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Change in Concussion Knowledge and Attitudes from Pre to Post Season in Sports

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OBJECTIVE

Describe the change in high school athletes' knowledge and attitudes of concussions across time.

DESIGN AND SETTING

Prospective cohort study was used to describe concussion knowledge and attitudes at one public high school located in Central Ohio.

PARTICIPANTS

A convenience sample (n=21) of high school athletes, ages 14-19, were recruited from a local high school. Seventeen were female, and three were male; the average reported age was 14.5. All participants were listed on the active roster of one of the following high school sponsored teams: soccer, volleyball, football, basketball, lacrosse, and baseball.

INTERVENTION

Rosenbaum Concussion Knowledge and Attitude Survey – Student Version (RoCKAS-ST) was used to measure knowledge through the Concussion Knowledge Index (CKI) and attitudes through the Concussions Attitude Index (CAI). CKI (range 0-25) and CAI (range 10-50) was assessed (1) prior to the respective sport season and (2) at the conclusion of the respective sport season.

MAIN OUTCOME MEASUREMENT

Cronbach's α was reported to demonstrate the internal consistency of the RoCKAS-ST. Descriptive statistics were reported for the dependent variables (knowledge and attitude) across time (pre-season and post-season). A t-test was conducted for each

dependent variable by time. Alpha level was set at $p < 0.05$ for all analyses.

RESULTS

The internal consistency of the RoCKAS-ST Concussion Knowledge Index (CKI) could not be measured due to the lack of variability across scores. However, a comparison of participant's answers across three clusters (low, moderate and high difficulty items) was similar to previous research, indicating that the CKI may produce similar scores in adults and adolescents. The internal consistency of the RoCKAS-ST CAI (Cronbach's $\alpha=0.14$) failed to match measures of reliability reported in previous studies of adults (Cronbach's $\alpha=0.76$). Preseason ($\bar{x}=21.00\pm 2.14$) and postseason ($\bar{x}=20.94\pm 1.21$) CKI scores were not statistically different ($p=0.92$). Preseason ($\bar{x}=47.11\pm 3.58$) to postseason ($\bar{x}=48.89\pm 2.30$) CAI scores were statistically significant ($t=2.20$; $p=0.04$).

CONCLUSION

The inability to reproduce indicators of reliability similar to previous investigations in adults casts considerable doubt as to the appropriate use of the RoCKAS-ST in adolescents. Based upon the results in this study, it appears that adolescents' knowledge of concussion was accurate in pre-season and remained unchanged at post-season. However, attitude scores improved across time, indicating that values and beliefs of concussions may change in adolescents over the course of a sports season. Due to the lack of established instrument reliability in adolescents, caution should be taken when generalizing this study's results.

KEY WORDS: RoCKAS-ST, Concussion, Concussion Knowledge Score, Concussion Attitude Score