagar, Delhi were randomly selected as subjects. The subjects were divided into two groups, 20 students were randomly selected for experimental group and remaining 20 students were selected for control group. The experimental group was allotted Anuloma-Viloma and control group was given no training of an experimental period of six weeks.

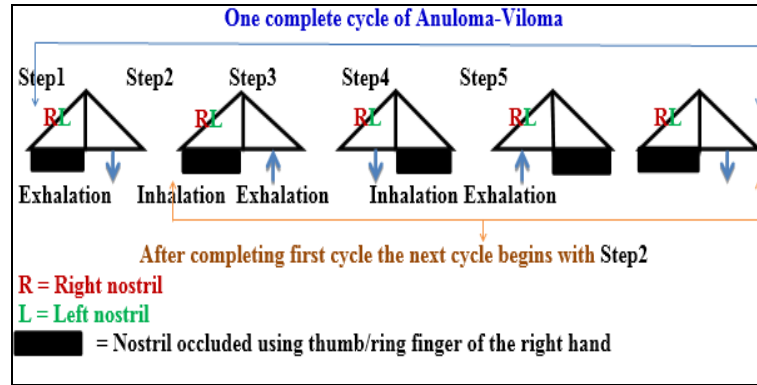
Training schedule was applied for six weeks, five days a week and daily 25 minutes. During the training of Anuloma-Viloma the subjects were asked to sit on the mat in sukhasana (cross-legged) with their head, spine straight, eyes closed and left hand in jnana mudra and asked them to exhale through the left nostril with the right nostril occluded with right hand thumb; then take a long and deep breathe through left nostril.

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After inhalation, release breathes through the right nostril with the left nostril occluded; then inhales through the right nostril and exhaling through the left nostril. This is one

complete cycle. This process was repeated again and again for first two weeks. After two weeks subjects were asked to hold breathe after each inhalation for next four weeks.



Procedure of the Methodology

The data was analysed by employing Independent Sample ‘t’ Test and Paired Sample ‘t’ Test. The calculations were performed using the SPSS 16.0 software and the findings pertaining to Independent Sample ‘t’ Test and Paired Sample ‘t’ Test between experimental and control group among the selected the female students studying in G. G. S. S School

Prem Nagar, Delhi.

Data was collected two times, one before training and one after training programme of both groups. For this purpose a Performa was developed and applied in the following manner.

Result

Table 1: Descriptive Statistics of Vital Capacity for Experimental and Control Group on Post-Test

Variable	Group	N	Mean	Standard Deviation	Standard Error Mean
Vital Capacity	Experimental	20	1.59	228.208	51.028
	Control	20	1.34	250.052	55.913

Table-1 depicts the descriptive statistics value of the variable Vital Capacity for both experimental and control group on post test data, which shows that the mean and standard

deviation values of experimental and control group, found to be 1.59, ± 228.208 and 1.34, ± 250.052 respectively.

Table 2: Independent Samples t-Test of the variable Vital Capacity

Variable	Group	t	df	Sig. (2-tailed)
Vital Capacity	Experimental and Control Group on Post Test Data	.000	38	1.000

Table-2 depicts the values for independent sample t-test for the variable Vital Capacity, which shows that there was significant difference between experimental and control group

on post test data. As the value found to be .000 against the tabulated value of 1.648, which is insignificant at 0.05 level.

Table 3: Descriptive Statistics of Resting Pulse Rate for Experimental and Control Group on Post-Test

Variable	Group	N	Mean	Standard Deviation	Standard Error Mean
Resting Pulse Rate	Experimental	20	73.550	6.954	1.555
	Control	20	86.250	6.812	1.523

Table-3 depicts the descriptive statistics of the variable Resting Pulse Rate for both experimental and control group on post test data, which shows that the mean and standard

deviation values of experimental and control group, found to be 73.550, ± 6.954 and 86.250, ± 6.812 respectively.

Table 4: Independent Sample ‘t’-Test of the variable Resting Pulse Rate for Experimental and Control Group on Post-Test

Variable	Group	t	df	Sig. (2-tailed)
Resting Pulse Rate	Experimental and Control Group on Post Test Data	14.293	38	.000

Table-4 depicts the values for independent sample ‘t’ test for the variable Resting Pulse Rate which shows that there was significant difference between experimental and control group

on post-test data. At the value found to be 14.293 against the tabulated value of 1.684, which is significant at 0.05level.

Table 5: Descriptive Statistics of Breathe Holding Rate for Experimental and Control Group on Post-Test

Variable	Group	N	Mean	Standard Deviation	Standard Error Mean
Breath Holding Rate	Experimental	20	52.35	10.829	2.354
	Control	20	38.65	8.418	1.882

Table-5 depicts the descriptive statics of the variable Breathe Holding Rate for both experimental and control group on post test data, which shows that the mean and standard deviation

values of experimental and control group, found to be 52.35, ± 10.829 and 38.85, ± 8.418 respectively.

Table 6: Independent Sample 't'-Test of the variable Breathe Holding Rate

Variable	Group	t	df	Sig. (2-tailed)
Breathe Holding Rate	Experimental and Control Group on Post Test Data	4.545	38	.000

Table-6 depicts the values for independent sample 't' test for the variable Heart Rate, which shows that there was significant difference between experimental and control group

on post-test data. As the value found to be 4.545 against the tabulated value of 1.684, which is significant at 0.05level.

Table 7: Paired Sample 't'-Test of Vital Capacity

Variable	Group	t	df	Sig. (2-tailed)
Vital Capacity	Pre-control Post-control	0.667	19	.134

Table-7 depicts the paired sample 't' test for the variable Vital Capacity, which shows that there is a significant difference between pre-experimental and post-experimental group for

vital capacity as the value found to be 0.667 against the tabulated value of 1.729, which is significant at 0.05level.

Table 8: Descriptive Statistics of the variable Resting Pulse Rate

Variable	Group	Mean	N	Standard Deviation	Standard Error Mean
Resting Pulse Rate	Pre-control	43.70	20	10.959	1.555
	Post-control	52.35	20	10.529	2.450

Table-8 depicts the descriptive statistic of the variable Resting Pulse Rate for both pre-control and post-control group which shows the mean and standard deviation of pre-control and

post-control where found to be 43.70, ± 10.959 and 52.35, ± 10.529 respectively.

Table 9: Paired Sample 't' of the variable Resting Pulse Rate

Variable	Group	N	df	Sig. (2-tailed)
Resting Pulse Rate	Pre-experimental and Post-experimental Group	-8.404	19	.000

Table-9 depicts the paired sample 't' test of the variable Resting Pulse Rate, which shows that there is a significant difference between pre-experimental and post-experimental

group for resting pulse rate as the value found to be -8.404 against the tabulated value of 1.729 which is significant at 0.05 level.

Table 10: Descriptive Statistics of the variable Breathing Holding Rate for both Pre-control and Post-control Group

Variable	Group	Mean	N	Standard Deviation	Standard Error Mean
Breath Holding Rate	Pre-control	38.70	20	7.540	1.686
	Post-control	38.65	20	8.418	1.882

Table-10 depicts the descriptive statistics of the variable Breath Holding Rate for both pre-control and post-control group which show the mean and standard deviation of pre-

control and post-control test data were found to be 38.70, ± 7.540 and 38.65, ± 8.418 respectively.

Table 11: Paired Sample 't' test of the variable Breathe Holding Rate

Variable	Group	t	df	Sig. (2-tailed)
Breathe Holding Rate	Pre-experimental and Post-experimental Group	7.474	19	.000

Table-11 depicts the paired sample 't' test of the variable Breathe Holding Rate, which shows that there is a significant difference between pre-experimental and post-experimental group for breathe holding rate as the value found to be 7.474 against the tabulated value of 1.729 which is insignificant.

Discussion

The result helps to interpret that the Anulom-Vilom training intervention helped to train the respiratory muscles and might have improved the functional ability of inter-costal muscles. Thus, in turn it helped to improve breathing rate and pulse rate of experimental group of students. Thus, Anulom-

Vilomhas significant effects of improving breathe holding rate and resting pulse rate.

The result helps to interpret that although the Anulom-Vilom practice could train the respiratory muscles, they might have opened micro circulation in cardiac muscles and, therefore resting pulse rate, breathe holding rate and vital capacity of the selected experimental group of female students studying in G. G. S. S School Prem Nagar might have improved. Thus, Anulom-Vilomhas significant effects in improving resting pulse rate, breathe holding rate, vital capacity of selected experimental group.

Although breathing is an autonomic activity controlled by

autonomic nervous system (ANS) and no voluntarily control over one's respiratory system is possible, however Pranayama can do this deliberately.

Overall result helps to interpret that the training of Anulom-Vilom improves breathe holding rate, resting pulse rate and vital capacity of the experimental group female students of G. S. S School Prem Nagar, Delhi.

Conclusions

Improvement in Vital Capacity, Resting Pulse Rate and Breathe Holding Rate has been achieved among the students due to the continuous practice of Anuloma-Viloma. Students can increase their performance efficiency by adding pranayama as an important aspect of their daily routine life.

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