



Reporting of Concussions and Concussion-like Symptoms in Female High School Athletes

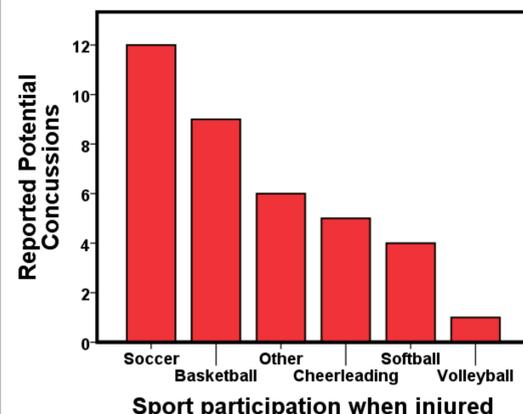
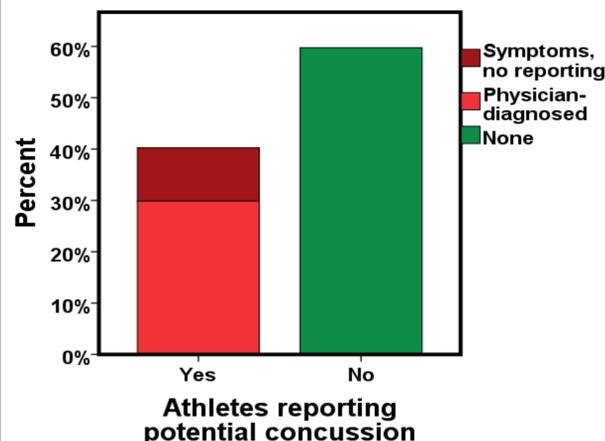


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Background

- Under-reporting of concussions and symptoms continues to be a problem across athletics.
- Subjective symptom reporting by injured athletes is crucial for rapid and precise injury identification.
- Evidence suggests females may sustain concussions at a higher rate than male athletes.^{1,2}
- Little evidence exists examining reporting behaviors after head injury or the extent of concussion knowledge in female high school athletes.
- **Objective:** Examine prevalence of reporting concussions, symptoms, and other factors influencing reporting behavior among female HS athletes.

Results



Athlete symptoms following contact

Symptoms	Responses	(%)
- Headache	51	66%
- Dizziness	32	42%
- Sensitivity to light	20	26%
- Sensitivity to noise	15	20%
- Blurred vision	13	17%
- Nausea	10	13%
- Balance problems	10	13%
- Memory changes	10	13%
- Confusion	6	8%
- Loss of consciousness	2	3%

- 66% of these athletes reported receiving prior concussion education.
- 80% reported post-injury symptoms to training staff.
- 10 athletes stated they did not report symptoms because *“I wanted to keep playing”* *“they (symptoms) didn’t last long”* or *“I didn’t think it was a big deal.”*

Conclusions

- Under-reporting of concussions and concussion-like symptoms across sports occurred in these female athletes.
- Concussion education programs were not uniformly implemented in the participating athletes’ schools.
- Improving athlete knowledge of concussion symptoms may improve reporting rates and behavior.
- Gender-specific education practices also may contribute to improved reporting rates across sports.
- **Future research** should explore gender-specific educational strategies for improved effectiveness and efficacy of symptom reporting in high school sports.

Methods

Participants:

- 77 female high school athletes, all <18 years old.
- Varsity, junior varsity, and freshman athletes included.
- All participated in at least one school-sponsored sport.

Survey:

- Self-report survey adapted from collegiate symptom-based concussion survey.³
- Explored participation, history of diagnosed/suspected concussions, concussion education, medical management of previous injury.
- Survey completed once, regardless if participating in multiple sports

Data Analysis:

- Chi-square and Fisher exact tests were used to compare categorical variables.
- Wilcoxon rank sums tests were used to assess the influence of age on reporting characteristics.

References

1. Dick RW. Is there a gender difference in concussion incidence and outcomes? *Br J Sports Med.* 2009
2. Marar M, McIlvain NM, Fields SK, Comstock RD. Epidemiology of concussions among United States high school athletes in 20 sports. *Am J Sports Med.* 2012
3. LaBotz M, Martin MR, Kimura IF, Hetzler RK, Nichols AW. A comparison of a preparticipation evaluation history form and a symptom-based concussion survey in the identification of previous head injury in collegiate athletes. *Clin J Sport Med.* 2005