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### Mental Health is not Affected by Multiple Concussions in Young Adults

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A history of multiple concussions is associated with an increased risk of anxiety and depression. As the number of concussions increases the more severe the long-term effects are including: mental health issues, memory, and a decline in cognitive function. Two common populations experiencing these effects are professional football players and military members. As the long-term effects of multiple concussions are known, research shows young adults with multiple concussions to have similar ImpACT scores as those with no concussion. Considering the mental health long-term risks associated with multiple concussions, studying mental health in young adults with multiple concussions is necessary. **PURPOSE:** The purpose of this study was to determine the effects of multiple concussions on mental health. **METHODS:** Each of the 41 college aged people (23 female and 18 male) participated in this study. They were divided into three groups based on diagnosed concussion history: no concussions (n=16, NONE); 1-2 concussions (n=12, FEW); and greater than two concussions (n=13, MANY). All participants completed the Hospital Anxiety and Depression Scale (HADS) and a Positive and Negative Affect Scale (PANAS). A One-way ANOVA was used to determine group differences. **RESULTS:** Mean scores ( $\pm$  standard deviation) for each test for each group are as follows: NONE- Anxiety 7.50 (4.3), Depression 4.69 (4.2), Positive Affect 30.56 (7.1), Negative Affect 17.25 (6.7); FEW- Anxiety 5.17 (3.1), Depression 3.75 (3.5), Positive Affect 30.17 (6.6), Negative Affect 15.33 (3.7); MANY- Anxiety 7.46 (6.0), Depression 4.85 (3.2), Positive Affect 29.69 (9.8), Negative Affect 16.08 (8.1). No significant differences between the three groups were found for any measure (all  $F \leq 1.062$ , all  $p > 0.355$ ). Of the 41 participants, 13 reported being on psychotropic medications (NONE: 4, FEW: 5, MANY: 4). There were no differences in medication by concussion group ( $\chi^2=0.920$ ,  $p=0.631$ ). **CONCLUSION:** Mental health anxiety, depression, positive and negative affect scores are not affected by one or multiple concussions in the college age student population.