

Alzheimer's disease is associated with increased cognitive but not physical fatigue: A preliminary study

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Introduction

Fatigue (both physical and mental) is a **frequent complaint in neurological disorders** and has a **deleterious effect on patient's cognition**. However, the question of mental fatigue in Alzheimer's disease (AD) has not been investigated. AD patients often exhibit pathophysiological traits (i.e. structural and functional brain changes, impaired serotonergic transmission, and sleep disturbances) typically associated with pathological fatigue. Despite this, research into the prevalence and specific triggers of mental fatigue in this population is scarce. This study aims at investigating the **frequency and characteristics of fatigue in Alzheimer patients and its relationships with global cognition**

Methods

- **19 patients with mild to moderate AD** and **150 healthy participants (HP)** completed the Fatigue Scale for Motor and Cognitive Functions (FSMC).
- The **FSMC** measures trait fatigue for **physical** and **cognitive** aspects. Global cognitive status was assessed with the **MoCA** test.
- **Generalized mixed effect models** (with subjects as random effect) were used to determine presence of group effect on cognitive and physical fatigue levels at the FSMC, controlling for age, sex, and education.

Results

- **Group differences on cognitive fatigue** (estimate: 5.34, 95% IC: [1.48, 9.20], $p=.007$, $R^2_{sp}=.05$, $AD>HP$) : complaints of cognitive fatigue in 79% of the patients but 44% of HP.
- **No group difference on physical fatigue** (estimate: 1.98, 95% IC: [-0.19, 6.16], $p=.35$) : complaints of physical fatigue in 79% of AD patients, and in 63% of HP.
- **No significant association between fatigue level and MoCA performance in AD or HP.**

	Patients (N=19)	Control group (N=150)
Age	77.11 ± 6.96*	74.21 ± 6.08*
Sexe, female	5 (26.32%)*	83 (55.33%)*
Education, number of years	13.37 ± 2.83	13.04 ± 3.25
MoCA	20.26 ± 2.79	26.89 ± 1.73

Table. Demographics of the participants, MoCA : Montreal Cognitive Assessment, * significant difference between groups

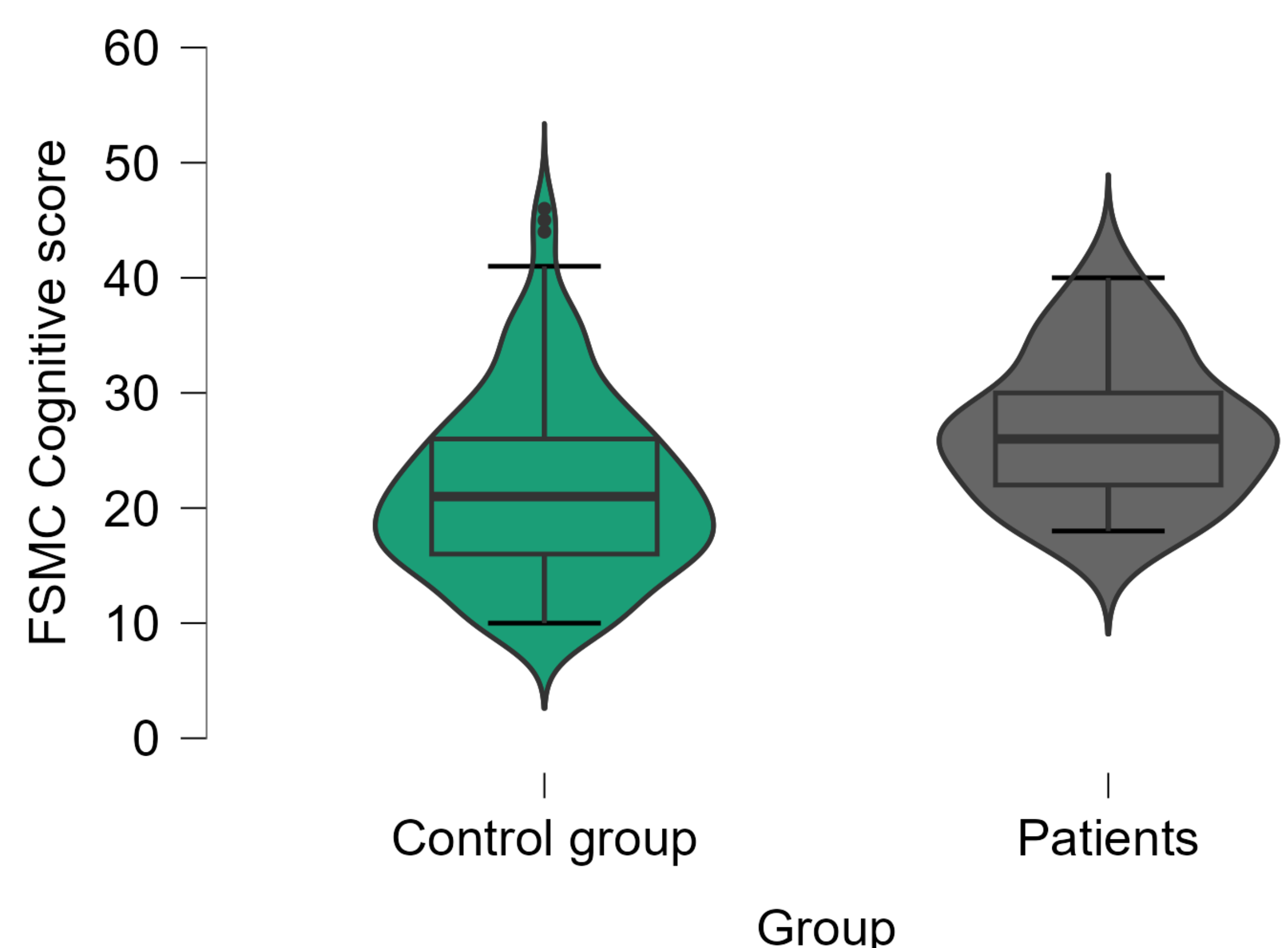


Figure. Scores at the FSMC cognitive subscale for HC and AD patients

Discussion

These preliminary results indicate that **Alzheimer's disease is associated with higher cognitive fatigue**, but not physical fatigue. However, the level of cognitive fatigue does not seem related to global cognitive functioning. A better understanding of mental fatigue and its relationships with brain lesions and specific cognitive processes could help to manage this symptom in order to improve cognitive functioning in daily life.