

Prospective memory in Parkinson's disease: a meta-analysis

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Prospective memory (PM) is defined as memory for future intentions, and it is typically divided into time-based (TBPM) and event-based (EBPM) [1]. Deficit of PM has been reported in patients with Parkinson's disease (PD) but it is still unclear the extent of PM deficits as well as the possible dissociation between the two sub-components. Hence, we designed a meta-analytic study to unravel the nature of PM deficits in PD by comparing their performance with those of healthy controls (HCs). A systematic literature search was conducted using PubMed, Scopus, and Web of Science using "Parkinson's disease" and "prospective memory" as keywords.

Articles were screened for titles and abstracts and subsequently evaluated through full-texts examination. We extracted from each selected study: number of participants and demographic, clinical, neuropsychological and neuropsychiatric data. Effect sizes (ES) from cross-sectional data investigating the PM performance for PD patients compared to HCs were computed. Several meta-regressions were performed to investigate the impact of socio-demographical and clinical variables on the results.

Thirteen articles were included in the meta-analysis. Among them, 7 explored differences on both PM sub-components while 6 studies investigated only EBPM sub-component.

PD patients reported worse scores in both TBPM (ES = -0.71) and EBPM (ES= -0.44) PM tasks compared to HCs. No demographical and clinical variables impacted on these results.

Overall, our findings revealed PM deficits in PD patients with a major impairment in TBPM sub-component. Moreover, PM deficits would be independent from age-related processes and PD progression and then, they might be the consequence of executive and working memory dysfunctions [2].

Deficits of PM heavily limit PD patients' everyday functioning impacting on their medical adherence and functional autonomy [3]. Therefore, we underline the need to use compensatory strategies to sustain PM along with the implementation of non-pharmacological interventions to improve these abilities in PD and other neurodegenerative disorders.

References:

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