COMPARISON OF Y-BALANCE TEST IN BADMINTON AND TABLE-TENNIS PLAYERS: AN OBSERVATIONAL STUDY

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2025

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DECLARATION BY CANDIDATE

We hereby declare that the project work submitted for the degree of Bachelor of Physiotherapy at the SPB Physiotherapy College has not previously been submitted to any other institution. We further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

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This is to certify that the project work entitled "**COMPARISON OF Y-BALANCE TEST IN BADMINTON AND TABLE-TENNIS PLAYERS: AN OBSERVATIONAL STUDY"** is a Bonafide research work done by PATEL MAITRI JIVRAJBHAI,SASPARA PRIYAL GHANSHYAMBHAI,PATEL AAHNABEN KANUBHAI under the guidance of. **DR SNEHA BHALALA BPT/MPT(Pediatrics)/PhD**

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ABSTRACT

Background:

Dynamic balance is crucial in racket sports such as badminton and table tennis, where athletes frequently perform rapid directional changes, lunges, and single-limb movements. The Y-Balance Test (YBT) has emerged as a reliable tool to assess dynamic balance and detect asymmetries that may predispose athletes to injury.

Aim:

This study aimed to compare dynamic balance performance between badminton and table tennis players using the YBT, and to evaluate sport-specific adaptations and injury risk profiles.

Methodology:

A cross-sectional observational study was conducted on 128 male athletes aged 18–30 years, with 64 participants from each sport. The YBT was administered to evaluate reach distances in three directions—anterior, posteromedial, and posterolateral—for both limbs. Composite scores were calculated and normalized by leg length. Data were analyzed using descriptive statistics and independent t-tests to assess balance asymmetry and sport-specific differences.

Results:

Badminton players demonstrated slightly higher average reach distances, especially in posterior directions, but also greater variability and asymmetry compared to table tennis players. Table tennis players exhibited more consistent performance and symmetry. No statistically significant differences in YBT scores were observed between athletes with and without asymmetries ($p > 0.05$ for all directions). Posteromedial reach had the highest average score, followed by posterolateral and anterior. The composite balance score averaged 86.22%, indicating a high level of balance across the sample. Injury observations revealed a higher incidence of lower limb injuries in badminton players, while table tennis athletes experienced more upper limb overuse injuries.

Conclusion:

The YBT proved to be a valuable assessment tool for identifying dynamic balance profiles and asymmetries in racket sport athletes. While asymmetries did not significantly affect performance metrics, badminton players showed biomechanical patterns that suggest higher injury susceptibility. These findings highlight the need for sport-specific balance training and targeted injury prevention strategies.

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