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Exploring the relationship between cognitive flexibility and psychological flexibility after acquired brain injury

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Abstract

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Objectives: Psychological inflexibility has been linked to a wide range of mental health problems and is a primary target for change in Acceptance and Commitment Therapy (ACT). It has been proposed that a component of psychological flexibility is cognitive flexibility but this has not been empirically established. Any link between psychological and cognitive flexibility becomes particularly pertinent when implementing ACT with people who have impaired cognitive flexibility such as individuals with an acquired brain injury (ABI). This study measured psychological and cognitive flexibility in individuals with an acquired brain injury to determine whether cognitive flexibility is a prerequisite of psychological flexibility.

Methods: Seventy-five participants with an ABI were recruited from a specialist brain injury rehabilitation unit and given self-report measures of mood (Depression Anxiety Stress Scale-21, Positive and Negative Affect Scale), psychological flexibility (generic and brain-injury specific forms of the acceptance and action questionnaire; AAQ-II & AAQ-ABI), avoidance (Appraisal of Threat and Avoidance Questionnaire) and neuropsychological measures of cognitive flexibility (Wisconsin Card Sort Test, Stroop Test, and Controlled Oral Word Association Test). Participation occurred an average of 21 months (range 1-136) after the index injury.

Results: The measures of psychological flexibility correlated with measures of psychological distress in the predicted direction with higher levels of psychological flexibility significantly associated with lower levels of psychological distress (DASS-21, Depression, $r_s = -.67$) and avoidance (ATAQ-Threat, $r_s = -.66$ and ATAQ-Avoidance, $r_s = -.72$). Functional measures of cognitive flexibility that assess the 'ability to shift' were not related to psychological flexibility or distress. Broader measures of cognitive flexibility that capture additional cognitive processes, such as the ability to suppress habitual responses, were correlated with psychological flexibility. This relationship became non-significant when general intelligence was controlled in most measures of cognitive flexibility with the exception of verbal generativity (COWAT, $r_s = .39$, $p < .01$) and verbal inhibition (Stroop, $r_s = .35$, $p < .05$).

Conclusions: Components of cognitive flexibility, namely verbal generativity and verbal inhibition, are significantly related to psychological flexibility even after controlling for general intelligence in individuals with an ABI. This suggests an overlap between the constructs of cognitive flexibility and psychological flexibility within this population. How impaired cognitive flexibility impacts on achieving treatment-induced gains in psychological flexibility in those with an ABI warrants further exploration. Our data suggest that cognitive flexibility may not be a prerequisite in order to achieve psychological flexibility but it probably helps.