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Lower Extremity Injuries and Landing Kinematics and Kinetics in University-Level Netball Players

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Abstract : Background: Safe landing in netball is fundamental. Research on the biomechanics of multidirectional landings is lacking, especially among netball players. Furthermore, few studies reporting the associations between lower extremity injuries and landing kinematics and kinetics in university-level netball players have been undertaken. Objectives: The aim is to determine the relationships between lower extremity injuries and landing kinematics and kinetics in university-level netball players that have been undertaken during a single season. Methods: This cross-sectional repeated measure study consisted of ten university-level female netball players. The injury prevalence data was collected during the 2022 netball season. The kinematic and kinetic data were collected during multidirectional single-leg landing trials and was collected. Results: Generally, the ankle strength of netball players was below average. There was evidence of negative correlations between the ankle range of motion (ROM), and muscle activity amplitudes. A lack of evidence precluded the conclusion that lower extremity dominance was a predisposing factor for injury and that any specific body part was most likely to be injured among netball players. Conclusion: Landing forces and muscle activity are direction-dependent, especially for the dominant extremity. Lower extremity strength and neuromuscular control (NMC) across multiple jump-landing directions should be an area of focus for female netball players.

Keywords : netball players, landing kinetics, landing kinematics, lower extremity
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