EXPLORING THE EFFECTS OF A VARIABILITY BASED INTERVENTION ON GOLF PERFORMANCE– IMPACT ON PITCHING

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Introduction

Golf has been experiencing a sustained evolution at the mental, tactical, and physical levels of performance. However, current training approaches seem to be not aligned with such evolution, since training methods are based on a repetitive approach (Aiken & Genter, 2018). However, current training practices have been suggesting practicing different skills practice with variations (Santos et al., 2018). In fact, it has been highlighted the role of movement variability by the means of differential learning in improving performance and movement adaptability (Santos et al., 2018). Despite the widely recognized benefits of variability, research exploring its effects in individual sports, such as golf, is scarce. Therefore, this study explored the effects of a training program grounded on variability on the pitching performance of golf athletes using the trackman 4 data.

Methods

A total of 29 practitioners were divided into two groups (experimental, n=15, age: 15.9±2.62 and control, n=14, age:16.6±1.15). Each group was exposed to 10 training sessions in which they played for three distances, i) 20m; ii) 35m; and iii) 50m. The control group performed 9 trials on each distance (n = 27 trials per session) in a repetitive way, while experimental group performed the same number of trials but in which the distance varied at every trial in combination with the manipulation of additional constraints (e.g., using an eye patch, varying the surface type, and others). Players were tested in a pre-post test design, consisting of 10 trials on each distance, and the hitting performance was measured with the Trackman 4. Players and their parents were informed of the aim and procedures and signed a consent form to participate. The protocol followed the guidelines stated by the local Institutional Research Ethics Committee and the recommendations of the Declaration of Helsinki.

Results and Discussion

In general, the intervention grounded on differential learning was more effective in improving players performance, mainly at the 50m distance. Accordingly, higher face angles and attack angles were found in the experimental group for the 20m distance (small effects, $p \leq .05$), 35m distance (moderate effects, $p \leq .05$) and 50m distance (moderate effects, $p \leq .05$). In contrast, higher values of dynamic loft were found in the control group for the 35m and 50m distances (moderate effects, $p \leq .05$). The experimental group also improved performance (small effects, $p < .001$), club speed (small effects, $p < .01$) and carry distance (small effects, $p < .01$) compared to the control group. These results suggest that introducing variability into the training session is especially beneficial to the pitching performance for longer distances. The variability allows the athlete to explore new movement possibilities that may enhance the movement adaptability according to the environmental demands.

Significance

Firstly, it may shed light on the role of adding variability during practice routines to improve technical performance and movement adaptability (e.g., technical adaption to weather or surface conditions). While the experimental group showed higher improvements, the effects were clearer at longer distances (i.e., 50m). In addition, by using variability in the training practice, coaches may promote adaptations at the level of the attack angle and dynamic loft. Secondly, by using a wide spectrum of variations, it is likely that all athletes would face challenging's and proper tasks that would enhance their performance. In this respect, adopting practices grounded on variability may be useful to shape athletes' swing technique, mainly at longer distances.

References

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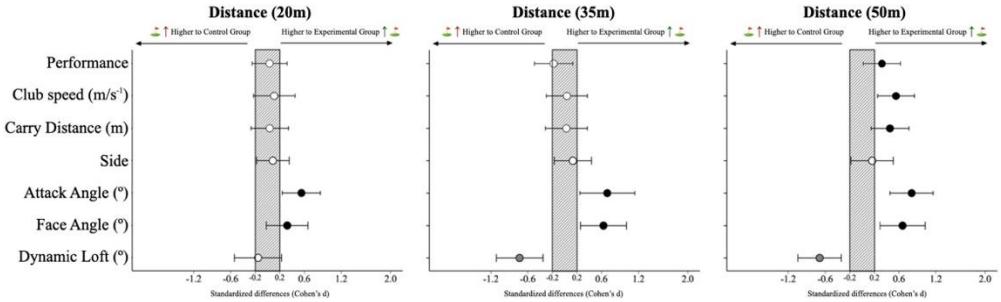

Figure 1. Standardized differences (Cohen's d) between the training groups for different distances (20m; 35m and 50m).