

RESEARCH POSTER / ORAL ABSTRACT TEMPLATE COTEC-ENOTHE2016

TITLE: The influence of environmental distraction on cognitive abilities in ADL performance after frontal brain injured.

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Background:

Previous studies have reported errors in Activities of Daily Living (ADL) under the presence of distracting objects in dementia and brain injury patients. However, little is known about which distractor-target objects relation might be more harmful for performance.

Method:

We compared the ADL execution in frontal brain injured patients and control participants under two conditions: One in which target objects were mixed with distractor objects that constituted an alternative semantically related but non-required task (contextual condition) and another in which target objects were mixed with related but isolated distractors that did not constitute a coherent task (non-contextual condition). We separately analyzed ADL commission errors (repetitions, substitutions, objects manipulations, failures in sequence, extra actions) and omissions. In addition, the participants were evaluated with a neuropsychological protocol including a very specific executive functions task (Selective attention, Stimulus-Stimulus and Stimulus-Response conflict).

Results:

We found that frontal patients produced more commission errors compared to control participants, but only under the contextual condition. No between groups significant differences were found in omissions in both conditions or commission errors in non-contextual conditions. Scores in the Stimulus-Response conflict was significantly correlated with commission errors in the contextual condition.

Conclusion:

The presence of different non-target objects in ADL performance could require different cognitive process. Contextual ADL conditions required a higher level of executive functions, especially at the level of response (Stimulus-Response conflict).

Application to Practice:

Occupational therapists should control the presence of objects related to the target task according to the intervention objectives with the patients.

References

Giovannetti, T., Bettcher, B. M., Brennan, L., Libon, D. J., Wambach, D., & Seter, C. (2010) 'Target-related distractors disrupt object selection in everyday action: Evidence from participants with dementia'. *Journal of the International Neuropsychological Society*, 16(3), pp. 484-494.

Niki, C., Maruyama, T., Muragaki, Y., & Kumada, T. (2009) 'Disinhibition of sequential actions following right frontal lobe damage'. *Cognitive Neuropsychology*, 26(3), pp. 266-285.

Financial support by research project (Junta de Andalucía SEJ-6351) is gratefully acknowledged.