

Characteristics, performance, and classification of young wheelchair basketball players

Valentina Cavedon, Carlo Zancanaro, Chiara Milanese

Università di Verona, Dipartimento di Scienze Neurologiche e del Movimento, Verona, Italy

The relationships among physical characteristics, performance, and functional ability classification of younger wheelchair basketball (WB) players have been barely investigated to date. The purpose of this work was to assess anthropometry, body composition, and performance in sport-specific tests in a national sample of Italian younger WB players, and their association with the players' functional ability classification and game-related statistics. Several anthropometric measurements were obtained for 52 out of 91 eligible players nationwide. Performance was assessed as score in seven sport-specific tests (5m sprint, 20m sprint with ball, suicide, maximal pass, pass for accuracy, spot shot and lay-ups) and game-related statistics (free throw points scored per match, two- and three-point field-goals scored per match, and their sum). For some analyses, players were grouped into four Classes (A-D) of increasing functional ability. Association between variables, and predictivity was assessed by correlation and regression analysis, respectively; one-way ANOVA followed by post-hoc test was used to assess differences within and between functional ability Classes, respectively. Results showed that two measures of sitting height and functional ability Class especially correlate with performance outcomes, but WB experience, skinfolds and FM% do not. Game-related statistics and sport-specific field-test scores all showed significant correlation with each other. Upper arm circumference and/or maximal pass and lay ups test scores were able to explain 42 to 59% of variance in game-related statistics ($P < 0.001$). A clear difference in performance was only found between functional ability Class A and D. In conclusion, sitting height positively contributes to performance in younger WB players, the maximal pass and lay ups test should be carefully considered in younger WB training plans, and functional ability Class reflects to a limited extent the actual differences in performance.