ABSTRACT

Background: Hand grip strength is supported as a valid physical capacity measure in older adults. Normative values for community-dwelling older adult hand grip strength were recently updated. With the majority of community-dwelling older adults identified as sedentary, it is likely that current norms represent a group that is relatively inactive. A sub-population of senior athletes who actively engage in exercise and competitive sport have consistently demonstrated superior performance on measures of physical capacity when compared to the general population. Normative values for hand grip strength have not been established for this unique group of aging athletes.

Purpose: To establish hand grip strength norms for senior athletes and to compare these outcomes to available normative data in community-dwelling older adults.

Study Design: Cross-Sectional Study

Methods: Measures of hand grip strength were taken on 2,333 senior athletes registered to compete in the National Senior Games between 2011 and 2017. Findings were divided into age and gender categories consistent with community-dwelling norms. Student t tests were used to compare senior athlete means to community-dwelling norms. Cohen's d was calculated to estimate the effect size of each comparison.

Results: Normative values for senior athlete hand grip strength are reported in kilograms by age, gender and hand dominance. For each age and gender category tested, senior athletes demonstrate dominant hand grip strength that ranges from 8.6-11.1 kg higher for males and 5.5 to 8.9 kg higher for females \( (p \text{ values} < .0001) \) than published community-dwelling norms. Non-dominant grip strengths were also significantly higher \( (p \text{ values} < .0001) \). Effect sizes were medium to large \( (\text{Cohen's } d = 0.44-1.5) \).

Conclusion: Senior athletes demonstrate hand grip strength that is significantly higher than their community-dwelling peers and more similar to a younger community-dwelling population. The population-specific norms presented here will assist health care providers in more accurately assessing this high-functioning subset of aging adults.

Levels of Evidence: 2b

Keywords: aging athlete, master’s athlete, senior olympics, fitness screen, movement system

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