

Symposium: Modifiers of cognitive outcome: Somatic health, cognitive reserve and emotional regulation

Organized by : Jens Egeland (the Norwegian Neuropsychological Society)

Chair: Jens Egeland (the Norwegian Neuropsychological Society)

The cognitive impairment resulting from the same insult or disease process vary between subjects. In this symposium we look at some modifiers of outcome.

Presentation 1:

Title: The role of cognitive reserve on outcome after mild TBI

Presented by: Jonas Stenberg, Post Doc, Norwegian University of Science and Technology, Trondheim, Norway

Abstract: Cognitive reserve, commonly estimated by intelligence, has been shown to postpone the clinical expression of neurodegenerative diseases. However, it has been less studied in TBI, and especially mild TBI. In this paper, we investigated whether cognitive reserve moderated differences in cognitive test performance between patients with mild TBI (n=160), trauma controls (n=71), and community controls (n=79). Cognitive test performance was measured with several well-established tests at 2 weeks and 3 months after the injury and cognitive reserve was estimated with a vocabulary test. Linear mixed models demonstrated that group differences in cognitive test performance varied as a function of cognitive reserve ($p=0.001$), with the biggest differences seen among participants with low cognitive reserve. The findings support the cognitive reserve hypothesis in the mild TBI context and suggests that persons with low cognitive reserve are more vulnerable to reduced cognitive functioning if they sustain a mild TBI.

Presentation 2:

Title: Sleep quality modifies neurocognitive and psychological health after mild TBI

Presented by: Simen Berg Saksvik, PhD candidate, Norwegian University of Science and Technology and St. Olavs Hospital, Trondheim, Norway

Abstract: Patients with mild traumatic brain injury (mTBI) (n=197) and trauma controls with orthopedic injuries (n=82) were included in a prospective longitudinal study. The participants (age 16-60) completed neurocognitive tests assessing response speed and accuracy at 2 weeks and 3 months after injury. Interviews and questionnaires assessing sleep quality and psychological distress were administered at 2 weeks, 3 months and 12 months after injury. We observed a significant interaction effect between poor sleep quality and group for neurocognitive response speed, psychological distress, driven by a greater negative impact of poor sleep quality on response speed and psychological distress in the mTBI group. Our findings indicate that patients with mTBI have an increased vulnerability to poor sleep quality after injury compared to patients with orthopedic injury and that poor sleep quality may be a key contributor to outcome after mTBI.

Presentation 3:

Title: Sleep, cognitive control and brain health

Presented by: Alexander Olsen, Associate Professor, Norwegian University of Science and Technology and St. Olavs Hospital, Trondheim, Norway

Abstract: Lack of sufficient sleep is an under-recognized but prevalent life stressor in modern society. How much and well we sleep can affect our brain health, and consequently our cognitive and emotional functioning and well-being. Sleep-wake dysfunction is also prevalent in practically all patient groups seen by neuropsychologists. Most of what we know about sleep and cognitive function is derived from cross-sectional and correlational studies relying on self-reported sleep measures or experimental studies of total sleep deprivation. Recent work leveraging more ecologically valid and naturalistic longitudinal and experimental study protocols allow for a more direct investigation of the real-life consequences of individual sleep patterns and sleep-wake disturbances. This talk will highlight how such protocols can provide new insights to how habitual sleep patterns and person-adapted partial sleep deprivation are linked to cognitive control function and brain health.

Presentation 4:

Title: Does anxiety and depression modify emotional regulation after acquired brain injury?

Presented by: Jan Stubberud, Professor, University of Oslo, Lovisenberg Diaconal Hospital, Oslo, Norway

Abstract: Objective: To examine the relationship between self- and informant reports of emotional regulation and symptoms of anxiety and depression, in persons with acquired brain injury (ABI). Methods: Seventy adult persons (age 19–66 years, Mage = 43, SDage = 13) with ABI in the chronic phase were included. Traumatic brain injury was the dominant cause of injury (64%), and mean time since injury was 8 years. Emotional regulation was assessed with the Brain Injury Trust Regulation of Emotions Questionnaire (BREQ), while the Hopkins Symptom Checklist 25 (HSCL-25) was employed to measure anxiety and depression symptoms. Results: Twenty-four participants (35%) reported anxiety and depression symptoms above clinical cut-off. Furthermore, our analyses revealed a significant relationship between self-reported scores of emotional regulation (BREQ) and symptoms of anxiety and depression (HSCL-25). Conclusion: Our results indicate that psychological distress is prevalent and co-occur among those suffering from emotional dysregulation after ABI.