Characteristics of Sports-Related Concussion in an Adolescent and Young Adult Sample

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Context:
It is estimated that 38 million children and adolescents participate in organized sports in the United States and over 486,000 NCAA student athletes compete annually, of which there is approximately 1.6 to 3.8 million concussions diagnosed. Concussions are unique in that they manifest differently between persons and the general recovery trajectory is quite varied. Recovery is typically classified as the resolution of symptoms. Additionally, it is important to understand the long-term sequelae of symptoms following sports-related concussion.

Objective:
The objective of this study was to describe the characteristics of sports-related concussion in an adolescent and young adult population. Methods: A retrospective review of de-identified patient data abstracted from individual medical records was conducted on patients diagnosed with a concussion between 2010 and 2016. Age at time of injury, gender, cause of injury, date of injury, date of testing, patient-reported cognitive, physical and emotive symptoms, and health history were all collected on the date of exam. Cases of symptomology longer than one year were excluded from analysis.

Results:
A total of 148 concussion cases were identified (119 males, 29 females). The most common injuries were football (52.7%), soccer (15.5%), and basketball (14.2%). Timeframe in which symptomatic patients were evaluated varied with 7% of patients assessed within 7 days since injury, 9% within 8-14 days, 32% between 14 and 30 days, 33% between 30 and 90 days, and the remaining 19% assessed after 90 days post-injury. Difficulty with short-term memory (29%), processing speed (29%), and attention (25%) were among the most commonly reported cognitive complaints. The most common physical symptoms were headache (38%), dizziness (26%), and fatigue (25%). Irritability and aggression were reported in 17% of the population.

Conclusion:
The results of this retrospective study illustrates the variable nature of sports-related concussion sequelae of symptoms. It is important to recognize that each case is unique and the resolution of symptoms does not follow a uniform trajectory. This is important as researchers continue work to identify better management and rehabilitation strategies following these injuries.