THE EFFECT OF AUDITORY DISTRACTION ON INFORMATION PROCESSING SPEED IN RELAPSING REMITTING MULTIPLE SCLEROSIS

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ABSTRACT

Multiple sclerosis (MS) is an autoimmune, neurodegenerative, demyelinating disease, with symptoms ranging from a variety of physical and cognitive impairments to mental health difficulties. It affects younger adults as symptom inception generally occurs in the 20-40 year old range. Cognitive impairment impacts 45% to 60% of the MS population. It can be one of the first symptoms of MS and once diagnosed tends to be linked to more extensive cognitive disability later. Impairment in information processing underlies a number of MS specific cognitive functions and early diagnosis of information processing impairment is essential as it leads to continued monitoring and remediation. Cognition is rarely assessed at neurology appointments, because the neuropsychology test batteries that have been developed specifically to target impairment in the cognitive domains most impacted by MS can be lengthy to administer and require specialist training.

Cognitive assessments when conducted take place in quiet rooms, not reflective of circumstances which confront people with MS in the real-world. People with MS exhibit attentional difficulties and experience problems filtering out distractions. The aim of the present research was to consider ecological validity by embedding auditory distractors, in the form of unintelligible speech, in the two computerized cognitive tests, the SDMT and the Stroop, that have already been validated for people with MS. The hypothesis was that people with relapsing remitting multiple sclerosis (RRMS) who test as cognitively intact on the Minimal Assessment of

Cognitive Functioning in Multiple Sclerosis (MACFIMS) still experience cognitive difficulties, which would be unmasked with the distractor SDMT and the distractor Stroop.

Results revealed that the cognitively intact RRMS were significantly slower on the SDMT (with and without) distractors compared to the healthy control group. Within group comparisons showed that the cognitively intact and impaired RRMS were significantly slower on the distractor versions of the two tests. The distractor SDMT and the distractor Stroop are highly sensitive, ecologically valid, brief screening tests that reveal impairment in speed of information processing. The utility and power of these tests is that they can be easily administered at clinic appointments by personnel who require little training.

Key words: Multiple sclerosis, relapsing remitting multiple sclerosis, neuropsychological assessment, information processing speed, attention, distraction, unintelligible speed, SDMT, the Stroop