

## ASSESSMENT OF CHARACTERISTICS OF PHYSICAL CONDITIONING RELATING TO STRENGTH AND SPEED IN VOLLEYBALL

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**KEY WORDS:** volleyball, characteristics of physical conditioning, simple physical activities (SPA), strength and/or speed (CPC)

**INTRODUCTION AND PURPOSE:** Selection of the most talented young athletes frequently necessitates the screening of a large number of youngsters. In most sports, including volleyball, screening is for practical reasons limited to a small number of simple physical activities (SPA). It is questionable how well the particular SPA measure the characteristics of physical conditioning which are important for success in the sport. Therefore the purpose of this study was to: 1) measure characteristics of physical conditioning relating to strength and/or speed (CPC) in youngsters who were just selected to begin practicing volleyball on the basis of their performance in SPA, and 2) examine the relationship between the results of the SPA and the measured CPC.

**METHODS:** Seventeen youngsters (mean age=9.3 years) were selected by the Greek Volleyball Federation to begin practicing the sport on the basis of their performance in the following SPA: a) 30 meter sprint, b) shot putting 1 Kg, and 3) standing long jump. On the basis of previous research, the 17 youngsters' CPC relating to speed and strength was measured by testing them on: 1) maximum isometric push-off force ( $F_{max}$ ), 2) vertical counter-movement jump (CMJ), 3) vertical jump from a flexed hip, knee, and ankle joint position (SJ), 4) drop vertical jumps from heights of 10-30cm (DJ) and 5) maximum pedaling rate (zero resistance).

**RESULTS:** The results revealed a high correlation between performance in the 3 SPA ( $r=0.93-0.99$ ,  $p<.001$ ). Comparison between performance in the 3 SPA and performance in the 5 CPC revealed: 1) high correlations between performance in the 3 SPA and maximum pedaling rate ( $r=0.93$ ,  $p<.001$ ), 2) moderate correlations between performance in the 3 SPA and  $F_{max}$  ( $r=-0.38$ ), and 3) non significant correlations between performance in the 3 SPA and the remaining CPC.

**CONCLUSIONS:** This study revealed that performance in the 3 SPA utilized by the Greek Volleyball Federation correlates highly to only one of the measured CPC, moderately to a second CPC, and does not significantly correlate to the remaining measured CPC. Based on these results, the appropriateness of the 3 SPA as tools for the identification of CPC is questioned. It will be difficult to further improve CPC, if the tools utilized to identify them are questionable.