
An Investigation of Lower Extremity Injuries in Soccer Athletes Related to their Playing Environment

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Context: The goal of this study was to investigate a connection between cleat type, surface type, and increased lower extremity injury rates in soccer athletes. Our hypothesis was that the cleat model, surface type, and facility affected the lower extremity injury rate among soccer athletes. **Methods:** A review of survey results distributed to the male and female soccer from an NCAA D-I program was completed. The survey investigated athlete injury history related to the specific shoe worn and the field surface information where the injury occurred. Measures of central tendency were calculated. Data was analyzed using a correlation analysis with the alpha level set at 0.05. **Results:** Twenty-one athletes completed the survey. Of the participants, 13 were between the ages of 18 and 20, while seven were between the ages of 21 and 23. Females were 52.38% of the respondents, while 42.86% were men. The breakdown in the type of cleat worn by the athletes is as follows: NIKE MERCURIALS (9), NIKE PHANTOMS (4), NIKE TIEMPOS (6), and NIKE PREMIER (1). Out of 50 possible respondents, 21 were completed (42%). Of the 21 respondents, 13 (61.9%) reported a soccer-related injury last season. Athletes reported 10 acute injuries and 4 chronic injuries lasting longer than 6 months. The direct mechanism of injury saw 9 non-contact mechanisms, while 5 suffered a contact injury. Nineteen injuries occurred in practice, and 8 were during a game. Injuries occurred more frequently at home (11 or 52.38%) during practice (10). Injuries occurred more frequently on artificial turf (52.38%) than on natural grass (14.28%). The multiple linear regression analysis reported no significant findings. **Conclusions:** Our study investigated the relationship between cleat type, surface type, and increased lower extremity injury rates in soccer athletes. We rejected our hypothesis based on the statistical analysis as our results found no connection to an increased lower extremity injury rate despite the cleat worn or surface. Our results contradict other published research indicating a correlation between cleat type, surface type, and lower extremity injury rates. Studies demonstrated lower extremity injury rates increase daily by 16% on artificial turf (old-generation and new-generation) with increased ankle and foot injuries. Natural and artificial surfaces are guilty of increased hip and knee injury, with females having a significant increase in anterior cruciate ligament injury risk playing on natural grass. A limitation of our study was the small number of participants, which affected the findings. The response rate was at a lower level than hoped.