MEMORY PERFORMANCE AS A FUNCTION OF ANXIETY IN INDIVIDUALS WITH AND WITHOUT MILD HEAD INJURY

Julie M. St. Cyr¹ & Dawn Good, Ph. D., C. Psych. ²
¹Brock University, ² Brock University

Background

- Current research focuses on moderate to severe traumatic brain injury.
- Little research examines the cognitive sequelae and emotional regulation following mild head injury (MHI).
- MHI - defined as physical trauma to the head via a biomechanical force sufficient to produce an alteration in consciousness1.

Discussion

As expected, subjects’ level of arousal was found to impact memory performance (i.e. Yerkes-Dodson curve) for both verbal and spatial material. Individuals without MHI and hei

Results

State anxiety levels differed between individuals with and without MHI, F (1, 48) = 4.23, p = .045.

![Graph showing state anxiety levels](Image)

Immediate, F (1, 48) = 4.02, p = .050, and delayed, F (1, 48) = 6.61, p = .013, narrative recall performance of individuals with and without MHI differed as a function of state anxiety.

![Graph showing narrative recall performance](Image)

Similarly, recall ability for thematic material for individuals with MHI and without MHI varied as a function of state anxiety for both immediate, F (1, 48) = 3.85, p = .056, and delayed recall, F (1, 48) = 3.93, p = .054.

![Graph showing thematic recall performance](Image)

Time required for completion of the delayed reproduction (after a minimum 30 minute delay), but not immediate reproduction, of the RCF did vary significantly between MHI and no MHI groups as a function of state anxiety, F (1, 48) = 4.47, p = .040.

![Graph showing time required for delayed reproduction](Image)

Conclusions

These findings indicate the potential limitations of underarousal that has found to be associated with orbitofrontal disruption and may be implicated in MHI generally. They further demonstrate that the neurological and emotional sequelae following MHI may not be transient despite both the subtle nature of the head trauma and the competency of the individuals involved (e.g. successful academic performance). The results demonstrate that sustaining a MHI is predictive of long-term deficits in cognitive functioning, specifically memory performance which is differentially influenced by arousal.

References


Presented at the 17th Annual Rotman Research Institute Conference, Toronto, Canada, March 4-6, 2007