

Mallory Faherty - Abstract

“A Description of Lower Extremity Musculoskeletal Characteristics, Injury, and Injury Risk Factors in NCAA Division I Athletes Participating in Lower Extremity Dominant Sports”

Musculoskeletal injuries (MSI) are a frequent occurrence in lower extremity (LE) dominant sports. The serious and persistent nature of these MSI affects an athlete's ability to compete, compromises their health, and has long-term impacts on their wellbeing and ability to maintain an active lifestyle. The purpose of this study was to identify the incidence of LE MSI in athletes, describe the musculoskeletal characteristics of the LE, and identify the association between musculoskeletal characteristics of the LE and the rate of LE MSI. A total of 131 NCAA Division I athletes participating in LE dominant sports at the University of Pittsburgh participated in this study (48 soccer athletes, 43 football athletes, 16 volleyball athletes, 24 basketball athletes). Each subject completed an assessment of LE musculoskeletal characteristics including, range of motion, flexibility, isometric strength, as well as static and dynamic postural stability. Descriptive statistics were calculated for all variables and used to describe musculoskeletal characteristics of the LE in athletes. Data was tested for normality utilizing a Shapiro Wilk test. Statistical significance was set a priori at alpha = 0.05, two-sided. Injury rate, injury incidence rate ratios, and corresponding 95% confidence intervals were calculated in order to describe the incidence of LE MSI. Separate univariate Poisson regression analysis was conducted to assess the association between the predictor variables and LE MSI rates in athletes. Football demonstrated the highest rate of LE MSI, followed by women's soccer and men's soccer, as well as women's basketball and men's basketball. Women's volleyball had the lowest rate of LE MSI. Range of motion, flexibility, and strength of the LE were determined to be modifiable risk factors for LE MSI in all sport types excluding football and men's basketball. Each sport type displayed a different profile of modifiable risk factors for LE MSI. Therefore, it is important that clinicians focus on sport type specific modifiable risk factors for LE MSI. By targeting the specific differences in modifiable risk factors for LE MSI identified in the present study, clinicians can provide more comprehensive and targeted care; potentially decreasing the duration of missed participation and risk of re-injury.