

## **Educational Intervention in Sentinel Injury Identification for Healthcare Students**

**Emily J. Angell, PA-S, Curtis R. Ford, MD**

**Background:** Sentinel injuries are important precursors to more severe child abuse, but on their own are often not clinically significant enough to trigger further workup<sup>1</sup>. Their subtle nature leads to child abuse often going unidentified until more severe injuries occur; at least 30% of children with confirmed abusive head trauma have previous sentinel injuries that were not addressed<sup>2-4</sup>. This occurs even in the setting of clear existing guidelines for suspicious bruising<sup>5-6</sup>.

**Objectives:** This study seeks to identify knowledge gaps in Physician Assistant didactic training regarding sentinel injuries of child abuse and address these knowledge gaps through a targeted intervention. It also aims to evaluate how effective this intervention is in modifying current knowledge of sentinel injuries. Results from this study will help inform future curriculum modifications regarding child abuse.

**Methods:** An initial survey evaluating knowledge and comfort surrounding sentinel injuries was sent out to first- and second-year PA students at Anschutz Medical Campus. Following this, an interventional lecture, consisting of sentinel injury basics, cases, and practice questions was presented to the same population of students. A post-intervention survey was administered with similar cases and questions to the initial survey. Descriptive statistical analysis and hypothesis testing were used to analyze survey results and evaluate the effectiveness of the targeted intervention in improving performance on areas of need. Data was collected via REDCap survey.

**Results:** 35 students participated in the pre-intervention survey, while 17 attended the lecture and completed the post-intervention survey. Pre-intervention results demonstrate that areas of greatest need for students were identifying sentinel injuries and working up sentinel injuries and other signs of child abuse. Students also had existing deficits in self-rated confidence in identifying and reporting these injuries. Students showed adequate existing knowledge in identifying when a bruise was not indicative of a sentinel injury. Post-intervention, students showed a statistically significant improvement in their areas of need- ability to identify a sentinel injury in a case (17.6% vs. 94.11%), correctly choose next steps when presented with a sentinel injury (11.8% vs. 94.11%), and identify when child abuse should be on a differential (25.8% vs. 64.7%). They also improved in self-rated confidence in identifying child abuse (3/10 vs. 7/10) and confidence in reporting child abuse (2.68/10 vs. 7.11/10). All results are significant with 99% confidence.

**Conclusion:** These results demonstrate that while PA students do have knowledge and confidence deficits regarding sentinel injuries, they can be effectively addressed with targeted education. This informs the need for development of a novel curriculum surrounding sentinel injuries for integration into existing PA education. The effectiveness of this curriculum in improving knowledge of sentinel injuries could then be evaluated and extended to other medical education settings such as MD or NP programs. By identifying areas with need for targeted education, future curriculum modifications can address these specific areas, which will better prepare students to effectively evaluate child physical abuse.

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