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Effect of breath holding capacity on 3000 meters running performance of school going girls

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Abstract

The purpose of the study was to find out the effect of positive breath holding capacity on 3000 meters running performance of school going girls. The study was conducted on thirty female students in the age group between 16 to 17 years from Kautala R.K.Ashram High School, South 24 Parganas, West Bengal. Exercise programme of positive breath holding was assigned to the students. Positive breath holding practiced kumbhaka i.e. holding breath after deep, slow and full inspiration. The treatment was given six day in a week and the total duration was 3 months. The mean difference between the pre and post treatment performance was obtained by 't' ratio. The result indicates that practice of pranayama with positive breath holding increases aerobic capacity.

Keywords: Positive breath holding, kumbhak, pranayama, aerobic capacity

Introduction

The Yoga Education has recently emerged along with sport science as an important means in performance enhancement. The fourth stage of Maharshi patanjali's Astanga yoga is pranayama. Pranayama means the control of the vital force (Prana) by concentration and regulated breathing. Just as the mechanism for gas exchange are modified through exercise and training, blood flow and gas transport mechanisms are likewise affected. Training improves pulmonary function, as evidenced by the fact that athletes have greater resting and exercising lungs volume. Pranayamic breathing influences blood circulation and heart's function. This brings a noticeable relaxation, tranquility, balance and sense of well-being to mind. In the opinion of the investigator there might have close relation between breath holding and aerobic performance. The present study has designed to find out the effect of positive breath holding on 3000 meter running.

Methodology: The data were collected from 30 female students of kautala Ramkrishna ashram High School (Kautala, South 24 paraganas) age group between 16-17years. Initially data were collected from subjects performing 3000 meter running. Then after 3 months treatment of positive breath holding (Antakumbhak) final data were collected in same way.

Statistical Procedure: The mean difference between the pre and post treatment performance were obtained by employing the statistics of 't' ratio.

Result and Discussion

Table 1: Mean and standard division of initial and final scores of 3000mts run.

Variable	Mean	S.D.
Initial test	19.197 sec.	1.067 sec.
Final test	17.380 sec.	0.628 sec.

From the above table-1 it was evident that after 3 months treatment of positive breath holding

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the performance breath holding the performance of the subjects improved. The time to cover the distance of 3000mts decreased.

Table 2: Mean difference of the initial and final scores on 3000mts run

Variable	Mean	S.E	't' Ratio
Initial Test	19.197 sec.	0.226	8.040
Final Test	17.380 sec.		

$t'(0.05)^{58}=1.672$

From table -2 it was observed that there was significant difference in performance in 3000 mts run after 3 months treatment of positive breath holding on subjects.

The test result revealed that there was a significant difference in 3000mts run of subjects before and after the treatment of breath holding. It shows that positive breath holding has a positive effect on endurance events especially in 3000 mts running and aerobic activities.

Conclusion

1. Statistical analysis of data shows that the performance of 3000 mts. Run has improved than what was recorded before treatment.
2. There is strong significant difference present between initial and final performances.

Recommendation

1. Similar studies might be conducted on other long distance track events.
2. Study might be conducted on long distance swimming events on school going boys.

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