

Minimal data connects sex and predictors of increased concussion symptoms. Therefore, this cross-sectional observational study examined the association between the concussion symptom severity and number of concussions sustained between males and females. Overall, 80 young adults aged 18-30 with a concussion history in the past five years completed this study and were used in analyses. Separate univariable regression models for males and females estimated the association between concussion symptom severity and number of concussion symptoms worse than before injury with suspected predictors. Statistically significant predictors from each sex model were used to create their respective multivariable linear regression models. In males, higher concussion symptom severity and number of concussion symptoms worse than before injury were significantly associated with more previous concussions (severity: $\beta=1.36$, p -value=0.38; worse symptoms: $\beta=0.76$, p -value=0.30) and higher age (severity: $\beta=2.07$, p -value=0.08; worse symptoms: $\beta=0.65$, p -value=0.22). In females, higher concussion symptom severity was significantly associated with more previous concussions ($\beta=1.66$, p -value=0.13) and more recent concussions ($\beta=0.14$, p -value=0.15), while a higher number of concussion symptoms worse than before injury was significantly associated with mental health history ($\beta=2.05$, p -value=0.10) and more concussions ($\beta=0.50$, p -value=0.25). Multivariable regression models mirrored results from the male and female univariable models. Findings suggest that predictive factors may differ between sex, with an increased concussion symptom presence and severity being associated with higher age in males and mental health history in females. Future research could investigate potential causation among these predictive factors in a larger, more inclusive study.