Author's response to reviews

Title: Evaluating the sensitivity and accuracy of instruments used to assess functional status in community-dwelling older adults: a systematic review

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Author's response to reviews: see over
Editors comment:
1) The title is a bit misleading

2) The introduction is too long

Author’s revision:
1) Replace functional status with terminology more specific to disability measurement.

2) Reduced the length of the introduction by nearly 500 words.

Reviewer One, recommendations:
1) The final message reported in the conclusion is that actually there is not adequate instruments to assess functional status in older persons and this message should be reported with prudence, because we have many objective measure of functional status…

Author’s response/revisions:
I divided the response to reviewer one into two parts, with the first part addressing (1) the lack of self-report instruments deemed adequate in this review. The second part addresses (2) the reviewer’s assertion that we should limit functional status assessment to objective measures, i.e., performance based measures such as walk time.

(1) Perhaps the point in the discussion or conclusion section of this manuscript is overstated. The manuscript indicates that a scale that exhibits both an exceptional reduction in ceiling effects, gaps in coverage, as well as IIO for community-dwelling older adults remains elusive. This review suggests that more work could be done to improve the validity of instruments used to assess functional status in community
dwelling older adults. That is, I had hoped to identify a dozen or so scales that exhibited invariant item ordering. If a common hierarchy was established, this could be useful in clinical practice; it would allow a general practitioner to establish, with relative ease, an older adult’s position along the disability continuum, and ultimately his or her risk for future disability.

This systematic review draws attention to the notion that ADL instruments need to be recalibrated for a new sample of subjects, and a new model for disability intervention. Rather than the traditional sample of institutionalised older adults or those now classified as frail, geriatric researchers are assessing function in those that are, as yet, not disabled. This new sample is a subgroup with pre-clinical symptoms who, most likely, are community-dwelling older adults – perhaps only marginally different from their healthy peers. The new model is focused on ‘prehabilitation’ or early intervention aimed at attenuating or avoiding overt disability.

The systematic review attempts to identify the areas of weakness within these instruments that lead to their underperformance in the detecting the early stages of activity restriction. Most notably, areas related to establishing interval level data and construct under-representation.

(2) With regard reviewer one implying that self-reported ADL-IADL can be abandoned in favour of objective measures of functional status: I attempted to outline in the introduction why such a course of action might be counterproductive. For instance, the manuscript states that the justification for improving construct validity in ADL-IADLs, rather than abandoning them in favour of performance measures, can be found in two observations. First, there is evidence that self-reported ADL-IADLs and performance based measures are comparable to each other, but usually measure different aspects of functioning. Second, combining information from self-report and performance measures has been shown to increase prognostic value, particularly in high-functioning older adults.

Reviewer Two, recommendations:
1) I think it would be useful to specify in the title as well as to remind in the conclusion of the abstract that this review concerns the high-functioning older adults (or non-disabled) living in the community.

2) I do not agree with the last sentence of the Inclusion and Exclusion Criteria Section. It is possible to misinterpret this sentence. Perhaps that scales strictly examining Basic-ADLs are less relevant to this review because of the principal interest for non-disabled older adults.

3) I also question the choice of the Nagi model. In fact, I do not question the important contribution of this model and I do appreciate it, but considering efforts made by the scientific community in developing the International Classification of Functioning, Disability and Health (ICF, HMO 2001), I wonder why this model was not chosen?

Author’s response/revisions:

1) COMPLETED

2) Yes, I see how this sentence could have been misinterpreted, and thus I have taken some care to rephrase this section.

3) Several models of transition from health to disability have been proposed. The most well known include the International Classification of Functioning, Disability, and Health (ICF) framework of the WHO (World Health Organization, 2001) and Sadd Nagi's conceptual scheme of disability (Nagi, 1964). Today, both of these models are commonly referred to as the disablement process, a term proposed by Verbrugge and Jette (1994). “The Disablement Process: (1) describes how chronic and acute conditions affect functioning in specific body systems, fundamental physical and mental actions, and activities of daily life, and (2) describes the personal and environmental factors that speed or slow disablement; namely, predisposing risk factors that propel dysfunction, interventions inserted to avoid, retard or reverse it, and exacerbators that hasten it” (Verbrugge and Jette, 1994, p.1). In this thesis I selected the Nagi model to provide structure for the investigation and interpretation of disablement processes. It has been argued that the Nagi model provides a better
framework for the concept of a pathway or process (Guralnik & Ferrucci, 2009). This is particularly true for progressive disability as compared to catastrophic disability, with the latter being more common in younger individuals (Ferrucci et al., 1996). Progressive disability often takes years to develop which allows for sequential tracking through different stages. “The beauty of this framework [the Nagi model and its development over time] is that it allows for appropriate interventions at different points in the pathway” (Guralnik & Ferrucci, 2009, p.1171). The term “process” is used to reflect the dynamics of disablement, and has been formally defined as the trajectory of functional consequences over time and the factors that affect their direction, pace, and patterns of change (Verbrugge & Jette, 1994). The ICF, does involve ADLs, it appears as though the framework primarily views disability in terms of social and environmental barriers that restrict participation.

-In the section Construct under-representation (results section), first paragraph, line 4, replace “Coen” by Cohen. COMPLETED

-In the section Construct under-representation (results section), second paragraph, line 12, replace “Dubec” by “Dubuc”. COMPLETED

-In the section Construct under-representation (results section), second paragraph, line 14, replace Jette et al. [52] by Jette et al. [63] or see where is the mistake in the reference. COMPLETED

-In the section Construct under-representation (results section), second paragraph, line 17, replace McHorney & Cohen [55] by McHorney & Cohen [65] or see where is the mistake. COMPLETED

- In the section Construct under-representation (results section), second paragraph, line 17, replace 2-paramter by 2-parameter scaling method. COMPLETED