Effort specificity and functional possibilities of women gymnasts participating in rhythmic gymnastics contests

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Abstract

Background. The energetic consumption of energy for a rhythmic gymnastics exercise, composed according to the requirements of the new Code of Points, differs depending on the corporal group typical to each hand-apparatus and on the number of difficulty technical elements.

Aims. Making a comparison between the specific effort in the rhythmic gymnastics activity and the individual functional possibilities of the tested gymnasts, and the elaboration of a methodologically significant profile.

Methods. The tested subjects were 12 gymnasts of the group and individual national team, aged from 15 to 17. The experimental plan was oriented around three axis: determining the physiological indices under lab conditions; evaluating the energetic consumption, starting from the biological indices recorded in the training sessions; analyzing the technical content performed during the training and under competition conditions.

Results. The average lactate and its peak, recorded 1 minute after the interruption of the exercise, confirms our expectations according to which, during the contests, the gymnasts work under conditions close to their maximum aerobic power (MAP); the training intensity is insufficient for the MAP maintaining, in this competition period a great percent of the heart frequency (HF) being below the aerobic threshold (< 95%). In training, the HF maximum values recorded during the integral evolutions (179.8 ± 5.7) are close to those recorded in the simulated competition (individual 184.2 ± 10.5; group184.2 ± 6.07).

Conclusions. To be able to perform at high level the technical-artistic content in the group events, gymnasts must adapt to a superior energetic consumption, therefore to an intense exertion of the lactacid anaerobic system, which could become the source of technical errors and could influence both coordination and emotional stability. In order to diminish this part of the metabolic system in the production of the energy necessary to sustain the effort in rhythmic gymnastics, the priority must be to develop the aerobic potential, which allows the gymnasts' adaptation to the training exercise, their increased recovery possibilities and the delay of the lactic acid production.

Keywords: sport exercise, rhythmic gymnastics, competitional sport.