



Mid Atlantic Regional Chapter of the American College of Sports Medicine

Annual Scientific Meeting, November 1st – 2nd, 2019
Conference Proceedings

International Journal of Exercise Science, Volume 9, Issue 8



Age of First Exposure Does Not Predict Quality of Life in Adult Rugby Players

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Exposure to repetitive head impacts (RHI) at a young age may negatively affect neurodevelopment and lead to increased behavioral and mood symptoms later in life. When assessed by age of first exposure (AFE), results of AFE on cognitive and psychological outcomes in predominantly male cohorts has yielded mixed results. As such, expansion to other cohorts to investigate the effect of sex on AFE and neurophysiological outcomes is needed. Rugby is a unique cohort as it is typically started in college and continued through adulthood. In addition, it is the only collision sport in which men and women play by the same rules. **PURPOSE:** To investigate the association of AFE and Quality of Life (QoL) measurements in adult rugby players by sex. **METHODS:** An online questionnaire was completed by adult rugby players. Participants completed the following QoL measures: Brief-Symptoms Inventory 18 (BSI-18: sub scores include Somatization, Depression, Anxiety, and Global Severity Index (GSI)), Short Form 12 (SF-12: sub scores Physical (PCS) and Mental Component Score (MCS)), and Satisfaction with Life Survey (SWLS). A generalized linear model was used to examine the association between AFE and all QoL outcome measures; predictors in the models included AFE (continuous), age (years), concussion history (yes/no), and sex (M/F). **RESULTS:** 1,037 (age: 31.6 ± 11.3 years, 59.0% male) participated in this study. AFE was not a significant predictor for all outcomes ($p = 0.160-0.971$). Sex was a significant predictor for BSI-18 (Somatization), whereby males reported 16.7% lower symptoms than females ($p=0.021$; 2.11 ± 2.83 vs. 2.67 ± 3.19 respectively) and SF-12 (MCS), whereby males had 3.67 points higher score (i.e., better) than females ($p<0.001$; 48.09 ± 10.93 vs. 43.36 ± 11.64 respectively). **CONCLUSION:** There was no association between earlier AFE and worse QoL in adult rugby players suggesting that earlier exposure to RHI via collision sports was not associated with poorer QoL outcomes. These results suggest that, at least in young adults, participation in collision sports with RHI are not associated with lower QoL, potentially due to regular physical activity, however, the neurological health in later life remains to be explored. Supported by the University of Delaware's Unidel Distinguished Graduate Scholars Fellowship.