Reviewer's report

Title: A systematic review protocol for measuring comorbidity in inpatient rehabilitation for non-traumatic brain injury

Version: 1
Date: 2 September 2014

Reviewer: Maya O'Neil

Reviewer's report:

Thank you for submitting this protocol. The topic is interesting to those of us fields related to brain injury rehabilitation, though I have some concerns about the writing, methods, and scope, proposed in this protocol. First, please have all authors review the protocol to ensure that the writing is edited for clarity and parsimony throughout. The background section needs to be more concisely and clearly written, while methods-related sections need to be significantly expanded to provide needed detail.

Specifically, the quality assessment section lists a general group of tools (CASP), yet doesn’t clarify which tool(s) will be applied based on design factors. This may be because included study designs also need to be more clearly specified in this protocol. More information is needed on which study factors are important to critically appraise this body of literature, particularly since the topic is focused on validity of assessment methods (quality considerations for this type of literature are less common/well known than RCTs, for example). Are sample selection factors important? What about participant attrition? Factors related to generalizability? Other study design factors specific to this clinical topic and research question? These key quality factors should be listed and explained.

The analysis (or synthesis) section also needs significant clarification: Rather than simply stating that narrative synthesis is likely, you should provide information about what the synthesis will entail. For example, will studies be grouped by any key factors such as diagnosis or assessment tool? How will you synthesize studies of various designs? Will certain tools or items be grouped? Etc.

I also have questions about the proposed scope: It makes sense to separate TBI from nTBI, but the inclusion criteria for this review seem a bit narrow in scope. As a systematic reviewer, I am very sympathetic to the need to scope reviews in order to be feasible; however, the rationale for such scoping decisions should be supported by methodological and clinical decisions. You do not provide a strong clinical or research rationale for excluding stroke from the nTBI category, particularly because included brain injuries don’t share etiologies, symptoms, etc. I am wondering if consultation with a research librarian could help expand the scope while maintaining feasibility of the review? Many research librarians have expertise in refining searches to increase specificity without sacrificing sensitivity, and perhaps this could enable feasible inclusion of stroke-related literature.
Because you propose that the body of literature will be relatively small and not often include validation studies, I imagine that the main hurdle in terms of size of the literature will be at the abstract review stage, rather than at the data extraction/synthesis stage. If a large body of literature is identified, it may be possible to select only studies meeting important methodological criteria relevant to the research questions and clinical topic rather than restricting the scope to exclude stroke.

Finally, I would recommend that the overall purpose of the proposed systematic review be clarified throughout the protocol. Currently, the protocol describes a rationale for understanding comorbidities as being related to evaluation of the effectiveness of rehabilitation. Though this is clearly part of the rationale, this alone does not provide adequate support for the review (for example, evaluating the effectiveness of rehabilitation methods can be reasonably investigated through RCTs, and therefore there is less concern about describing comorbidities in a group of participants who can be randomly assigned to intervention vs. control conditions). It is also unclear in places whether the focus is on describing the types of methods used to assess comorbidities, or on describing the comorbidities themselves (prevalence, etc.). This, too, should be clarified throughout, and a strong research and clinical rationale provided for the chosen focus of the review.

Overall, the topic is interesting, but I would recommend significant edits and changes to the writing, scope, and methods prior to reconsideration for publication.