Factors Influencing Adoption Decisions by High School Sports Programs of a Simple Method to Screen for Sport-Related Concussion: A Pilot Study

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Sports-related concussions (SRC) are a growing concern among the parents of high school students that participate in aggressive contact sports such as football (Fujita, 2013; Landau, 2013). Screening for SRC is important because student athletes with undetected concussions are at risk for more serious injury, particularly since there is evidence that high school age athletes take significantly longer to recover from concussion compared to young adults (Zuckerman, Lee, Odom, Solomon, Forbes, & Sills, 2012). The issue is an important one since approximately 1,100,000 U.S. teens play high school football, with 3 million more playing in organized youth leagues (Landau, 2013).

There are technologies to screen for concussion in students after head impacts but they are often costly. For instance, “Smartcaps” containing digital sensors for measuring G-force impact cost about $150 per player, and other clinical assessment tools can run into the thousands of dollars and may be too expensive for many high school programs and football leagues.

Reaction Time (RT) is an important variable in the assessment of concussion, with slower post head-impact RT indicating a possible concussion. RT is often measured in concussion assessment using costly computers and specialized software. However, Eckner, Kutcher, Broglio, & Richardson (2013) have developed an inexpensive (approximately $5 in materials) method for clinically measuring RT involving the use of a weighted measuring stick that the athlete grasps when it is released by an examiner (RTclin). The spot at which the athlete grasps the stick provides a baseline measurement that can be converted into an RT value. Following head impact RT can be measured on the field and compared with the athlete’s pre-season baseline to screen for concussion. In their study of concussed athletes and controls, Eckner et al. found RTclin to be comparable in sensitivity and specificity to other (more expensive) concussion assessment tools. The purpose of this pilot study is to find out whether high school athletic programs will adopt RTclin and what barriers might exist to adoption.

The authors are developing a 10 minute video introducing the topic of screening for concussion and demonstrating how to build and use the RTclin for screening high school athletes post-head impact. Seven high school athletic departments in the Los Angeles metropolitan area have been sampled and interviews will be scheduled with athletic department personnel, including staff responsible for making decisions about student athletes who have experienced head impact.

The procedure will involve having study participants view the RTclin video and then participate in structure interviews. The structured interviews will address these topics: (1) Perceived effectiveness of the RTclin, (2) barriers to effective use of the RTclin, (3) competitive environment in terms of other products for assessing concussion, (4) effectiveness of the video for promoting the RTclin, (5) participants’ value perceptions of the RTclin, (6) unrecognized product benefits, (7) likelihood of adopting the RTclin, and (8) how the RTclin may be integrated into high school athletic programs.

Structured interview responses will be content analyzed to obtain results regarding opportunities for and barriers to adoption of RTclin in high school athletic programs. Results will also be used to design a future study in which RTclin is introduced to a larger sample of high schools, with follow-up to assess the degree of successful adoption of this method for screening for concussion.

References

