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Executive Function and Multiple Sclerosis: Implications for Occupational Therapy Practice

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Introduction: Multiple sclerosis (MS) is a chronic progressive disease of the central nervous system and is the leading cause of neurological disability in early to middle adulthood. MS is characterised by a broad array of symptoms including cognitive dysfunction. The most frequently observed cognitive impairments are memory, attention, processing speed, visuospatial abilities and executive functions. Executive functions include the abilities to initiate, plan, organise and monitor goal-directed behaviours. Executive functions were previously thought to be a function closely related to the frontal lobes and previous research of executive functions has tended to be with groups such as brain injury and schizophrenia. However more recent advances in neuroimaging techniques have confirmed that executive function deficits may be more apparent in the diffuse brain damage associated with MS than originally thought.

Objectives: This paper will report the results from a study which investigated how executive function impairments manifest in people with MS.

Methods: This cross-sectional study compared the performance of 69 people with a clinically definite diagnosis of MS and 30 healthy controls using a range of neuropsychological test batteries including the Behavioural Assessment of the Dysexecutive Syndrome (BADS), the Dysexecutive Questionnaire, Wechsler Memory Scale ®, the Hospital Anxiety and Depression Questionnaire and the Fatigue Severity Scale. Summary statistics, Mann-Whitney U tests, Paired Wilcoxon, Spearman's Rank correlation along with multiple regression analysis were used to analyse the outcome measures.

Results: Results confirmed, when compared with controls, that as many as one third of people with MS show a level of difficulty with executive functions which may cause some problems within their everyday routines. Disease variables such as depression, anxiety and fatigue were not directly associated with executive function in MS.

Conclusion: Due to the complexity of executive processes, disorders in executive function may not be immediately apparent. The results from this study suggest that the actual prevalence of executive function deficits in MS is higher than previously reported.

Contribution: This study has generated new knowledge regarding executive function and MS.