

Activities of daily living and cognitive function in the elderly

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Background Limitations in activities of daily living (ADL) have been associated with impaired cognitive function [1-3], but it is unknown which ADLs are most predictive or whether different ADLs can be ordered or grouped according to their association with cognitive function.

Material and Methods In 2003, 740 participants of an ongoing population-based cohort study, aged 70 years or older were eligible for a telephone interview on cognitive function using the Telephone Interview of Cognitive Status (TICS). Health related ADLs were assessed separately by self-administered questionnaire using the ten questions from the SF36 with decreasing level of performance (e.g. from vigorous activities (such as running, lifting heavy objects, participating in strenuous sports) to bathing or dressing) with the categories "not limited at all", "limited a little", to "limited a lot". We used multivariable logistic regression to estimate adjusted odds ratios (ORs) and their 95% confidence intervals (CI) for any limitation in each ADL compared with not limited and impaired cognitive function (TICS below 25th percentile) controlling for age, sex, education, smoking, alcohol consumption, BMI, depressive symptoms, and comorbidity.

Results Out of 473 participants interviewed (64.9%), 407 reported any limitation in at least one of the 10 ADLs. There was an association between 4 of the 10 ADLs and impaired cognitive function (adjusted OR for impairment in climbing one flight of stairs: 2.2 (CI: 1.2-4.0), walking more than one km: 1.8 (1.1-3.1), some blocks: 2.6 (1.5-4.5), and one block: 2.7 (1.4-5.2). There was a trend towards an increased prevalence of cognitive impairment with limitations in climbing several flights of stairs: 1.6 (0.9-2.8), and a trend towards an increased prevalence of cognitive impairment with limitations in bending or kneeling: 1.4 (0.8-2.4). There was no association in limitations in vigorous activities: 1.0 (0.5-2.1), or moderate activities: 1.2 (0.7 – 2.0), lifting or carrying groceries: 1.1 (0.7-2.0), or dressing up/taking a bath: 1.3 (0.7-2.6) and impaired cognitive function.

Conclusion Limitations in health related ADLs requiring a moderate level of physical intensity are associated with a lower cognitive performance in the elderly whereas limitations in ADLs of very high and very low level of physical intensity are not. The cross-sectional nature of the study does not allow assessment of temporal sequence and unmeasured confounding by severity of comorbidity cannot be excluded. The observed U-shaped pattern according to intensity of ADL, however, is difficult to explain by reversed causality or unmeasured comorbidity.

Literatur

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