Relationships between quality of life and concussion testing at baseline

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**Context:** Individualized baseline concussion testing is essential for concussion evaluation and recovery in athletics. There is evidence suggesting that a number of factors can influence these scores, which include gender, sleep, and pre-existing medical conditions such as ADHD. However, it is not clear if there is any relationship between an individual’s subjective ratings of quality of life and concussion baseline test scores. **Objective:** To examine the relationship between self-reported quality of life and concussion baseline test scores. **Design:** Cross-sectional. **Setting:** Laboratory. **Patients or other participants:** 80 NCAA Division 1 athletes (Age 19.4±1.2, height 186.9±6.8, weight 105±18.5). **Interventions:** Each participant completed the Brief Symptom Inventory 18 (BSI-18), the Hospital Anxiety and Depression Scale (HADS), the Satisfaction with Life Scale (SWLS), and a fatigue rating to rate their self-perceived quality of life. All subsequently performed a physical testing battery consisting of the ImPACT test, Standardized Assessment of Concussion (SAC), King Devick (KD) test, and ruler drop test. **Main Outcome Measures:** Scores on each of the self-reporting items and physical test measures were analyzed for correlation using Spearman’s ρ. An independent t-test was performed to note any differences between subjects with and without history of concussion. **Results:** Weak to moderate correlations were found between all variables. Of the physical tests, the KD test had a significant weak correlation with the SWLS (-.235, p<.05). The cognitive efficiency index (CEI) calculated by the ImPACT test had significant weak correlations with the depression and anxiety subscores of the HADS (-.247, -.243, respectively, p<.05). No significant differences were found between subjects with and without a history of concussion on any of the measures. **Conclusions:** Overall, self-reported quality of life measures do not seem to be related to outcomes on physical concussion baseline testing overall in this study cohort. There were only two significant relationships found, both of which were weak. One of the two relationships found was between the CEI and the HADS. The CEI is calculated based on speed and accuracy from the responses determined by the ImPACT computerized test, which is a test that takes about 20-30 minutes to complete. An individual who scores high on the HADS, particularly on questions relating to focus, may perform worse on this test, resulting in a lower CEI score. Other tests included in the battery only last between two and five minutes, so an individual would not have to focus as long to complete the tests, which may help them perform better. However, it is important to note that this was found to be a weak relationship; in general, there were no true relationships between the scores of self-reported inventories and baseline physical test measures. **Word Count:** 437