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Community Health / Policy

**Abstract Title**

Rates of head contacts, body contacts, suspected injuries, and mechanisms of injury in club versus university volleyball: a video analysis study.

**Background**

While sport participation is associated with positive health outcomes, injury risk is a concern. Volleyball is played by over 50,000 Canadian youth and common injuries include those to the ankle, finger, wrist, shoulder, and lower back.

**Objective**

This study aimed to quantify and compare the incidence of head contacts (HCs), body contacts (BCs), and non-contact suspected injuries (NCSIs) among four cohorts of volleyball athletes during the 2023–2024 season: male and female 15U–17U Winnipeg club players, and male and female CanadaWest USPORTS athletes. The secondary objective was to characterize the mechanisms and contexts in which these events occurred.

**Methods**

Video recordings of matches were viewed using validated coding procedures in Dartfish. HCs, BCs, NCSIs, and contextual gameplay characteristics were documented. Incidence rate ratios (IRRs) with 95% confidence intervals per 100 player-match hours were estimated using Poisson regression.

**Results**

BCs occurred significantly more frequently in club athletes than in USPORTS athletes for both females (IRR=1.35, 95% CI:1.22–1.49) and males (IRR=1.35, 95% CI:1.25–1.47). HCs were not significantly different across competition levels for females (IRR=1.86, 95% CI:0.89–3.89) or males (IRR=0.61, 95% CI:0.36–1.03). However, male club athletes had significantly higher HC rates than female club athletes (IRR=3.21, 95% CI:1.61–6.37). Eighteen NCSIs were recorded, including two suspected concussions, and rates were not significantly different among the four groups. Most contacts were observed during defensive (33.22%) and blocking (32.64%) actions. The majority of contacts were low intensity (83.56%).

**Conclusion**

Male club athletes had the highest exposure to contact and non-contact injury events (45.4 per game). These findings highlight the importance of level- and sex-specific injury prevention strategies, such as targeted education and potential rule modifications (e.g., automatic stoppages after HCs).

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