

PHYSICAL ASSESSMENT AND KINEMATIC SEQUENCE ANALYSIS OF COLLEGIATE GOLFERS

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Introduction

The purpose of this research study was to assess collegiate golfers for injury inducing golf swing mechanics using the Titleist Performance Institute (TPI) Level 1 physical screen and the K-Motion system. Epidemiological studies have shown that low back pain is regarded as the most common golf injury and physical assessment and swing analysis of collegiate golfers would indicate any deficiencies. This debilitating injury affects younger and older golfers by not only limiting playing time but impacting performance and technique. Proper screening and evaluation of golfers of any age group is necessary to help prevent injury and golf-swing faults from occurring.

Methods

Participants in this study completed the TPI Level 1 physical screen and 10 golf swings using the K-Motion system. Participants attend three separate sessions at the beginning, middle, and end of the season to complete the TPI screening and one session for the K-Motion System. Data collected from the TPI screening over the three sessions was analyzed through a repeated measures ANOVA to note any significant change and a post hoc T-Test to identify where the change occurs. Data collected from the K-Motion Capture was used to compare results from TPI Screen.

Results and Discussion

Results from this TPI screen predominantly indicated a deficiency in the S-Posture, Early Extension and Loss of Posture swing faults for the participants in this research. Additionally, Flat Shoulder Plane, Reverse Spine Angle, and C-Posture were additional deficiencies noted in the findings. K-Motion System data supported the findings from the TPI screen swing faults and provide kinematic sequence data for each participant. Speeds from the hip, thorax, lead arm, and hand were used to observe deficiencies in the golf swing movement compared with professional golfers. With a limited sample size, data collected from this study provided insight into swing faults and timing deficiencies amongst collegiate golfers. Future areas of inquiry from this work would include using these assessments to create corrective exercises, swing, and speed training.

Significance

This study is significant to golf as it focuses on screening and assessment of collegiate golfers and identifying their swing deficiencies throughout a competitive season. As research has focused on several different populations, this study intended to provide a deeper perspective with collegiate golfers leading to further areas of inquiry including the development of specific intervention programs to be implemented during a competitive season.

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