The Incidence and Prevention of Catastrophic Injuries in Track and Field Due to Falls: Applications of Haddon's Injury Prevention Countermeasures and Matrix

Context: Track and field is a popular sport for male and female athletes. Commonly thought to have lower injury rates than other sports, catastrophic injuries still occur. Targeted prevention measures can be formed by identifying risk factors. Objective: The incidence of catastrophic injuries from falls among high school and collegiate track and field athletes were described. Specific cases were selected and analyzed to identify injury reduction strategies. Methods: Catastrophic falls were collected from the National Center for Catastrophic Sport Injury Research (NCCSIR) from 7/1/1982 to 6/30/2019. Twelve catastrophic injuries were selected for their similar mechanism of injury and detailed injury report. Cases were analyzed using Haddon’s matrix and countermeasures. Results: Over 37 years, 61 catastrophic injuries from falls in track and field were captured among college and high school athletes. The majority of catastrophic falls were from a height (89%) during competition (53%) or practice (46%) and among male athletes (93%) and in high school (72%). All fatal and disabling injuries and 80% of head/skull injuries were among pole vaulters. Countermeasure analyses of the 12 cases selected indicated ensuring quality care post-injury, utilizing protective equipment, and modifying hazards to decrease risk were the most relevant to prevent or reduce injuries. Conclusions: Though catastrophic falls in track and field are infrequent, determining targeted countermeasures could reduce the incidence and severity of catastrophic falls. Early recognition and implementation of an emergency action plan, an onsite athletic trainer, and activation of EMS and definitive medical care are critical for preventing death and disability.