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Consistency and Variation in School-Level Youth Sports Traumatic Brain Injury Policy Content

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A B S T R A C T

Purpose: The purpose of the study was to examine the consistency and variation in content of high school written traumatic brain injury (TBI) policies in relation to the three key tenets of youth sports TBI laws.
Methods: A content analysis was conducted on written TBI policies retrieved from 71 high schools currently participating in High School Reporting Information Online. Each policy was independently analyzed by two trained coders. The number and percent of the policies reflecting the three key tenets of state youth sports TBI laws were described and compared on policy enforcement (i.e., strictness of language), policy description (i.e., details and definitions of the requirements), and policy implementation steps (i.e., specific steps for implementing the requirements). Direct quotes were identified to support quantitative findings.
Results: All 71 high school TBI policies contained at least two of the three main TBI law tenets, where 98.6% (n = 70) included the return to play tenet, 83.1% (n = 59) included the removal from play tenet, and 59.2% (n = 42) specified the distribution of TBI information sheets to student-athletes and their parents. Nearly half of the policies (49.3%, n = 35) required parents' signature while only 39.4% (n = 28) required students' signature on the TBI information sheet. The language exhibited wide variance across the 71 TBI policies regarding policy enforcement, policy description, and policy implementation specifications.
Conclusions: All 71 TBI policies covered at least two of the three youth sports TBI law tenets, but with considerable variation. Future research should assess variations by schools within the same state and their impact on TBI rates in school athletics.

IMPLICATIONS AND CONTRIBUTION

This study contributes to scientific literature on the profile of sports-related traumatic brain injury (TBI) school policies and provides insight into the translation of state-level TBI laws to school-level policy. TBI policies with stricter enforcement language and clear-cut implementation steps will help ensure successful implementation of the state TBI laws at high schools.

Sports-related traumatic brain injuries (TBIs) affect approximately 300,000 high school athletes each year in the United States, second only to car crashes among individuals aged 15–24 years [1]. In 2009, TBI experts and government officials in Washington State collaborated to develop a youth sports TBI law in response to the long-term health consequences incurred by a

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middle school football player, Zackery Lystedt, who suffered a catastrophic brain injury during a football game after returning to play following an initial TBI that was not properly diagnosed [2]. By 2014, all 50 states and the District of Columbia (DC) had enacted similar youth sports TBI laws [3]. The laws generally include three tenets of Washington's Lystedt Law: (1) mandatory removal from play following an actual or suspected TBI, (2) permission to return to play (RTP) approved by a licensed health professional, and (3) education regarding TBI signs and symptoms [4,5]. However, the Lystedt law was not modeled on a particular scientific framework [5], and therefore, the three tenets do not necessarily conform to or integrate broad scientific consensus about youth TBI prevention, management, or best practices [6–8].

Following enactment of such laws, schools engaged in policy implementation efforts. Several states delegated the authority to create and distribute state TBI education requirements to either a state agency or local school board [5–9]. However, prior studies examining the content, structure, and implementation of TBI laws were mainly focused on implementation efforts at the state level [3,5,10–12]. The results of those studies showed that variations exist in the content and implementation of TBI laws across states, which could mitigate the effectiveness of the laws [10,12,13]. No prior study has examined the content and legal consistency of school TBI policies, which could directly affect how schools interpret, implement, and exercise their state TBI laws. The aims of this study were to (1) analyze the content of written high school TBI policies in relation to the three key tenets of TBI laws and (2) evaluate three dimensions of written school policy language specificity including policy enforcement, policy description, and policy implementation steps. Results of this study provide insight into how to improve TBI policies to ensure more efficacious implementation of state TBI laws at the school level.

Methods

Study participants and data

Electronic copies of 71 concussion policies (one per high school) were collected from certified athletic trainers (ATs) or athletic directors from schools that participated in High School Reporting Information Online (RIO). High School RIO is a prospective, longitudinal Internet-based surveillance system established in 2005 that collects sports-related injury data, including TBI data, among a nationally representative sample of high schools [14]. An invitation was first sent via the listserv to 240 RIO schools active in the 2014–2015 academic year and again to 203 RIO schools active in the 2015–2016 academic year, with many schools overlapping between years. The first 71 respondents (the ATs or athletic director), including 39 from the first round of recruitment and 32 from the second round, who agreed to participate in the study and completed a phone interview as part of the TBI law evaluation study were asked to provide electronic copies of their school's TBI policies. This study was approved by the institutional review board of the authors' institutions.

Instrument and measurement

A high school TBI policy content analysis codebook was developed based on the Public Health Law Research (Youth Sports Traumatic Brain Injury Laws Codebook [15], existing literature on TBI laws [5,9,11,16], and methodology for policy content analysis [17,18]). Public health law experts and TBI researchers examined the codebook over six iterations until finalized. To establish reliability in coding, two authors independently coded the same five policies using the initial codebook. The research team reviewed the coded policies, discussed discrepancies, and revised the initial codebook accordingly after consensus was reached. Next, the two coders independently coded an additional five policies using the updated codebook and discussed discrepancies to reach consensus. The review and revision process was repeated until consensus from all authors was achieved.

The final codebook included 15 dichotomous variables organized according to the three key tenets of youth sports TBI laws, with two variables on the "removal from play" tenet, three variables on the "return to play" tenet, six variables on the "concussion education" tenet, and four variables related to additional requirements, including liability specifications, a five-step RTP protocol, standardized testing, or return-to-learn requirements. For variables receiving "yes" responses, additional coding was used across the three policy dimensions: (1) policy enforcement, which measured the strength and specificity of written language regarding policy enforcement; (2) policy description, which measured details and descriptions of the policy content and requirement; and (3) policy implementation steps, which measured "who," "what," "when," "where," and "how" the policy is implemented. Detailed descriptions of coding scheme are listed in Table 1.

Data coding procedure

Two authors independently analyzed the content of each of the 71 high school TBI policies. The written language corresponding to each variable was coded into numeric scores for the three policy dimensions (e.g., policy enforcement, policy description, and policy implementation steps) based on the descriptions listed in Table 1. Common and/or distinctive policy provisions for each of the 15 dichotomous variables were identified and recorded throughout the examinations for further analysis of similarities or differences among the written policies. Direct quote(s) that support the three policy dimensions of each study variable were selected and recorded. The research team met weekly to discuss the coding, and consensus was reached for any discrepancies between the two coders. The coding process and consensus continued for all 71 policies.

Data analysis

Descriptive analyses were conducted to describe the number and percentage of the 71 high schools whose written TBI policies included the three key tenets of youth sports TBI laws (Table 2). All 71 TBI policies were analyzed by the three policy dimensions (e.g., policy enforcement, policy description, and policy implementation steps; Table 3), and in relation to the three tenets of the TBI laws including similarity or differences in the content across the high schools. In addition, a sample of direct quotes supporting the three dimensions of written policies were presented in Table 4.