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Accuracy of the "Helmet Halo" Device in Identifying Improper Tackling form in Division III College Football Players

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Student Abstract

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OBJECTIVE

Concussions have become a major concern for coaches, parents, players, and athletic trainers in the sport of football in recent years. The definition of a concussion is a brain injury caused by a blow to the head or a violent shaking of the head and body.[1,2,3] Strategies used to prevent concussions in the sport have included education, improved equipment, rule changes, and training devices.[5] There have been devices put on the market to help decrease improper form when making a tackle in football. In this study one of these devices will be used, called a "Helmet Halo". This device will set off a tone when your head drops when making a tackle based on the angle of your head going into the tackle. This study will look at the accuracy of this instrument in identifying poor form tackling in Division III collegiate football players.

DESIGN and SETTING

This device will be put in the helmet of 10 defensive players on a Division III football team. The number of times that the Helmet Halo beeps will be recorded and the athletes will be told to raise their hand if they were to hear a beep when entering a tackle. This study will be conducted on the football field at Otterbein University.

PARTICIPANTS

The subjects in this study will be Otterbein football players, specifically defensive players at the linebacker and defensive back positions on the first or second-string defense. Athletes will be put through a meeting explaining the parameters of the study. At the end of the meeting the subjects will be asked if they are interested in participating in the study. If the athletes are interested they are asked to sign a consent form. IRB approval was reached. Subjects were excluded from the study if they had a current injury of any kind.

INTERVENTIONS

The purpose of this study is to evaluate the accuracy of this device and determine if it could be used in the sport of football to prevent concussions by correcting tackling form that may put players at increased risk for injury. The device will be worn in players' helmets for two weeks during contact practices.

MAIN OUTCOME MEASURE The main outcome measure in this study is the percentage of tackles where correct feedback was given and the percentage of tackles where incorrect feedback was given, based on the investigators' evaluation of the form tackle on practice film. The criteria used for the evaluation of form tackles are the criteria presented by Heads Up Football.[4]

RESULTS

A total of 166 plays were analyzed during two full-contact practice sessions, including 50 tackles observed between 10 subjects. Of those tackles, 62% received correct feedback, while 38% received incorrect feedback from the helmet halo device. Only 7 out of the 50 tackles (14%) elicited some kind of feedback or "beep".

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CONCLUSION

According to the results, it cannot be said with confidence that the Helmet Halo device is a reliable and accurate tool for identifying poor tackling form. We found that it was quite difficult to actually elicit a beep from the device, requiring the subject to lower their head far below a dangerous level before eliciting a beep. Correct feedback was not always given to the subject, and the device missed some poor tackles. Some limitations to our study were a small sample size, short duration, and the inclusion of subject from only one institution and division of college football. We believe that this device has potential to be useful in correcting poor tackling form, in combination with quality coaching and supervision, which may lower the risk or concussions and other head and neck injuries. More extensive research needs to be done to determine the efficacy of the Helmet Halo device and similar devices.

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