IJFEAT
INTERNATIONAL JOURNAL FOR ENGINEERING APPLICATIONS AND TECHNOLOGY

Effect of Sudarshan Kriya on Pulmonary Function and Performance of Rowers

Amruta Subhash Parashar[1], Dr. Mrs. Asha Vijaykumar Bengle[2]

[1]*Assistant Director ,Physical Education in College of Engineering Pune (COEP),India*

[2]*Director of Physical Education and Sports in MES Abasaheb Garware College, Pune.*

Abstract

A research was undertaken with a view to examine effect of Sudarshan Kriya on Pulmonary function and performance of rowers. Pulmonary function means lungs function in human body. The primary goal of the PFT is how well person's lungs are working. Performance of the sportsperson significantly depends upon lungs function capacity. The criterion for functioning includes how much air lungs can hold, how fast air can be moved in and out of lungs, how well lungs put oxygen into and remove carbon dioxide. Sports events like 2000 metres rowing, 10KM marathon requires a good stamina and endurance as they have greater duration. Hence pulmonary function or lung capacity function is vital element for the performance of 2000 meters rowers. Experimental approach was adopted. Two groups of 33 rowers each – controlled group and experimental group were formed. A six month program of Sudarshan Kriya was administered to the experimental group. Pre-test and post-test measurements were taken for both the controlled group and experimental group. Analysis was done using Mann-Whitney test. Going by the combined results of the controlled and experimental group, the overall null hypothesis that there is no effect of Sudarshan Kriya on pulmonary functioning could not be rejected. However if we consider only the results of experimental group, one may reject the null. Based on either a comparative assessment or a stand-alone assessment, the overall null hypothesis that there is no effect of Sudarshan Kriya on performance was rejected in favor of the alternate that Sudarshan Kriya has a significant effect on performance. None of the three variables, namely, height, weight or age showed any significant association with the post-test timing of the 2000-m rowing race in case of combined group, controlled group and experimental

group. There is a definite and positive effect of of Sudarshan Kriya on performance of the rowers for 2000-m race. Some practical suggestions were offered.

Keywords: Sudarshan Kriya, Rowing, Data analysis

Introduction

A research was undertaken with a view to examine effect of Sudarshan Kriya on Pulmonary function and performance of rowers. Pulmonary function means lungs function in human body. The primary goal of the PFT is how well person's lungs are working. Performance of the sportsperson significantly depends upon lungs function capacity. The criterion for functioning includes how much air lungs can hold, how fast air can be moved in and out of lungs, how well lungs put oxygen into and remove carbon dioxide. Sports events like 2000 metres rowing, 10KM marathon requires a good stamina and endurance as they have greater duration. Hence pulmonary function or lung capacity function is vital element for the performance of 2000 meters rowers. Experimental approach was adopted. Two groups of 33 rowers each – controlled group and experimental group were formed. A six month program of Sudarshan Kriya was administered to the experimental group. Pre-test and post-test measurements were taken for both the controlled group and experimental group. Analysis was done using Mann-Whitney test. This article presents the gist of findings, conclusions and suggestions.

Research Findings

a. Descriptive data analysis

i) The mean age of the total sample of 66 subjects was 22.86 years, height 184.23 cm and weight 76 kgs. The mean age of the controlled group of 33 subjects was 22.85 years, height 184.61 cm and weight 76.76 kgs. The mean age of the experimental group of 33 subjects was 22.88 years, height 183.85 cm and weight 75.24 kgs.

ii) The standard deviation for age of the total sample of 66 subjects was 2.46 years, height 3.52 cm and weight 6.36 kgs. The standard deviation for age of the controlled group of 33 subjects was 2.03 years, height 2.87 cm and weight 5.31kgs. The standard deviation

for age of the experimental group of 33 subjects was 2.82 years, height 4.02 cm and weight 7.18 kgs.

iii) The variance for age of the total sample of 66 subjects was 6.03 years, height 12.36 cm and weight 40.45 kgs. The variance for age of the controlled group of 33 subjects was 4.13 years, height 8.24 cm and weight 28.24kgs. The variance for age of the experimental group of 33 subjects was 7.92 years, height 16.19 cm and weight 51.52 kgs.

iv) The skewness for age of the total sample of 66 subjects was 1.28 years, height 0.02cm and weight 0.64 kgs. The skewness for age of the controlled group of 33 subjects was 1.03 years, height 0.55 cm and weight 0.37kgs. The skewness for age of the experimental group of 33 subjects was 1.31 years, height -0.03 cm and weight 0.89 kgs.

v) The kurtosis for age of the total sample of 66 subjects was 2.09 years, height -0.29 cm and weight 0.79 kgs. The kurtosis for age of the controlled group of 33 subjects was 0.89 years, height 0.18 cm and weight 0.25 kgs. The kurtosis for age of the experimental group of 33 subjects was 1.82 years, height -0.85 cm and weight 0.91 kgs.

None of the values indicated any abnormal characteristic with the sample.

b. Inferential analysis

i) Going by the combined results of the controlled and experimental group, the overall null hypothesis that there is no effect of Sudarshan Kriya on pulmonary functioning cannot be rejected. However if we consider only the results of experimental group, one may reject the null.

ii) Based on either a comparative assessment or a stand-alone assessment, the overall null hypothesis that there is no effect of Sudarshan Kriya on performance was rejected in favor of the alternate that Sudarshan Kriya has a significant effect on performance.

c. Finer data analysis

None of the three variables, namely, height, weight or age showed any significant association with the post-test timing of the 2000-m rowing race in case of combined group, controlled group and experimental group.

Conclusions –

i) Taking into account the combined results of the controlled and experimental group, it cannot be concluded that there is a significant effect of Sudarshan Kriya on pulmonary functioning. However if we consider only the results of experimental group, one can conclude that there is a significant effect of Sudarshan Kriya on pulmonary functioning of the rowers. Parameters like FVC L, FEV1 L, FEV1/FVC% %, FEF25-75% L/s, MEF25% L/s, MEF50% L/s and FEV1/VCmax% showed significant difference in the pre and post-test of even the controlled group. At the same time as far as the experimental group was concerned parameters like FVC L, FEV1/FVC% %, FEF25-75% L/s, MEF25% L/s, FEV6 L, FEV1/FEV6% %, MIF/MEF50% and FEV1/VCmax% showed significant in pre and post-test measurements related to pulmonary functioning of the rowers. This leads us to conclude that there is a significant effect of of Sudarshan Kriya on pulmonary functioning of the rowers.

ii) There is a definite and positive effect of of Sudarshan Kriya on performance of the rowers for 2000-m race. While all the five-parameters pertaining to performance didn't show any significant variation for the controlled group with the pre and post-test, they all showed a significant variation for the experimental group with the pre and post-test. This leads us to strongly conclude that there is a positive effect of of Sudarshan Kriya on performance of the rowers for 2000-m race.

iii) None of the three variables, namely, height, weight or age has any significant association with the post-test timing of the 2000-m rowing race in case of combined group, controlled group and experimental group.

Suggestions –

i) Yoga is a state which is defined as a high level of consciousness achieved through a fully rested relaxed body and a fully awake and relaxed mind. SKY is a unique breathing process not practiced as a single technique but is integrated with asanas, pranayama, meditation and attitude training. This type of yoga is said to heal and purify within, is a natural and non-invasive stress relieving technique. Thus both Yoga and SKY are strongly recommended for the rowers.

ii) These should be actually made a compulsory part of the curriculum in view of their benefits.

iii) Other sports should also identify special asanas that enhance the performance of the sportsmen in the respective sports and such asanas should be regularly practiced.

None other than the PM, Narendra Modi, is a great patron of Yoga. Government and other institutions should take an inspiration from the leader and adopt yoga as way of life.

Brief About Author:

Amruta Subhash Parashar (Mrs Amruta Nikhil Deshpande) works as Assistant Director – Physical Education in College of Engineering Pune (COEP) since June 2012. She was professional sportsperson and specialized in Gymnastics, Swimming and Rowing.

She has done M Ed in Physical Education from Savitribai Phule Pune University in June 2010, she stood first in the university in the final exam. She has also cleared SET Examination from Savitribai Phule Pune Univerisity in November 2011. She is now pursuing her Ph. D. from Savitribai Phule Pune University and her subject is "**Effect of Sudarshan Kriya on Pulmonary function and performance of rowers"**.

She has represented Maharashtra State in various national tournaments in Rowing & Gymnastics and won various medals. In 2007 she was **awarded Shri Shiva Chhatrapati Award** (Highest Award for the Sport from the State) for **Rowing** from the Maharashtra Government. She has been awarded District sports award in 2006.

She was associated with Art of Living organization since last 15 years as her father is full time teacher in Art of Living, she has completed the Basic Course (Happiness Program) of Art of Living. She has deep faith in Hon. Guruji Shri Shri Ravi Shankarji and follows Sudarshan Kriya on regular basis. While her professional carrier in rowing, she was practicing Sudarshan Kriya and found remarkable increase in her breathing stamina and pulmonary function.

She has keen interest in pranayama techniques, meditations and finding its impact of performances of sports persons. She has won Gold Medal in the Nationals for Rowing in 2002, Silver Medal in 2001 and Bronze Medals in 2003, 2004, 2005 & 2006.She has won Bronze medal in Rowing in National Games held at Guwahati in 2007. She has won medals continuous three years in AIU (All India University) for Rowing. She was state champion for continuous eight years for rowing.

Brief About Co Author:

Dr. Mrs. Asha Vijaykumar Bengle. She works as Director of Physical Education and Sports in MES Abasaheb Garware College, Karve Road, Pune.

Mrs. Asha is having more than 22 years of experience in teaching. She has completed her Ph. D. from Shivaji University – Kolhapur on the subject of Yoga for Children. She has done M Ed in Physical Education & M A in Politics from Pune University. She has also done LLB from SNDT Mumbai University and MBA in Sports Management from Chennai. She has cleared SET Exam of Pune University (now Savitribai Phule Pune University). She has also done Yoga training Course from Kaivalyadham – Lovavala. She has published valuable articles in various publications and participated in various national and international tournaments as official.