# Acute post-stroke screening for a cognitive care pathway

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The systematic review and meta-analysis by Jule Filler and colleagues[1] is the first, to our knowledge, to review risk factors associated with both post-stroke cognitive impairment (PSCI) and post-stroke dementia (PSD) with the same approach. The extensive meta-analysis showed that the most predictive factor in both PSCI and PSD is acute cognitive impairment, which adds to previous reviews that often did not consider baseline cognition. This Comment elaborates on the complexity of post-stroke cognitive changes and the challenges this complexity poses and discusses domain-specific cognitive screening as a potential solution. The importance of understanding varying trajectories, including cognitive recovery post-stroke, is highlighted as a future research avenue, and the clinical implications of including acute cognitive screening as part of a cognitive care pathway for stroke are explored.

Understanding the nature and trajectories of PSCI is a major challenge in the field, and Filler and colleagues have highlighted the importance of including PSCI literature. Earlier approaches often equated PSCI with PSD; operationally defined as a cognitive score below cut-off (MOCA, MMSE, neuropsychological test batteries etc) in the presence of a history of stroke. More recent approaches include both domain-specific and domain-general cognitive deficits, with varying severities and trajectories. PSCI is highly heterogeneous because of the acutely incurred focal, domain-specific cognitive impairments, often in the presence of degenerating brain health and cognitive changes preceding the stroke.[2]

This heterogeneity has implications for how we do baseline cognitive screening. New clinical guidelines increasingly emphasise the importance of cognitive screening tools that are sensitive to impairments in different domains, without excessive confounding from post-stroke language and attentional impairments.[3] For example, patients who have a left hemisphere stroke will often show marked language impairments that affect scores on the highly verbal cognitive tests designed for dementia.[4] As in previous reviews, here again, there were highly noticeable associations of left hemisphere stroke with PSD, which are probably—at least in part—a confound of language impairment rather than dementia. New stroke-specific cognitive screening tools allow inclusive testing for patients with aphasia and neglect, reducing confounds. Our 2023 study found such acute domain-specific cognitive testing to be the key predictor of severity of PSCI at 6 months post-stroke, more so than demographic and clinical risk factors,[5] in line with the findings from this systematic review.

The routine use of a standard, stroke-specific cognitive screen at baseline would aid future reviews by avoiding the difficulties had by Filler and colleagues in synthesising the available literature with so many varying diagnostic tools, which made it impossible to include domain-specific, continuous severity scores. In addition, predictions of the degree of severity would add valuable information for cognitive trajectory modelling. Domain-specific screening could further allow predictions of not only poor outcomes (in persistent or degenerative PSCI), but also positive outcomes, such as domain-specific recovery. Paralleling the recovery of motor impairments after stroke, many domain-specific cognitive impairments improve over the initial period post-stroke and recovery can continue in the long term.[6]

Early-stage cognitive screening is now widely recommended to identify acute cognitive impairment,[7] although not much guidance is available on how to use these screening outcomes in clinical practice and research. By highlighting early cognitive impairments as a—if not the—risk factor for longer term outcomes, this review has clinical implications for how acute cognitive screening information is to be used in a care pathway for stroke. A care pathway should extend its focus from medication management and secondary stroke prevention to cognitive monitoring. Within such a pathway, having pragmatically implementable prediction tools that capitalise on easily available information could not only prove valuable for clinicians, but could also help stroke survivors and their families to understand the cognitive screening process and PSCI outcomes on an individual level,[8] including possible trajectories.

Because post-stroke cognition is an active area of research, with the current generation of cohort studies paying more attention to detailed assessments of acute issues, it will be crucial for evidence synthesis in this area to be regularly updated.

ND is a developer of the Oxford Cognitive Screen, but does not receive any renumeration from its use.

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