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2023

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What's All the Racket? Comparing Physical Health Outcomes Between Pickleball and Tennis in Older Athletes

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Background

Pickleball was first introduced as a sport in 1965 by John Pritchard. Although the sport has been around for many decades, pickleball has become increasingly popular in recent years. In 2019, there were an estimated 1.15 million pickleball players over the age of 55, compared to 1.88 million tennis players in the same age bracket. Some attribute the growing popularity of pickleball to its psychosocial benefits and ease of play. When compared to tennis, pickleball utilizes a smaller court size, lightweight paddles, and wiffle balls, which may make the game accessible to more individuals.

The differences in court size and speed of play likely contribute to misconceptions regarding pickleball's physical benefits. This is best exemplified by literature reporting METs (metabolic equivalents) of various sports and activities. Doubles pickleball is estimated at 4.1 METs, while brisk walking is rated 4.0 METs and doubles tennis is rated 6.0 METs. Due to the considerably lower MET rating of pickleball compared to tennis, one might assume that pickleball presents lower physical demands or as some have stated, "tennis lite." There is a considerable lack of literature comparing physical health characteristics of pickleball and tennis athletes beyond mere metabolic estimates of activity, which may serve as a limitation for athletes and clinicians seeking to choose optimal exercise outlets.

Purpose & Hypothesis

Purpose: The purpose of this study was to use the senior athlete fitness exam (SAFE) to quantify and compare the health characteristics of older pickleball athletes to older tennis athletes.

Hypothesis: We hypothesize that, when screened with the SAFE, older tennis players will outperform older pickleball players.

Study design: Cross-sectional study

Subject Selection & Assignment

Inclusion:

- Registered National Senior Games athletes (pickleball or tennis)
- 2013-2019
- Completed SAFE assessment
- Age 50 or older in year of competition/testing

Exclusion:

- Multisport athletes registered for other sports in the same year.

Procedure

Sport status was determined via sport and health history interview. Athletes were then separated into pickleball and tennis groups. Mean and standard deviation or frequency was found for each SAFE subtest and results were compared between groups.

 <p>Cardiovascular Blood Pressure Waist-to-Hip Ratio</p>	 <p>Strength Grip Strength Five Time Sit to Stand</p>	 <p>Flexibility Posture Shoulder ROM Hip ROM Ankle ROM</p>	 <p>Balance Single-leg stance - Eyes open on foam - Eyes closed on ground</p>	 <p>Mobility Usual Gait Speed Fast Gait Speed Gait Speed Reserve</p>
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Data Analysis

Analysis was completed using SPSS software version 27.0. Participant demographic information, sport, and health history were analyzed using descriptive statistics. Chi-square analysis was utilized to determine frequency differences between groups and independent t-tests were performed for continuous variable between groups. Alpha was set at .05.

Results

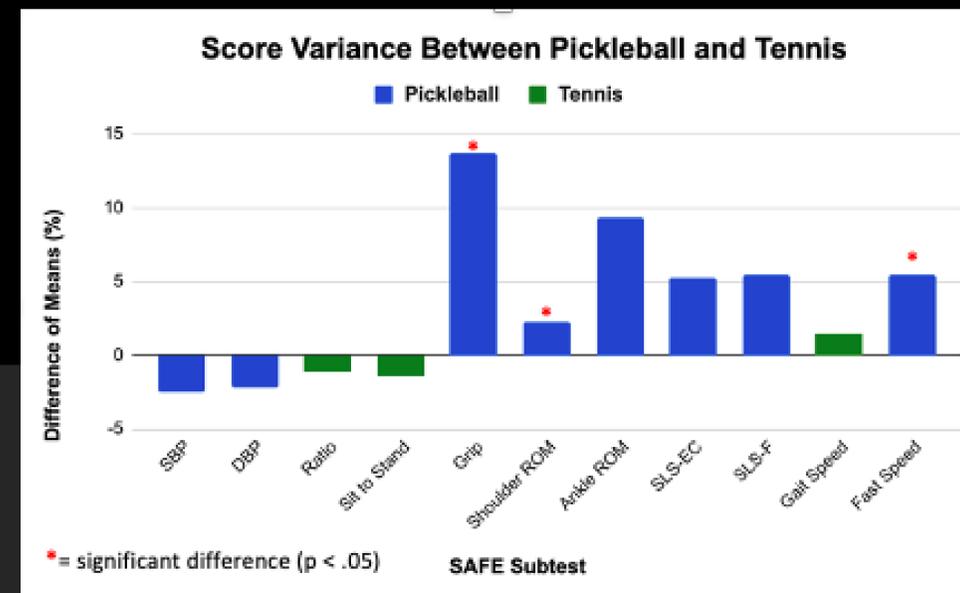


Figure 1. Score variance between pickleball and tennis athletes on the SAFE. The magnitude of difference is depicted for the sport with superior performance on the measure. Where lower scores are desirable the magnitude is reflected below the x axis. Where higher scores are desirable the magnitude is reflected above the x axis. * Designates where the magnitude of difference was significant.

SBP, systolic blood pressure; DBP, diastolic blood pressure; ratio, waist to hip ratio; sit to stand, Five Times Sit to Stand Test; Grip, maximal hand grip strength, Shoulder ROM, average of right and left shoulder flexion active range of motion; Ankle ROM, average of right and left ankle AROM dorsiflexion with knee straight; SLS-EC, single leg standing with eyes closed; SLS-F, single leg standing on foam surface; gait speed, usual gait speed; fast speed, fast gait speed.

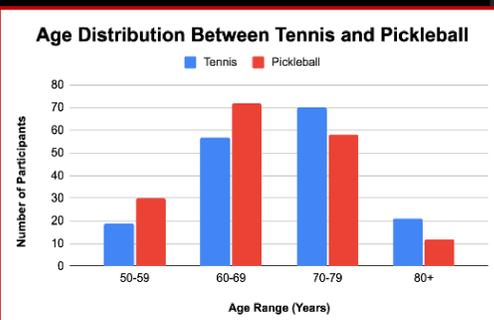


Figure 2. Age distribution of tennis and pickleball athletes.

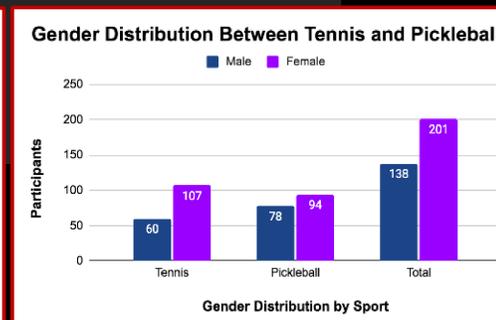


Figure 3. Gender distribution of tennis and pickleball athletes.



Discussion

The data from this study included 339 athletes - 169 participating in tennis, 172 participating in pickleball. Both sports had a similar distribution of gender and age. The results dispute the concept of pickleball as "tennis lite," or a form of exercise that yields inferior results compared to tennis. Not only did pickleball athletes compare adequately to tennis athletes; they also had significantly greater grip strength, shoulder ROM, and fast gait speed.

These results may create a question as to the importance of the mode of exercise when considering exercise prescription. Despite a lower MET estimate, pickleball yields favorable physical fitness results. Perhaps more important considerations are rooted in the foundations of exercise prescription, such as using the FITT principle and periodization to enhance performance as desired. It also seems that METs or current MET reporting are less helpful when gaging exercise intensity for these athletes.

Limitations

This study utilized a sample of convenience, where athletes participated in the SAFE at a time of their choosing - some may have been screened before their events, and some may have been screened after. This could leave the influence of fatigue as a confounding variable. Another variable not accounted for is each athlete's duration and intensity of training. Future research is needed to determine if these results are generalizable to non-trained athletes or other age groups.

Clinical Relevance

Our results suggest that playing pickleball can produce similar or greater health benefits compared to those gained via playing tennis in older athletes.

References

