

Effect Of Ujjayi And Bhastrika Pranayama On Selected Physiological Variables Of Physically Challenged Students

Dr. Mahesh Sawata Khetmalis

Assistant Professor, Department of Physical Education Visva-Bharati, Santiniketan. West Bengal, India.

Abstract

The attitude of the modern society towards the handicapped population has changed and they are receiving fair treatment to some extent in educational, vocational and social sectors. Sixty students of Amar Jyoti School Gwalior and Roshini Rehabilitation centre were selected as the subjects for the study. The age ranged between 15-20 years. The students were randomly assigned as experimental and controlled group; each group consisted of 30 students. The following variables were selected for the study-Respiratory variables; 1. Vital capacity, 2. Breath holding time. Physiological variables; 1. Resting pulse rate, 2. Blood pressure. The Criterion measures employed; 1) Vital capacity was measured in liters with the help of dry Spiro meter, 2) Breath holding capacity was measured with the help of stop watch and was recorded in seconds, 3) Resting pulse rate was measured in numbers for one minute, 4) Blood pressure was measured with the help of sphygmomanometer and it was recorded in mm/hg. The study was conducted for a period of 6 weeks. The data for respiratory variables were collected two times, once prior to the start of the training program and after the training program. The students went through a program me of bhastrika pranayama and ujjayi prayanama five days a week. To find out the effect of 6 weeks pranayama training program me on selected physiological variables independent t-test was carried out for the two groups and the level of significance was set at 0.05 . The study reveals that Vital capacity and positive breath holding time had significant results after 6 weeks training program of ujjayi and bhastrika pranayama.

KEYWORDS: Ujjayi, Bhastrika, Pranayama, Vital Capacity.

Introduction

In the olden days up to the time of second world war most of the people and children who were physically disabled spent their lives at home or in hospitals, their status was that they were considered as incapable members of the society. In the past, handicapped person had been considered as social deviants. If we go through history we find that in the Spartan civilization, handicapped children did not have any right to lead their life. A new born baby was left on Mount Taygetus for a week and the village elders went to inspect him, if he showed any signs of weakness he was rolled down the mountain and left to die or else he was brought home and given a very disciplined life. But the attitude of the modern society towards the handicapped population has changed and they are receiving fair treatment to some extent in educational, vocational and social sectors. The handicapped individuals have been identified as mentally retarded, emotionally disturbed, hearing impaired,

visually impaired, orthopedically impaired, learning disabled, multi impaired or health impaired. Actually the need of disabled in a democratic society is not different from those of normal children, such a child wants acceptance for recognition from his fellow students in the school. He wants the security that grows out of acceptance in the process of growing up and living with the social groups. In yoga there are no specific asanas or kriyas or pranayama for curing specific diseases which often creates a problem in as much as people, both scientists and laymen are concerned. Some researchers believe that the entire science of yoga produced the desired results and not any single practice, the yoga hygiene and its preventive methodology transform the physical, mental, moral, intellectual, emotional and spiritual life of man. When one looks at the tradition of yoga one finds that concept of pranayama has much greater width and its techniques includes vast array of very suitable elements apart from the simple manipulation of breathing activity. The pranayama is an art and has techniques to make the respiratory organs to move and expend intentionally, rhythmically and intensively. It consists of long sustained subtle flow of inhalation exhalation and retention of breath.

METHODOLOGY

Sixty students of Amar Jyoti School Gwalior and Roshini Rehabilitation centre were selected as the subjects for the study. The age ranged between 15-20 years. The students were randomly assigned as experimental and controlled group; each group consisted of 30 students.

The following variables were selected for the study-

Respiratory variables:

- 1) Vital capacity
- 2) Breath holding time

Physiological variables

- 1) Resting pulse rate
- 2) Blood pressure.

Criterion measures

- 1) Vital capacity was measured in liters with the help of dry Spiro meter.
- 2) Breath holding capacity was measured with the help of stop watch and was recorded in seconds.
- 3) Resting pulse rate was measured in numbers for one minute
- 4) Blood pressure was measured with the help of sphygmomanometer and it was recorded in mm/hg

The study was conducted for a period of 6 weeks. The data (vital capacity, breath holding time, resting pulse rate and blood pressure) for respiratory variables were collected two times, once prior to the start of the

training program and after the training program. The students went through a program me of bhastrika pranayama and ujjayi prayanama five days a week.

In order to find out the effect of 6 weeks pranayama training program me on selected physiological variables independent t-test was carried out for the two groups and the level of significance was set at 0.05 .

FINDINGS

In order to determine the significant differences between experimental group and control group, after administering the training treatment, and its effect on physiological variables, the pre and post test scores were collected and analyzed by using t ratio. The results of the study are presented in tabular form for each variable separately.

Table -1

SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST MEANS OF CONTROL AND EXPERIMENTAL GROUP IN VITAL CAPACITY

No of subjects	Group	Means		DM	T ratio	Tab Value
		Pre	Post			
30	Control	1.56	1.59	0.03	1.08	1.699
30	Experimental	1.156	1.423	0.267	4.24*	1.699

*significant difference at 0.5 level of significance $t_{.05}(29)=1.699$

Table-1 reveals that there was significant difference in the pre-means and post means of vital capacity of physically challenged students after the completion of 6 weeks of Ujjayi and Bhastrika Pranayama training program as the t-ratio (4.24) was greater than the tabulated “t” value(1.699) at 0.05 level of significance. It was also evident from the same table there was no significant difference in the initial and final means of vital capacity of vital capacity of the subjects of the control group as the obtained “t” value (1.08) was less than the tabulated value(1.699) at 0.05 level of significance

Table-2

SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST TEST MEANS OF CONTROL AND EXPERIMENTAL GROUP IN DIASTOLIC BLOOD PRESSURE

No of subjects	Group	Means		DM	T ratio	Tab Value
		Pre	Post			
30	Control	93.56	93.3	0.26	0.93	1.699
30	Experimental	93.13	92.7	0.43	1.32	1.699

*significant difference at 0.5 level of significance $t_{.05}(29) =1.699$

Table-2 reveals that there was significant difference in the pre-means and post means of diastolic blood

pressure of physically challenged students after the completion of 6 weeks of Ujjayi and Bhastrika Pranayama training program as the t ratio (1.32) was less than the tabulated “t” value(1.699) at 0.05 level of significance.

It was also evident from the same table there was no significant difference in the initial and final means of diastolic blood pressure of the subjects of the control group as the obtained “t” value (0.93) was less than the tabulated value(1.699) at 0.05 level of significance. The present study revealed that calculated value “t” was less than tabulated ‘t’, hence the study was not significant.

Table-3

SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST TEST MEANS OF CONTROL AND EXPERIMENTAL GROUP IN POSITIVE BREATH HOLDING TIME

No of subjects	Group	Means		DM	T ratio	Tab Value
		Pre	Post			
30	Control	23.70	23.74	0.04	0.678	1.699
30	Experimental	19.953	23.822	3.869	6.9*	1.699

*significant difference at 0.5 level of significance t.05 (29) = 1.699

Table 3 reveals that there was significant difference in the pre-means and post means of positive breath holding time of physically challenged students after the completion of 6 weeks of Ujjayi and Bhastrika Pranayama training program as the t ratio (6.9) was greater than the tabulated “t” value(1.699) at 0.05 level of significance.

It was also evident from the same table there was no significant difference in the initial and final means of positive breath holding time of the subjects of the control group as the obtained “t” value (0.687) was less than the tabulated value(1.699) at 0.05 level of significance.

Table- 4

SIGNIFICANCE OF DIFFERENCE BETWEEN PRE-TEST AND POST TEST MEANS OF CONTROL AND EXPERIMENTAL GROUP IN POSITIVE BREATH HOLDING TIME

No of subjects	Group	Means		DM	T ratio	Tab Value
		Pre	Post			
30	Control	72.8	72.5	0.3	0.12	1.699
30	Experimental	75.36	75.33	0.03	0.19	1.699

*significant difference at 0.5 level of significance t.05(29)=1.699

Table 4 reveals that there was no significant difference in the pre-means and post means of resting pulse rate of physically challenged students after the completion of 6 weeks of Ujjayi and Bhastrika Pranayama training program as the t-ratio (0.19) was greater than the tabulated “t” value(1.699) at 0.05 level of

significance.

It was also evident from the same table there was no significant difference in the initial and final means of resting pulse rate of the subjects of the control group as the obtained "t" value (0.12) was less than the tabulated value(1.699) at 0.05 level of significance. The calculated 't' value was- 0.19 and the tabulated 't' was 1.699 so the difference is 1.509.

It was observed from the findings that 6 weeks of Ujjayi and Bhastrika Pranayama training were effective on vital capacity (4.24) and positive breath holding (6.9) for the experimental group. The analysis of data revealed that there was no significant difference between pre and post means of diastolic blood pressure(1.32) and resting pulse rate(0.19)

Discussion of hypothesis

In the beginning it was hypothesized that there will be significant difference among the mean value of four different physiological variables of physically challenged students. Therefore, hypothesis is accepted in the case of vital capacity and positive breath holding time and rejected in the case of resting pulse rate and diastolic blood pressure.

Conclusions

The present study reveals that Vital capacity and positive breath holding time had significant results after 6 weeks training program of ujjayi and bhastrika pranayama. The resting pulse rate and diastolic blood pressure did not give any significant results of training program of selected Ujjayi and Bhastrika pranayam.

References:

- Brahamachari D. (1970) Yoga Vidnyan, New Delhi: Asia Publishing House.
- Bucher, Charles, A. (1983) Foundation Of Physical Education and Sports, St Louis: The C V Mosby Co.
- Day, Harvey. (1986) Practical Yoga for the Businessman, London, Pesham Books.
- Dorling, Kindersley. (1986) Yoga-Mind And Body, USA: D.K. Publishing Book.
- Iyengar, BKS, (1968) Light On Yoga, Australia: George Allen and Union Australia Private Limited.
- Marwaha, B.S, (1965) Health and Efficiency through Yoga, New Delhi: Army Education Stores.