ABSTRACT

AIMS AND OBJECTIVES:

The objectives of the study were To compare the effect of different ratios of Puraka, Kumbhaka and Rechaka in Suryabhedana Pranayama on selected circulatory and respiratory function, To compare the effect of different time durations of Suryabhedana Pranayama with different ratios of Puraka, Kumbhaka and Rechaka on selected circulatory and respiratory function and To identify and compare the pattern of improvement in different ratios of Puraka, Kumbhaka and Rechaka in Suryabhedana Pranayama in different time durations on selected circulatory and respiratory function.

METHODS:

80 male school students from Jawahar Navodaya Vidyalaya Bohani, Narsinghpur, M.P. were selected randomly as the subjects for the study. The age of subjects was 11 to 15 years. The students were randomly assigned into four groups, each consisted of 20 students. The three experimental groups Ratio 1, Ratio 2 and Ratio 3 were administered three different ratios of Puraka, Kumbhaka and Rechaka in Suryabhedana Pranayama i.e. 1:1:1, 1:2:2 and 1:4:2 respectively. Control group did not participate in any kind of practice. The components of Circulatory and Respiratory Function selected for the study were Positive Breath Holding Time (PBHT), Respiratory Rate (RR), Peak Expiratory Flow Rate (PEFR), Vital Capacity (VC), Forced Vital Capacity (FVC), Maximum Voluntary Ventilation (MVV), Forced Expiratory Volume in first second (FEV1), Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP) and Resting Heart Rate (RHR). The data was collected three times at different time duration from all the four groups i.e. before the training, after four weeks and finally after the eight weeks' training of Suryabhedana Pranayama.

Mixed-Model design (between-within) were used for the study. The training was conducted for a period of eight weeks, five days a week. To attain the objectives, descriptive statistics were used to describe the nature and characteristics of the data. To see the interaction effect between time duration and different ratios of Puraka, Kumbhaka and Rechaka in Suryabhedana Pranayama, 4 × 3 Mixed Analysis of Variance (Between-Within) test was applied. Post Hoc test was used to compare the
group means by using the Bonferroni correction. Eta Square was also calculated to see the effect size of significance. Level of significance (Alpha \(\alpha = 0.05\)) was set at 0.05.

RESULTS AND CONCLUSION:

Findings of the study showed no significant improvement and no interaction effect in all the selected circulatory function. On the other hand, a significant improvement and interaction effect was found in all the selected respiratory function. Findings also showed a significant difference in effect of all the three selected ratio of Puraka, Kumbhaka and Rechaka in Suryabhedana Pranayama in respiratory function. Out of the three ratios, 1:4:2 were found better than the other two for each variables of respiratory function, followed by 1:2:2 and then 1:1:1.

Keywords: Suryabhedana Pranayama, Puraka, Kumbhaka, Rechaka, Respiratory function, Circulatory function