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ESTABLISHMENT OF NORMATIVE DATA FOR UPPERLIMB FUNCTION PERFORMANCE USING ONE ARM HOP TEST AMONG OVER HEAD ATHLETES.

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Background: Upper limb function is vital for overhead athletes due to repetitive arm motions stressing the shoulder, elbow, and wrist. Overhead sports are characterized by complex biomechanical movements that place substantial stress on the glenohumeral joint, scapular stabilizers, and surrounding musculature. Repetitive motion patterns, such as the throwing or striking motion, often lead to adaptations in strength and mobility, but may also predispose athletes to overuse injuries. The One-Arm Hop Test provides an objective measure of upper limb strength, power, and stability. Establishing normative data helps in performance assessment, injury prevention, and rehabilitation.

Purpose: To establish normative data for upper limb function performance using the One-Arm Hop Test among overhead athletes and to examine the effects of arm dominance, gender, age, and sport type.

Methods and Materials: A cross-sectional study of 300 healthy overhead athletes (aged 18–26 years) from volleyball, basketball and handball was conducted. The One-Arm Hop Test was performed on both arms following standard procedures. Data were analyzed using descriptive and comparative statistics to determine normative values and test reliability.

Results: The test showed high reliability. Dominant arms outperformed non-dominant arms, with sport-specific differences favoring throwing-intensive athletes. Normative ranges were established for performance classification. The results showed a mean performance of 8.37 ± 1.06 sec for the dominant (right) hand and 9.25 ± 1.03 sec for the non-dominant (left) hand, with a statistically significant difference ($t = 9.91$, $p < .00001$).

Conclusion: The One-Arm Hop Test is a reliable tool for evaluating upper limb function in overhead athletes. The normative data can aid in performance monitoring, early deficit detection, and injury prevention. Overall, this study provides a valuable reference for evaluating upper-limb function in male overhead athletes and underscores the need for further research to expand these norms across sexes, age groups, and different sports.

Keywords: Upper limb function, One-Arm Hop Test, overhead athletes, normative data, Arm dominance.