Introduction

This newsletter provides a brief summary of some of the latest research and publications that may be of interest to practitioners in the field of addiction and mental health. Each newsletter will cover one of the themes of the Alberta Addiction and Mental Health Research Partnership Program and provides structured accounts of research on a given topic, based on a limited search of the literature for recent publications. We do not thoroughly assess the quality of the research identified so this publication acts as a signpost for further reading and assessment, rather than as a definitive account of what should be included in clinical practice.

This month’s edition focuses on Brain Injuries.

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Return-to-work in patients with acquired brain injury and psychiatric disorders as a comorbidity: A systematic review

Study Design: Systematic review

Focus of the Study: Employment is a crucial component in an individual’s daily life, affecting social functioning, mental health, and overall health and well-being. Only a minority of individuals with acquired
Individuals with ABI endure physical and cognitive debilitations, and can experience immense psychological distress that can contribute to the development of psychiatric disorders. Understanding the impact of these psychiatric disorders could improve recovery efforts and re-integration in work. This study evaluates the association between psychiatric disorders as a comorbidity and return-to-work (RTW) in patients with non-progressive ABI.

**Key Findings:**
- Individuals with a comorbid ABI and psychiatric disorder (i.e., depression, anxiety, and post-traumatic stress disorder) were less likely to return to work.
- Increased severity of the psychiatric disorder was associated with lower RTW rates.
- Patients with a history of psychiatric disorders were at an increased risk of developing new psychiatric disorders and lower RTW rates after ABI.

**Implications for Practice:** Greater focus on diagnosing and treating psychiatric disorders in patients with ABI may improve recovery efforts and re-integration to work.


**Associations between executive functioning, coping, and psychosocial functioning after acquired brain injury**

**Study Design:** Cross-sectional study

**Focus of the Study:** Individuals with acquired brain injury (ABI) often use coping strategies to adjust to long-lasting changes to physical and cognitive abilities and behavioral and emotional functioning. These individuals tend to use passive coping styles (i.e., emotion-focused) more often than problem-focused coping styles, even though passive coping styles have been associated with poorer outcomes in mood and quality of life. Specifically, ABI patients with executive dysfunction use problem-focused coping styles less often than patients with better executive functioning. Previous research on the relationship between coping and executive function after ABI has targeted individuals whose primary symptoms were motor or cognitive; few studies have examined this topic in neuropsychiatric patients. This study looks at the association between coping, executive functioning, depressive symptoms, and quality of life in patients with neuropsychiatric symptoms after ABI.

**Key Findings:**
- Individuals with neuropsychiatric symptoms after ABI reported using passive coping styles more often, and problem-focused coping style less often, than the general population.
- Older age was associated with low levels of self-reported executive dysfunction, depression, and passive coping styles.
- Higher education was associated with high levels of mental flexibility and problem-focused coping styles.
- A longer time since injury was associated with increased use of problem-focused coping styles.
- Self-reported executive dysfunction was associated with increased use of passive coping styles.
- The use of problem-focused coping styles was related to improved quality of life for patients who reported fewer difficulties with executive functioning (i.e., mental flexibility and response inhibition), and a poorer quality of life for those who reported greater difficulties with executive functioning.

**Implications for Practice:** Identifying ABI patients who use maladaptive coping styles and tailoring
treatment to encourage the use of more helpful coping strategies may improve recovery, decrease depressive symptoms, and increase quality of life. In addition, patients with strong executive abilities may benefit more from problem-focused coping styles than patients with executive dysfunction. According to the authors, patients with executive dysfunction could benefit from different coping styles like seeking social support or accepting problems.

The association between traumatic brain injury and ADHD in a Canadian adult sample


Study Design: Cross-sectional study

Focus of the Study: Rates of traumatic brain injury (TBI) are rising in many developed countries. While team sports such as hockey and football appear to be the main cause of TBI in youth, falls and motor vehicle collisions are the main source of TBI in adults. Recent research has suggested that there is a link between attention deficit/hyperactive disorder (ADHD) and childhood TBI. Studies based on adolescent samples have suggested that ADHD can be both a risk factor for TBI, as well as, a consequence of having experienced a TBI. However, studies that have examined the link between ADHD and TBI in adults are scarce. This study examines the association between lifetime TBI and ADHD in Canadian adults. Data was collected from the 2011 and 2012 cycles of the Centre for Addiction and Mental Health survey, the CAMH Monitor.

Key Findings:
» Overall, 3.4% of the respondents screened positive for ADHD, 2.5% reported a history of ADHD, and 17.1% reported a history of TBI.
» Men were more likely to report having a history of TBI than women.
» Of those with a lifetime history of TBI, 6.6% screened positive on the ADHD screener, and 5.9% reported a lifetime ADHD diagnosis.
» When accounting for differences in age, sex and level of education, adults with TBI were still two times more likely to screen positively for ADHD or have an ADHD diagnosis, compared to adults with no history of TBI.
» Age was the only factor to impact rates of self-reported ADHD. Among adults with TBI, those between the ages of 18 and 29, and those over 50, were 3.6 and 5.8 times more likely to report ADHD.

Implications for Practice: The association between lifetime TBI and ADHD is not limited to adolescents; it is also observed in the adult population. When screening and assessing for ADHD in the adult population, it may be useful to consider TBI history. Further research is needed to determine the causal relationship between TBI and ADHD. More research is also needed to determine whether there are clinical subgroups of individuals with distinct patterns of symptoms; this information could then be used to develop more effective treatments.

Trajectories of life satisfaction after traumatic brain injury: Influence of life roles, age, cognitive disability, and depressive symptoms


Study Design: Longitudinal prospective cohort study
Focus of the Study: Life satisfaction is associated with multiple factors, including age, income, race, ability to drive, disability, employment and social participation. Research has shown that people who suffer moderate to severe traumatic brain injuries (TBI) often report low levels of life satisfaction after their injury. Life satisfaction is also based upon the importance of different factors to a specific individual; different roles may contribute differentially to overall satisfaction with one’s life. Little research has been conducted on how life roles change after TBI.

This study aims to 1) identify distinct life satisfaction trajectories at 1-, 2- and 5-years after a moderate to severe TBI, 2) identify factors that predict life satisfaction levels, and 3) describe differences in different life satisfaction trajectory groups with respect to age, depressive symptoms, disability and participation in specific life roles.

Key Findings:
» Four main trajectory groups were identified:
  • Stable satisfaction (46.2%) – high satisfaction levels across all three time points
  • Initial dissatisfaction improving (20.7%) – initially dissatisfied, then improved over time
  • Initial satisfaction declining (17.9%) – initially satisfied, then declined over time
  • Stable dissatisfaction (15.2%) – dissatisfied across all three time points

» Participants in the stable satisfaction trajectory group were more likely to be aged 16 to 30, were more likely to participate in work, leisure and religious activities, and had the lowest cognitive impairment and depressive symptoms across all time points. They were also more likely to be over the age of 60 at Year 1, and have lower levels of cognitive disability.

» Participants in the initial dissatisfaction improving trajectory groups were more likely to be over the age of 60 at Year 1.

» Lower levels of cognitive disability were associated with initial satisfaction declining trajectory groups.

» Participants in the stable dissatisfaction trajectory group were more likely to be aged 31 to 59, were least likely to participate in work, leisure and religious activities, and reported the greatest cognitive disability and depressive symptoms across all time points.

» Higher rates of depression were associated with membership in all dissatisfaction trajectory groups (i.e., stable dissatisfaction, initial satisfaction declining, initial dissatisfaction improving).

Implications for Practice: Awareness of factors that may increase or decrease risk of developing depression in patients with moderate to severe traumatic brain injury may aid in providing tailored treatment or interventions.

Link to abstract: http://www.ncbi.nlm.nih.gov/pubmed/26618215

Psychiatric disorders in children and adolescents 24 months after mild traumatic brain injury

Study Design: Cohort study

Focus of the Study: Past studies have found a connection between children with mild to moderate traumatic brain injury (mTBI) and the existence of psychiatric disorders. Studies have found that the typical predictors of novel (new-onset) psychiatric disorders (NPD) in the first year post-injury are within the broad categories of 1) injury variables (e.g. injury severity, lesions), 2) individual characteristics prior to injury (e.g. adaptive function prior to injury), and 3) family characteristics prior to injury (e.g. family function, socioeconomic status). This study investigated the rate and characteristics of NPD in children.
two years after an mTBI. Eighty-seven children were recruited during their initial hospitalization to participate in the study; 54 were reassessed 24 months post-injury.

**Key Findings:**
» Mild traumatic brain injury is associated with NPD presenting in the second post-injury year.
» 17 of the 54 children (31.5%) who returned for the 24 month assessment had developed an NPD. Seven of these children developed an NPD during the second year post-injury and 10 had an NPD present at an earlier assessment.
» The NPDs varied and included ADHD, personality change due to TBI, anxiety disorders, depressive disorders, and disruptive behavior disorders.
» Development of an NPD was associated with frontal lobe white matter lesions.
» NPDs were also associated with estimated pre-injury reading ability and adaptive function, and concurrent post-injury deficits in reading, processing speed and adaptive function.
» NPDs were not associated with socio-economic status, psychosocial adversity, family psychiatric history, or family functioning.

**Implications for Practice:** Observation and screening for NPD in children who have suffered an mTBI may be considered in the 24 months following injury. Longer-term monitoring is suggested for those with evidence of frontal white matter injury, with low pre-injury neurocognitive or adaptive function, or who show a decline in academic function during recovery.


**The association between traumatic brain injury and suicide: Are kids at risk?**

**Study Design:** Cohort study

**Focus of the Study:** Traumatic brain injury (TBI) in late adolescence and adulthood is known to be associated with a higher risk of suicide; however, the risk of suicide after a childhood TBI has not been studied. 135,703 children (age 0-<12) and adolescents (12-17) in 1987 were followed until 2008. Of this group, 21,047 individuals (15.5%) sustained a TBI. This study investigated the association between TBI and risk of suicide death from childhood to adulthood. It also examined whether gender, frequency and severity of the injury affected risk of suicide.

**Key Findings:**
» Compared to individuals who did not sustain a TBI, children, adolescents and adults who experienced a TBI had a higher risk of suicide later in life. The level of suicide risk appeared to increase with age at TBI with those who sustained a TBI in adulthood having the highest risk of suicide later in life.
» Individuals with a history of mental disorders diagnosed before their first TBI had more than triple the risk of suicide than those without a prior history of mental illness.
» The median time between the first TBI and suicide was 7.39 years. For multiple TBIs, the median time between the last TBI and suicide was 7.01 years.
» The risk of suicide in males who sustained a TBI was at least four times greater than the risk in females.
» Those with a more severe brain injury had a higher risk of suicide than those with a less severe brain injury.
» Multiple TBIs increased the risk of suicide by 23% for children and 41-61% for adolescents and adults.

**Implications for Practice:** Individuals who have sustained a TBI have an elevated risk of suicide.
whether it occurred during childhood, adolescence, or adulthood. Suicide prevention strategies may consider targeted approaches for children, adolescents, and adults that have sustained a TBI. This could include periodic screening for mental health issues as part of comprehensive treatment approaches.

Link to abstract: http://www.ncbi.nlm.nih.gov/pubmed/26121988

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