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Association between nutritional status and cognitive function in older adults

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Older adults are at an increased risk for both malnutrition and cognitive decline[1,2]. However, the relationship between nutritional status and cognitive decline remains unclear, and was investigated in this study. This is a cross-sectional analysis of baseline data from the Capacity of Older Individuals after Nut Supplementation (COINS) study, a randomised controlled trial investigating the effect of peanut butter on functional capacity in older adults. Older adults aged 65 years and over, who were community-dwelling, generally healthy and at risk for falls (simplified fall risk screening score ≥ 2) were recruited as part of COINS study. Nutritional status was measured using the Mini Nutritional Assessment (MNA) tool (score range 0 to 30). An MNA score of ≥ 24 indicated normal nutrition status, while a MNA score of < 24 was indicative of at-risk for malnutrition. Cognitive performance was measured by the validated Montreal Cognitive Assessment MoCA (range 0 to 30), and Trail Making Tests-A and B (TMT-A, TMT-B) (as time taken to complete tasks) tools. The MoCA test further provided scores on visuospatial/executive function, naming, language, attention, abstraction, delayed recall, and orientation domains. Multivariable linear regression analysis was used to investigate the association between nutritional status and cognitive function, adjusted for age, sex and BMI. A total of 118 older adults with complete data were analysed (83% females, age (mean ± SD) = 74 ± 4 years; BMI = 27.5 ± 4.2 kg/m^2), of which 93.2% (n = 110) were considered to have normal nutritional status, and the remaining 6.8% (n = 8) were deemed at risk of malnutrition. In terms of cognitive function status, 40.7% (n = 48) had normal cognitive function (MoCA score ≥ 26), 56.7% (n = 68) had mild cognitive impairment (MoCA score 18–25), and 1.7% (n = 2) had severe cognitive impairment (MoCA score 10–17). After adjusting for age, sex, and BMI, MNA score was positively associated with both overall MoCA scores (β (95% CI): 0.29 (0.04, 0.54), p = 0.024) and the visuospatial/executive function (β (95% CI): 0.16 (0.05, 0.28), p = 0.006), but not with other cognitive domains or TMT performance. In summary, our findings suggest that nutritional status assessed via MNA may be predictive of global cognitive function. Future studies are needed to determine if MNA could be a surrogate marker or risk factor for cognitive declines.

References

1. Sun B, Zhao Y, Lu W, Chen Y (2021) *Front Aging Neurosci* **13**, 766–159.
2. Carey S, Deng J, Ferrie S (2024) *Clin Nutr ESPEN* **63**, 177–183.