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18 Nightmares Independently Predict Neurobehavioral Symptoms in Adults with mTBI

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Objective: To investigate the informative value of nightmares on neurobehavioral functioning in individuals with mild traumatic brain injury (mTBI) beyond general sleep disturbance.
Participants and Methods: A sample of 146 adults with mTBI (mean age = 45.1±16.0), recruited from a specialized concussion treatment center, underwent an assessment of neurobehavioral functioning using the Behavioral Assessment Screening Tool (BAST), self-reported habitual sleep disturbance and quality (via the Pittsburgh Sleep Quality Index; PSQI), and reported nightmare frequency in the past two weeks.
Results: Nightmare frequency was the strongest predictor of negative affect (β = .362, p <.001), anxiety (β = .332, p <.001), and impulsivity (β = .270, p <.001) after controlling for sex and age. Sleep disturbance accounted for the greatest variance in depression (β = .493, p <.001), burden from concussion (β = .477, p <.001), and fatigue (β = .449, p <.001) after controlling for sex and age.
Conclusions: Nightmares independently associate with neurobehavioral symptoms and likely have differential etiology from reported sleep disturbance. Nightmare frequency was more strongly related to positive neurobehavioral symptoms (i.e., added factors that impact functioning, e.g., anxiety), while general sleep disturbance was associated with negative neurobehavioral symptoms (i.e., factors taken away that impact functioning, e.g., lack of energy). Our findings suggest that neuropsychological evaluations of individuals with mTBI should assess for sleep disturbance and nightmare frequency as risk factors for neurobehavioral barriers to functioning.

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19 Consistency of self-reported sport-related concussion history

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Objective: An accurate accounting of prior sport-related concussion (SRC) is critical to optimizing the clinical care of athletes with SRC. Yet, obtaining such a history via medical records or lifetime monitoring is often not feasible necessitating the use of self-report histories. The primary objective of the current project is to determine the degree to which athletes consistently report their SRC history on serial assessments throughout their collegiate athletic career.
Participants and Methods: Data were obtained from the NCAA-DoD CARE Consortium and included 1621 athletes (914 male) from a single Division 1 university who participated in athletics during the 2014-2017 academic years. From this initial cohort, 752 athletes completed a second-year assessment and 332 completed a third-year assessment. Yearly assessments included a brief self-report survey that queried SRC history of the previous year. Consistency of self-reported SRC history was defined as reporting the same number of SRC on subsequent yearly

evaluation as had been reported the previous year.

For every year of participation, the number of SRC reported on the baseline exam (Reported) and the number of SRC recorded by athletes and medical staff during the ensuing season (Recorded) were tabulated. In a subsequent year, the expected number of SRC (Expected) was computed as the sum of Reported and Recorded. For participation years in which Expected could be computed, the reporting deviation (RepDev) gives the difference between the number of SRCs which were expected to be reported at a baseline exam based on previous participation year data and the number of SRCs which was actually reported by the athlete or medical record during the baseline exam. The reporting deviation was computed only for those SRC that occurred while the participant was enrolled in the current study (RepDevSO). One-way intraclass correlations (ICC) were computed between the expected and reported numbers of SRC.

Results: 341 athletes had a history of at least one SRC and 206 of those (60.4%) had a RepDev of 0. The overall ICC for RepDev was 0.761 (95% CI 0.73-0.79). The presence of depression (ICC 0.87, 95% CI 0.79-0.92) and loss of consciousness (ICC 0.80, 95% CI 0.72-0.86) were associated with higher ICCs compared to athletes without these variables. Female athletes demonstrated higher self-report consistency (ICC 0.82, 95% CI 0.79-0.85) compared to male athletes (ICC 0.72, 95% CI 0.68-0.76). Differences in the classification of RepDev according to sex and sport were found to be significant ($\chi2=77.6$, df=56, p=0.03). The sports with the highest consistency were Women's Tennis, Men's Diving, and Men's Tennis with 100% consistency between academic years. Sports with the lowest consistency were Women's Gymnastics (69%), Men's Lacrosse (70%), and Football (72%). 96 athletes had at least one study-only SRC in the previous year and 69 of those (71.9%) had a RepDevSO of 0 (ICC 0.673, 95% CI 0.64-0.71).

Conclusions: Approximately 40% of athletes do not consistently report their SRC history, potentially further complicating the clinical management of SRC. These findings encourage clinicians to be aware of factors which could influence the reliability of self-reported SRC history.

Categories: Concussion/Mild TBI (Adult)

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20 Examining the Recovery Course of Pediatric Concussion Patients with Protracted Recovery Referred to a Specialty Concussion Clinic

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Objective: The purpose of this study was to explore overall recovery time and post-concussive symptoms (PCSS) of pediatric concussion patients who were referred to a specialty concussion clinic after enduring a protracted recovery (≥28 days). This included patients who self-deferred care or received management from another provider until recovery became complicated. It was hypothesized that protracted recovery patients, who initiated care within a specialty concussion clinic, would have similar recovery outcomes as typical acute injury concussion patients (i.e., within 3 weeks).

Participants and Methods: Retrospective data were gathered from electronic medical records of concussion patients aged 6-19 years. Demographic data were examined based on age, gender, race, concussion history, and comorbid psychiatric diagnosis. Concussion injury data included days from injury to initial clinic visit, total visits, PCSS scores, days from injury to recovery, and days from initiating care with a specialty clinic to recovery. All participants were provided standard return-to-learn and return-to-play protocols, aerobic exercise recommendations, behavioral health recommendations, personalized vestibular/ocular motor rehabilitation exercises, and psychoeducation on the expected recovery trajectory of concussion.