
Abstract
The physique of elite players in a team sport game (Olympic sport water polo) of two generations is study and compared. In both generations, in the years 1995 (N =95) and 2008 (N=87) the same measurement procedures and variables were used. The analysis of variance and discriminative analysis showed statistically significant differences in most of the 23 anthropometric variables. The main univariate differences were in variables of girths and skinfolds, both increased in GP2008. The latent variables, obtained by factor analysis, are representing: by girths and, subcutaneous adipose tissue on trunk, appendicle skeleton linear growth and limb skinfolds. No significant differences in linear growth, and, trunk subcutaneous fat factors, but, statistically significant positive differences in body muscle mass pertained in girths and decrease in limb skinfolds, were observed. The problem of the differences between two generations of athletes is identified as a complex system topic combining two different processes: that of population changes and sport selection (morphological optimization) on the one hand, and the changes in sport itself on the other. The simplified model of such complex change is also provided for possible future refinements and uses.

Key words: water polo, body physique, generations