



17th Annual Brain Injury Conference

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Poster #: 1

Abstract Title: Investigating the effect of psychological distress and objective cognitive functioning on subjective cognitive decline in older adults with a single remote mild traumatic brain injury: Findings from the Canadian Longitudinal Study on Aging

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ABSTRACT:

Abstract Theme: Mild TBI / Concussion

Topic(s) of Interest: Innovation Profession Specific, Clinical Research

Purpose of Project: Older adults with remote mild traumatic brain injury (mTBI) may be vulnerable to subjective cognitive decline (SCD). SCD can be the first symptomatic expression of neurodegeneration and is heightened by emotional distress. To inform prognosis and treatment, we studied how SCD relates to neurocognitive functioning and the effect of psychological distress on SCD in older adults with remote mTBI.

Methods, Procedure, Results/Outcome, Conclusion:

We leveraged a nationally-representative sample of older adults with a single remote history of mTBI from the Canadian Longitudinal Study of Aging, a longitudinal research platform investigating those who completed baseline and 3-year follow-up assessments, sustained a single mTBI > 12 months prior to baseline assessment, and denied any neurodegenerative disease or medical condition that could impact cognition (e.g., dementia, Parkinson's disease, stroke). The no head injury control group (n=20107, Mage=62.95) met the above criteria except denied ever sustaining an mTBI. SCD was measured by "Do you feel like your memory is becoming worse?" (yes/no) at follow-up. Change in global objective cognitive performance was defined as follow-up minus baseline composite performance on memory and executive functioning tests. A Psychological Distress composite measure at follow-up was created by averaging standardized scores from the Center for Epidemiologic Studies Short Depression Scale and the Kessler Psychological Distress Scale, 59.13% of the mTBI group and 56.78% of the control group endorsed SCD. SCD at follow-up was weakly related with global objective cognition at follow-up, after controlling for baseline cognitive performance ($\beta = -0.02$, SE = 0.01, $t(12496) = -2.09$, $p = .037$). Notably, higher levels of psychological distress at follow-up significantly predicted SCD ($\beta = 0.42$, SE = 0.02, $z = 17.40$, $p < .001$; OR = 1.52; CI: 0.37-0.47), whereas change in global cognitive performance across time did not ($\beta = 0.06$, SE = 0.03, $z = 1.82$, $p = .069$). The relationship between psychological distress and SCD was similar in both groups ($\beta = 0.13$, SE = 0.10, $z = 1.36$, $p = .174$). Our results highlight the weak relationship between subjective and objective cognitive performance. This study is the first to extend the relationship between psychological distress and SCD in younger adults, athlete, and veteran mTBI groups to older adults with a single remote history of mTBI. We found that self-perceived memory problems were not captured by change in cognitive test performance, but were rather associated with concurrent depressive and anxious symptomatology. These results underscore the value of implementing psychological interventions and rehabilitative tools that target emotional distress in healthy aging and post-mTBI to improve quality of life and mitigate subsequent cognitive decline.