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THE EFFECTIVENESS OF HIGH-VELOCITY ELASTIC-BAND TRAINING IN REDUCING THE OCCURRENCE OF HAMSTRING INJURIES IN FOOTBALL PLAYERS

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INTRODUCTION:

Hamstring muscle injuries rates showed an increase in football players in recent years (Ekstrand et al. 2022). Significant portion of hamstring injuries occurs during high-velocity activities (Askling et al. 2012; Gronwald et al. 2022). However, current popular prevention strategies mainly target the development of maximal strength, which entails exercises performed at low velocity. We hypothesized that high-velocity elastic band training will reduce hamstring injury risk in football players.

METHODS:

Male players from Lithuanian and Spanish semi-professional and professional teams (n = 608, age: 22.0 ± 5.0 years, playing experience: 14.8 ± 5.3 years) were recruited for this study. However, variations in methodology occurred due to disparities in the schedules of their respective championships as well as environmental factors. As a result, the analysis was conducted solely on data collected during the Lithuanian championship, which involved a total of 319 players from nine teams in the premier league and six teams in the 1st division. The players were assigned to either the intervention (INT) or control (CON) group for a five-week exercise period, followed by a ~4-month follow-up period where hamstring injuries and exposure time were recorded. In addition to regular football training, the INT group had 2–3 sessions per week of elastic-band training with low-load, high-velocity leg curls while lying prone; the CON group performed self-paced football-specific drills.

RESULTS:

The INT group reported 8 hamstring injuries in 123 players (6.5%), whereas the CON group reported 18 injuries in 196 players (9.2%). Although the injuries rate was observed to be 29.2% lower in the group of individuals who underwent the intervention, the distribution of injuries between the INT and CON groups was not found to have a statistically significant difference (p>0.05). Moreover, no differences (P > 0.05, odds ratio [OR]= trivial-to-small) in distribution between the groups were found in hamstring injury characteristics (leg side, leg dominance, recurrence, typology and mechanism) except for the distribution of injuries that occurred during matches or training (P = 0.036; OR = 11.0, very large).

CONCLUSION:

The high-velocity elastic-band training program did not effectively prevent hamstring injuries in football players, despite showing some potential of including this exercise in injury prevention programs.

References:

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