

Pediatric Concussion Epidemiology and Incidence in General Aspects of Life

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Introduction

Concussions are one of the most prevalent types of head injuries in children. While concussions in sports are extensively established, concussions in other elements of a child's life are not as thoroughly explored. The goal of this study is to look at the prevalence of a large pediatric concussion population in a variety of everyday activities. Methods: The gender and type of the injury were taken from 1408 medical records of patients diagnosed with a concussion at Saint Peter's Sports Medicine Institute. Chi-squared tests were used to conduct statistical analysis for activities and environmental situations.

Description

Concussion is a frequent traumatic brain condition associated with contact sports or war traumas. Previous research has concentrated on the prevalence of concussions in specialist sports like ice hockey or football, as well as in particular pediatric/youth environments like organized high school or collegiate sports. Generally, studies have focused on the percentage of players who sustain concussions when participating in a certain sport in a specific geographical region, as well as which mechanisms of that sport are the major source of concussions. According to studies, the frequency of concussion diagnosis increased by 71% in the 10- to 19-year-old age range between 2010 and 2015 [1].

The increase in concussion diagnosis is most likely due to increased public awareness of concussion injuries, as well as caretakers and athletic trainers/coaches becoming more alert in seeking medical attention when a kid exhibits symptoms consistent with concussion post-injury. However, previous studies have not traditionally evaluated the prevalence of concussions acquired in the general juvenile population in a range of situations other than athletics. The prevalence of concussion is increasing, although the exact epidemiology is yet unknown. Many studies show that girls in organized sports had a higher incidence of sports-related concussion than males.

The findings of this retrospective analysis are mainly consistent with earlier research on gender variations in concussion incidence. In this study, more females than males sought treatment for a concussion. Due to the retrospective study's restricted regional scope, the simple conclusion that females are more prone to concussion than males is not conclusive. One probable explanation is that women prefer to seek care from female practitioners over male practitioners. However, no current research corroborates this interpretation and a more in-depth examination of the extra data points reveals alternative tendencies. When this study's whole organized sports cohort is analysed [2].

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The examination of organized sports that are assumed to have equal gender participation would lower the false positive rate. Football, lacrosse, combat sports (including MMA, wrestling and boxing) and ice hockey showed higher rates of male concussions, as expected. Sports with traditionally strong female involvement in New Jersey, such as cheerleading, field hockey and softball, have higher rates of female concussions. When sports with equal male and female participation, such as soccer (57 percent) and basketball (59 percent), were examined, females were observed to have a higher incidence of concussions; however, these higher female observations were not statistically different ($p > 0.5$) from gender proportions of the total study population [3].

However, this study found that soccer, football, basketball, lacrosse, cheerleading, combat sports, ice hockey, softball and field hockey had the greatest rates of concussions among children. There are a few plausible explanations for why soccer has a greater frequency of reported concussions than football [4]. First, soccer is a year-round activity, whereas football is primarily a fall sport; as a result, soccer has a greater number of possibilities for concussions to occur. Furthermore, recent general media reports from New Jersey and across the United States reflect a fall in organized football participation, which is thought to be related to public safety concerns.

Concussions caused by organised sports were the leading cause of concussions, accounting for 53% of all documented concussions. The second primary cause, on the other hand, was previously unknown and was demonstrated in this study to occur in school settings for paediatric and teenage age groups. Injuries in the school context were defined as those that happened during PE class, in a classroom, or in the corridor. Consistent with the broader trend of sports-related concussions, the majority of concussions at the school were similarly sports-related. Concussions during school PE account for 11% of overall study concussions, but organised soccer accounts for 13% of total concussions and organised football accounts for just 10% of total, which is less than school PE [5].

Conclusion

Studies from other parts of the world are needed to see if the tendencies seen here apply to other populations. The patterns and gender disparities revealed in this study, such as the greater frequency of female concussions during school PE and motor vehicle crashes, have the potential to be observed in other locations as well. This information has the potential to improve awareness and make the general public more attentive, resulting in fewer concussions in the future and encouraging more individuals to seek treatment after a suspected concussion.

Conflict of Interest

None.

References

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