Incidental vs intentional memory in patients with Parkinson’s Disease (PD)

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INTRODUCTION

Intentional memory refers to the intentional and often effortful memorization, whereas incidental memory refers to the unintentional and effortless encoding of information that occurs most frequently in everyday life (Vingerhoets, 2005). Yet, that latter form of memorization, has not been studied as systematically as the former. Previous studies that have explored the incidental memory performance patterns of patients with PD have revealed contradictory results. For example, some studies have revealed that incidental memory, in comparison to intentional memory, appears to remain intact in patients with PD (Cooper & Sagar, 1993; Vingerhoets et al., 2004). However, another study suggested that patients with PD demonstrated a significant impairment in incidental memory (Ivory et al., 1999). Finally, other studies indicated that PD patients had a deficit in memory both on incidental and intentional tasks (Ellfolk et al., 2013; Ellfolk et al., 2012).

The purpose of the present study was to investigate incidental & intentional memory performance in non-demented patients with PD compared to cognitively intact individuals.

PATIENTS & METHODS

• Seventeen PD patients (mean age: 63.5±8.5 years) and 17 healthy participants (mean age: 59.2±10.6 years) were included in the study.
• Participants underwent a driving simulation experiment and were evaluated through a comprehensive neuropsychological battery.
• Each participant was examined by a neurologist to verify the diagnosis of PD according to the established criteria (UK Parkinson’s Disease Society Brain Bank, Hughes et al., 1992).
• Inclusion criteria: a CDR score ≤ 0.5, a Hoehn & Yahr (H&Y) score ≤ 3. Moreover, the PD patients were in On phase during their driving assessment.
• Incidental memory was assessed with an 8-item questionnaire, developed by our research group, including elements from their driving task, without warning (Table 1).
• Intentional memory was measured by Hopkins Verbal Learning Test-Revised (HVLT-R).
• Raw scores of both incidental and intentional memory tasks were converted into percentages to allow the comparison between the two types of memory.
• No significant differences were observed in age, educational level, general cognitive function, and depressive symptoms between the PD group and the control group (Table 2).

DISCUSSION/CONCLUSION

• In comparison to the control group, PD patients appeared to have significant deficits only in incidental recall whereas incidental memory was well preserved.
• Concerning that intentional memory is a more effortful and demanding cognitive process (Vingerhoets, 2005; Karrasch et al., 2010) the significant difference in the intentional memory task between PD patients and the control group could be attributed to intentional-frontal-related impairments that commonly appear in PD patients (Zgaljardic et al., 2003). Furthermore, our findings indicated that PD patients performed worse in the intentional recall task while their recognition performance was intact. This pattern of findings supports the view that the difficulties in incidental recall maybe explained by a frontal/executive dysfunction and not from a primary dysfunction of the medial temporal lobe structures (Dubois & Pillon, 1996).
• Future studies are needed in order to explore whether the aforementioned findings are independent of the test modality and of the procedure that were applied in the current study.

REFERENCES/ACKNOWLEDGEMENT


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Table 1. Incidental Memory Questionnaire – Free Recall task

Table 2. Descriptive statistics of the patients with PD and of the control group.