Abstract

Title

Kinesiological overview of evaluation methods of sprinting and hurdling in track and field.

Objectives

The objective of this thesis was to analyse the possibilities of kinesiological evaluation as described in the literature, especially with regard to understand sprinting and hurdling in track and field; to familiarize myself with the possibilities of a complete evaluation of sprinting and hurdling, and then to try to raise a kinesiograph of the movements of a hurdler in intentionally selected photosequences.

Methods

This thesis is focused on the possibilities of kineological evaluation of sprinting and hurdling in track and field. It's based on a review of selected scientific publications about human motion system, general kinesiology, kinesiology of pelvis and lower limbs, descriptions and techniques of sprinting and hurdling and special kinesiology of sprinting and hurdling in track and field. Furthermore, indirect observation and watching videos of top hurdlers in motion were also used for the selection of intentional photosequences to attempt a kinesiological evaluation of hurdling.

Results

Through relevant scientific publications – 71 published on print and 9 on electronic media – I realised that kinesiological evaluation of sprinting and especially of hurdling is very difficult and complicated. Many authors, which mostly agree in their opinions, were engaged and are still engaged in the kinesiology of sprinting, they only have slightly different approaches, focusing on and prioritizing other aspects. Therefore cannot be declared the same about the kinesiology of hurdling, because there is almost no known analysis or study where authors tended to evaluate hurdling regarding its kinesiological aspects. As demonstrated in sprinting studies, EMGs cannot be sufficiently applied on deeper muscles, as well as intense movement and short tract are

also perplexing factors. Nevertheless all authors concerned with the analysis of participation and functioning of muscles in sprinting and hurdling agree about the most important muscles that are m. gluteus maximus, m. iliopsoas and hamstrings. Almost each one of them calls attention to the importance of the abdominal muscles and the muscles of the upper limbs that are crucial for the stability of the body and for the interplay of the arms with the movements of the feet. However I think that an extended and solid evaluation of hurdling from kinesiological aspects would be worth of study as well.

Key words

track and field, kinesiology, movement, sprinting and hurdling in track and field