

Utility of multimodal clinical profiles to identify older adults at increased risk for pathological cognitive decline.

by

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We acknowledge with respect the Lekwungen peoples on whose traditional territory the university stands and the Songhees, Esquimalt, and WSANÉĆ peoples whose historical relationships with the land continue to this day.

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Dissertation Abstract

Background: Subjective cognitive decline (SCD; self-perceived decrements in cognitive functioning in spite of objective cognitive performance within the normal range) subtle cognitive decline (subtle CD; objective sub-clinical decrements in cognitive functioning), and APOE e4 genotype have each been identified as potential risk factors for Alzheimer's and other pathological cognitive decline in later life. However, despite considerable research attention, our accrued knowledge of potential dementia risk factors has failed to coalesce into a reliable screening measure or assessment method at the earliest preclinical stages of decline. A key issue undermining this effort is the challenge of discriminating older adults experiencing age-normative cognitive changes and complaints from those with dementia risk-relevant concerns and experiences. This, in turn, may result from a fractured field that emphasizes some sources of information (e.g., cognitive test performance) at the expense of others entirely (e.g., self-reported experiences). In light of this, a mixed-methods approach integrating the various methods of enquiry and sources of data may be appropriate at this juncture.

Sample and data collection: $n=65$ healthy community-dwelling older adults from Victoria, BC, Canada completed a brief neuropsychological assessment, participated in interviews related to their first-hand experiences of aging and cognitive change, and provided saliva samples for the purposes of genotype analysis.

Chapter 1: This chapter presents a systematic review authored by the Principal Investigator and several Supervisory Committee Members prior to the commencement of this dissertation. This paper presents the current evidence regarding the relationship between SCD and APOE e4 genotype. It is included in this dissertation to contextualize our analysis and overall findings.

Chapter 2: The objective of this investigation was to identify specific psychosocial and demographic predictors of SCD and subtle CD and, by extension, to determine whether these two variables may reflect similar underlying factors. Our findings determined that the predictors for SCD and subtle CD were entirely separable. Moreover, SCD and subtle CD were not found to be related.

Chapter 3: This study explored which commonly endorsed qualitative experiences correspond with SCD and subtle CD. Commonly endorsed qualitative experiences were categorized according to commonality and clinical convention. MANOVA and Mann-Whitney *U* analyses were performed to determine the association of SCD and subtle CD with categories of experience controlling for other demographic and psychosocial factors. Executive functioning declines and related compensatory strategies were strongly associated with both SCD and subtle CD – challenging the traditionally memory-centric focus of the majority of dementia risk research.

Conclusions: As a first step, this work provides evidence that SCD may not relate to early sub-clinical objective cognitive declines. Further, executive functioning – and not episodic memory – may be a key area to explore when determining early risk-predicting cognitive declines. Overall, this work presents the potential utility of more qualitatively-oriented research to inform the development of comprehensive and multimodal risk assessment approaches. Caveats, limitations, clinical implications, and future directions are discussed.