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The impact of balance and mindfulness training on young biathletes shooting efficiency

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INTRODUCTION:
The purpose of the study was to evaluate the effectiveness of two alternative methods for improving the shooting performance of biathletes. The first relies on motor skills and stresses body balance. Not only does effective postural balance reduce the risk of body imbalance, falls, and associated injuries, but it also enhances motor performance in a variety of sports. The second method is based on the concept of mindfulness and emphasizes psychological competence. Mindfulness is a way of paying attention that involves putting your attention on the present moment and accepting it without judging it. Recent research shows that parts of mindfulness are linked to better shooting performance in competitions. This is because mindfulness and refocusing make you more aware of your surroundings.
METHODS:
The 6-week balance training and 6-week Mindfulness Sports Performance Enhancement (MSPE) programs were designed to improve youth biathletes shooting performance. In this study, 16 youth biathletes served as the experimental group, whereas 10 youth biathletes served as the control group. Both categories were covered by National Sports Championship Schools. The tests included functional balance tests, balance tests on force platforms, dry shooting tests with the Scatt shooting system, and a number of psychological inventories and assessments. Also, the quality of the aiming was tested with a video tracking system and laser feedback experiments. After the biathletes did a short, hard workout on a ski ergometer, their performance was also measured after they were tired. The experimental group was separated into a Stability (n=8) group and a Mindfulness (n=8) group, and after the initial measures, they completed different training programs concurrently with their daily practice.
RESULTS:
Significant associations existed between posturographic parameters and shooting performance. There were also substantial correlations between shooting ability and the results of tests and questionnaires measuring mindfulness. After the training, the importance of these dependencies was emphasized even more than before. The trials after effort implemented in the experiment did not appreciably alter these characteristics. We were only able to identify a positive trend in the direction of balance and mindfulness improving, but these changes did not reach the level of statistical significance required to be considered significant.
CONCLUSION:
The most significant and potentially advantageous result of the research is that it lends support to the theory that maintaining ones physical equilibrium and being mindful of ones surroundings can significantly improve ones shooting accuracy. Our findings should be replicated in subsequent research using the same procedures, but with athletes who are more skilled and with a larger number of participants overall. It is likely that the studys results would be more evident if the training program had been implemented at the beginning of the planning phase.

Topic: **Training and Testing**

Presentation **E-poster**