USING OCULOMOTOR BEHAVIOR TO DETECT FEIGNED MEMORY IMPAIRMENT

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Background: Malingering is the deliberate feigning or exaggeration of illness or injury for the purpose of gain (Slick et al, 1999). The detection of malingering in cognitive performance is an important clinical challenge in neuropsychological assessment. It's largely unknown whether oculomotor responses may be useful in the detection of feigned memory recognition impairment.

Aims: The aim of this study is to explore behavioral and oculomotor responses in a performance validity test under normal vs. feigning conditions.

Method: Seventy-two participants were asked to perform a digital version of TOMM (Test of Memory Malingering) adapted for eye-tracking recording (iView X™ HiSpeed 1250 System). Four groups were studied: healthy control – HC (*n*=31), healthy naive malingers - NM (*n*=19), healthy coached malingers – CM (*n*=8), and clinical control – CC (*n*=14, subjects with multiple sclerosis and memory complaints, but without history of ocular symptoms). HC and CC participants were asked to give their best effort, whereas NM and CM participants were instructed to feign memory deficits, when performing the TOMM. Number of correct responses (CR), response time (RT), and fixation time in old vs. new stimuli were recorded. Mann-Whitney and Wilcoxon tests for data analyses.

Preliminary results: Both NM and CM produced fewer CR and longer RT than HC on the three test trials. HC and CC groups had similar CR, though CC participants had slower RT on all trials. NM and CM had similar CR and RT. Oculomotor recordings showed a familiarity preference (longer fixations on previously presented stimuli than on new stimuli) in the HC group on all three trials. A significant novelty preference (longer fixations on new stimuli than on previously presented stimuli) was found in the NM (second and third trials) and CM (third trial) groups. No significant preference was detected in the CC group.

Conclusions: Healthy individuals feigning memory impairment have a distinct behavioral and oculomotor response pattern, reflecting an increased effort to inhibit a natural response. Oculomotor measures may be useful to detect exaggeration or fabrication of cognitive dysfunction. However, the oculomotor behavior pattern appears to be less informative in clinical populations.

Keywords: Memory, Malingering, Eye-tracking

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