

From healthy ageing to mild cognitive impairment: The role of executive functions

Saturday, September 13, 2025 2:10 PM (20 minutes)

It is well known that not only memory declines but also executive functions (EFs) undergo significant changes during the ageing process.

The aim of this study was to identify neuropsychological differences, particularly in EFs, between cognitively healthy older adults (HA), individuals with subjective cognitive decline (SCD) and patients with mild cognitive impairment (MCI).

A multidimensional neuropsychological battery to assess cognitive performance, mood and general health was administered to three groups of 15 participants each (≥ 60 years). Due to the small sample size and non-normal distribution of the data, we used non-parametric tests (Mann–Whitney U and Kruskal–Wallis) for group comparisons.

Compared to the HA group (7 women, mean age = 72.33 ± 5.37) and the SCD group (7 women, mean age = 71.27 ± 4.98), the MCI group (8 women, mean age = 73.47 ± 4.55) showed significantly lower performance on all neuropsychological measures. Among the EFs, the Trail Making Test (TMT) B-A score was the most sensitive indicator. A multinomial logistic regression showed that each additional second in TMT B-A performance increased the odds of belonging to the MCI group (but not to the SCD group) by 2.8% (OR = 1.028, $p = 0.027$). In addition, the Coloured Progressive Matrices–36 score significantly predicted MCI status (OR = 0.73, $p = 0.01$), but did not differentiate between HA and SCD participants.

Our results emphasise the importance of detailed assessment of EFs in older adults as subtle deficits may help to differentiate between normal and atypical ageing trajectories.

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