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The Effect of Gender and Socioeconomic Factors on Reporting of Concussions among NCAA Student-Athletes

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Introduction
Concussions are traumatic brain injuries that result from “brain shaking” as a result of transmit force to the head. Concussions result in immediate and transient post-traumatic impairment of neural functions which lead to both psychological and physiological symptoms.

As knowledge of the long-term implications of these injuries grows, concussions are becoming an increasing health concern worldwide. One subset, sports-related concussions, are receiving an increasing amount of attention from scientists and health-care practitioners.

More than 3.8 million sport-related concussions occur annually in the United States alone, and some studies suggest that up to 43% of these go unreported and untreated.

Methods
We developed a survey designed to determine the influence of gender and socioeconomic status (SES) factors on the underreporting of concussions among 214 NCAA student-athletes. The survey consisted of questions that measured:

- Gender
- Socioeconomic status
- General knowledge of concussions
- Experience with concussions
- Discrepancies between ideal and actual behavior relating to concussion reporting

Surveys were distributed to Division I, II, and III institutions in each state of the US.

Table 1- Reported Concussions

<table>
<thead>
<tr>
<th>Gender</th>
<th>Sport</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Football</td>
<td>0.14</td>
<td>0.26</td>
</tr>
<tr>
<td>Female</td>
<td>Not Football</td>
<td>0.41</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Results
Data collected from the survey suggests:

- Females are more likely to report a suspected concussion to an athletic trainer or coach than males.
- Socioeconomic status had insignificant effect on concussion reporting behavior among athletes.
- All athletes left many concussions unreported and untreated, indicating a potentially significant health threat to them.

Conclusion
This study provided an important baseline for athlete concussion reporting behavior in the NCAA; however, our study was limited in the diversity of survey participants.

The next step of this research is to obtain more data from a more diverse sample to determine if race or socioeconomic status have any significant influence on concussion reporting behavior.