

The Predictive Utility of Subjective Cognitive Decline Using Item Level Data from the Everyday Cognition (ECog) Scales

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Abstract : Early identification of individuals at risk for conversion to dementia provides an opportunity for preventative treatment. Many older adults (30-60%) report specific subjective cognitive decline (SCD); however, previous research is inconsistent in terms of what types of complaints predict future cognitive decline. The purpose of this study is to identify which specific complaints from the Everyday Cognition Scales (ECog) scales, a measure of self-reported concerns for everyday abilities across six cognitive domains, are associated with: 1) conversion from a clinical diagnosis of normal to either MCI or dementia (categorical variable) and 2) progressive cognitive decline in memory and executive function (continuous variables). 415 cognitively normal older adults were monitored annually for an average of 5 years. Cox proportional hazards models were used to assess associations between self-reported ECog items and progression to impairment (MCI or dementia). A total of 114 individuals progressed to impairment; the mean time to progression was 4.9 years (SD=3.4 years, range=0.8-13.8). Follow-up models were run controlling for depression. A subset of individuals (n=352) underwent repeat cognitive assessments for an average of 5.3 years. For those individuals, mixed effects models with random intercepts and slopes were used to assess associations between ECog items and change in neuropsychological measures of episodic memory or executive function. Prior to controlling for depression, subjective concerns on five of the eight Everyday Memory items, three of the nine Everyday Language items, one of the seven Everyday Visuospatial items, two of the five Everyday Planning items, and one of the six Everyday Organization items were associated with subsequent diagnostic conversion (HR=1.25 to 1.59, p=0.003 to 0.03). However, after controlling for depression, only two specific complaints of remembering appointments, meetings, and engagements and understanding spoken directions and instructions were associated with subsequent diagnostic conversion. Episodic memory in individuals reporting no concern on ECog items did not significantly change over time (p>0.4). More complaints on seven of the eight Everyday Memory items, three of the nine Everyday Language items, and three of the seven Everyday Visuospatial items were associated with a decline in episodic memory (Interaction estimate=-0.055 to 0.001, p=0.003 to 0.04). Executive function in those reporting no concern on ECog items declined slightly (p <0.001 to 0.06). More complaints on three of the eight Everyday Memory items and three of the nine Everyday Language items were associated with a decline in executive function (Interaction estimate=-0.021 to -0.012, p=0.002 to 0.04). These findings suggest that specific complaints across several cognitive domains are associated with diagnostic conversion. Specific complaints in the domains of Everyday Memory and Language are associated with a decline in both episodic memory and executive function. Increased monitoring and treatment of individuals with these specific SCD may be warranted.

Keywords : alzheimer's disease, dementia, memory complaints, mild cognitive impairment, risk factors, subjective cognitive decline

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