

Comparison of Health Related and Sport Related Characteristics of High-level and Low-level Under-14 Tour Ranked Tennis Players in Sri Lanka

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Tennis demands physical prowess and skill mastery where players' physical attributes play a crucial role in performance and injury prevention. A study conducted at the Sri Lanka Tennis Association examined 40 players (20 males, 20 females) using stratified random sampling, categorized by high and low groups. This study encompassed physical measurements and fitness tests including handgrip dynamometry, beep tests, sit and reach tests, hexagon tests, Y-balance tests, and medicine ball throws to compare the physiological characteristics of under-14 tour ranked tennis players in Sri Lanka. Results highlighted significant differences in health-related physical fitness among male players. High-level males exhibited superior endurance (mean 7.05 vs. 6.16), flexibility (mean 1.65 vs. 0.45), and strength (PHS=26.80 vs. 22.40, BHS=25.70 vs. 20.90, LHS=24.60 vs. 19.40). Statistically significant variations were observed in PHS ($p=0.040$), average strength ($p=0.031$), and endurance ($p=0.017$). Conversely, no significant differences were found among female players in these aspects. Sport-related physical fitness comparisons revealed significant disparities among males in balance components: BRA ($p=0.013$), BLA ($p=0.002$), and BLPL ($p=0.199$). Among females, significant differences were noted in balance components like BRA ($p=0.034$), BRPL ($p=0.004$), BRPM ($p<0.001$), BLPL ($p<0.001$), and BLPm ($p=0.002$). In summary, high-level male players demonstrated superior strength and endurance compared to lower-ranked peers, while female players exhibited pronounced differences in balance components. These findings underscore the importance of targeted training to enhance specific physical attributes crucial for competitive tennis success. Future research with larger samples and longitudinal designs will be essential to validate and refine training programs.

Keywords: *health related fitness components, sport related fitness components, junior ranked tennis players*