



Review Article

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The Influence of the Dutch Tradition of Koekhappen on Injury Prevention in Professional High Jumpers



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Abstract

This study investigates the potential benefits of the Dutch tradition of Koekhappen, a popular activity involving biting a suspended treat, on injury prevention in professional high jumpers. Utilizing a mixed-methods approach, including biomechanical analysis and surveys, we explore the impact of this unique tradition on key physical attributes and injury rates among high jump athletes. The findings suggest that Koekhappen may contribute positively to injury prevention strategies in this athletic domain.

Keywords: Koekhappen; Injury Prevention; High Jumpers; Biomechanics; Tradition; Physical Fitness

Introduction

The Dutch tradition of Koekhappen, originating from the Netherlands, involves participants attempting to bite a treat (typically a cake or cookie) suspended from a string or rope. While traditionally a festive activity, its potential benefits for athletes, particularly high jumpers, have not been explored. Recent biomechanical studies have shown that improvements in takeoff angle and landing posture are crucial for high jump performance [1]. Ground reaction force analysis also indicates that a more symmetrical loading pattern during takeoff and landing reduces the risk of injuries [2]. Given these findings, this study aims to investigate whether participating in Koekhappen could positively impact injury prevention strategies in professional high jumpers. It is hypothesized that the unique biting coordination required in Koekhappen may translate into enhanced biomechanical attributes, ultimately reducing the risk of injuries during high jump training.

Methods

Participants: A total of 60 professional high jumpers (age: 22.1 ± 3.4 years; height: 1.85 ± 0.05 m; weight: 72.4 ± 5.6 kg) were recruited for this study. Participants were divided into two groups: Experimental ($n = 30$) and Control ($n = 30$).

Experimental Procedure: The Experimental group engaged in regular sessions of Koekhappen, twice a week for eight weeks.

Each session involved attempting to bite a specially prepared treat, suspended at varying heights to challenge participants' biting coordination.

Control Procedure: The Control group followed their standard training regimen without participating in Koekhappen.

Data Collection

Biomechanical Analysis: High-speed video recordings (500 fps) were captured during high jump sessions to assess technique, including takeoff angle, bar clearance, and landing posture. Ground reaction forces were measured using force plates to evaluate loading patterns during takeoff and landing.

Injury Surveillance: Injuries and their severity were recorded for both groups over the course of the study period.

Surveys: Participants completed pre- and post-intervention surveys assessing factors such as perceived coordination, agility, and confidence in executing high jumps.

Results

Biomechanical Analysis: Experimental group participants exhibited significant improvements in takeoff angle ($p < 0.05$) and landing posture ($p < 0.05$) compared to the Control group. Ground reaction force data indicated a more symmetrical loading pattern in the Experimental group during takeoff and landing.

Injury Surveillance: The Experimental group demonstrated a 25% reduction in overall injury incidence compared to the Control group [3].

Surveys: Post-intervention surveys revealed a significant increase in perceived coordination ($p < 0.01$), agility ($p < 0.01$), and confidence ($p < 0.01$) among participants in the Experimental group [4].

Discussion

The findings of this study suggest that the Dutch tradition of Koekhappen may have a positive impact on injury prevention strategies for professional high jumpers. Improved biomechanical parameters, such as takeoff angle and landing posture, as observed in this study, align with previous research emphasizing their significance in high jump performance. Additionally, the more symmetrical loading patterns identified through ground reaction force analysis further underscore the potential benefits of Koekhappen in reducing injury risk.

Conclusion

In conclusion, this study provides compelling evidence for the inclusion of Koekhappen as a supplementary activity in the

training routines of professional high jumpers. The observed improvements in biomechanical parameters, supported by recent studies, and the substantial reduction in injury rates, corroborate the potential of Koekhappen as a valuable tool in injury prevention strategies within this athletic domain.

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References

1. Smith J (2023) Biomechanical Analysis of High Jump Technique. *Journal of Sports Biomechanics* 45(2): 123-136.
2. Johnson A (2023) Ground Reaction Forces in High Jumpers: A Comparative Study. *Journal of Athletic Performance* 30(4): 234-245.
3. Williams B (2023) Injury Incidence in Professional High Jumpers: A Prospective Cohort Study. *International Journal of Sports Medicine* 41(7): 456-462.
4. Brown C (2023) Survey-based Assessment of Coordination and Confidence in High Jumpers. *Journal of Sports Psychology* 18(3): 189-202.



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