Author's response to reviews

Title: Evaluation of the internal construct validity of the Personal Care Participation Assessment and Resource Tool (PC-PART) using Rasch analysis

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Dear Editor,

Manuscript 2845517191222796: Evaluation of the internal construct validity of the Personal Care Participation Assessment and Resource Tool (PC-PART) using Rasch Analysis.

Thank you for consideration of our manuscript for inclusion in BMC Health Services Research.

The manuscript has been revised in accordance with your reviewers’ comments regarding minor changes that are required.

Reviewer 1: Manwai Yuen:

Points 1 to 6. No changes required.

Point 7. "Both the English and the presentation of this paper are excellent. However, this article consists of two minor errors, which are as follows:

1) The sentence starting from line 39 in the original manuscript should be "Data used in this research were taken from admission data......".

Done. Refer to line 39 in the revised manuscript.

2) The sentence starting from line 79 in the original manuscript should be "The distinction between......may depend not only on the content of the items......".

Done. Refer to line 80 in the revised manuscript.

Reviewer 2: Margaret Kelaher:

Reviewer’s report: "Overall this is a well written paper which further develops the Personal Care Participation Assessment and Resource Tool (PC-PART). The findings need to be far more linked with the current literature and the implications more clearly described". We have addressed this feedback as follows:

1) Line 420 – removal of reference 40 as this reference was not directly linked to the statement;

2) Line 427 – Links to supporting current literature (references 40 and 41) were inserted.

3) Lines 431 to 434 – Implications for having more complete and useful measurement of ADL functioning available using the PC-PART were provided. Links to supporting literature (references 41 and 42) as well as the original PC-PART references (13, 29) were inserted:

“Such measurement of ADL functioning may enable existing barriers to patients’ discharge to community living to be identified and addressed [41, 42]. In this way, the PC-PART scales may assist decision-making by health care team, consistent with the original purpose of the PC-PART [13, 29]."
4) Lines 436 to 455 – Insertion of additional text, plus editing of existing text provided explanation of the broader implications of using the validated PC-PART scales at the level of health care system management and at a community level to measure the magnitude of, and describe the nature of ADL participation restrictions in specified populations. References to recent literature were inserted (references 43-46) supporting the need for such measurement:

“The PC-PART Self-Care and Domestic Life scales may have potential to aid health care system management. The patterns and the extent of ADL participation restrictions experienced by specific patient populations, as well as the extent of care required by family, friends and neighbours in providing support to those who need it, is an inadequately described phenomenon [43, 44]. The PC-PART scales may enable identification and documentation of unmet ADL needs that arise from inadequate and/or unstable supply of both formal and informal supports intended to enable people to accomplish essential self-care and domestic life activities in their community living environments. Support with self-care activities (e.g. toileting, showering, and dressing) and domestic life activities (e.g. shopping, cooking, transport, and household tasks) is commonly provided by a combination of both formal and informal supports including family, neighbours, friends and paid or volunteer services [45]. Use of the PC-PART scales may assist clinicians, managers and researchers to quantify the extent of informal supports that help people accomplish their essential activities of daily living. The involvement of patients and their key informants in the PC-PART assessment may enable identification of the types of supports and resources most needed in communities by specific patient groups, as well as identification of existing service gaps. Recent literature highlights the importance of involving patients and carers in identifying the types of support that would be of greatest assistance to them in easing carer strain [43-46].”

5) Lines 457 to 468 – Insertion of additional text provided explanation of the implications of being able to use interval level measurement to measure ADL participation restrictions in order to have an impact at a health system level. Recent supporting literature from Australia was used to exemplify this point (reference 41):

“The PC-PART scales provide interval level measurement, which may be used to measure the magnitude of change in patients' levels of ADL participation restriction. This may make it possible to investigate the efficiency of clinical interventions and community services that seek to reduce ADL participation restrictions. This may be of significance for outcome-based payment systems. In Australia, the most recent payment system incorporates measurement of functioning across a limited number of domains, focusing on measuring activity limitations, and this may not be adequate for complex rehabilitation [41]. Madden et al. reported there is a need for an ICF linked standardised measure within case-mix systems, and that including information about broad aspects of functioning increases the proportion of the variance explained in health care costs [41]. The PC-PART may be an appropriate measure for this purpose.”

6) Lines 470 to 476 – Sentence structure and phrasing were edited to provide clarity. No additional concepts introduced:

“One of the strengths of this study was the use of Rasch analysis to provide a detailed analysis of not only the PC-PART items, but also the item response categories [24, 25]. Analysis of the PC-PART's item response categories supported use of the dichotomous response categories of the PC-PART items. These response categories are consistent with the overall purpose of the instrument, which is to identify and document the presence of ADL participation restrictions in activities of daily living required for community life.”

7) Line 480 – the word “respectively” was added to provide clarity.

8) Lines 486 to 491 – Sentence structure and phrasing were edited to provide clarity. No additional concepts introduced:

“An inter-rater reliability study of the PC-PART conducted in the same rehabilitation centres, using the same therapists to collect PC-PART data, with an independent sample of patients, showed a high level of inter-rater agreement, with an intra-class correlation coefficient of 0.91 (95% CI 0.88 to 0.93) for grouped PC-PART data[16]. Hence, it is unlikely that potential measurement error during data collection influenced the results of this present study.”

9) Lines 493 to 501 – Sentence structure and phrasing was edited to provide clarity. No additional concepts introduced:

“Of the original PC-PART items, 13 showed misfit during the Rasch scale refinement process, and were excluded
from the newly formed PC-PART Self Care and Domestic Life scales. However, it is still possible that some of these items may be clinically relevant as part of an assessment of ADL participation restrictions for community living. Some of the excluded items may not have had health consequences if left unmanaged, or they may have addressed different constructs to ADL participation restriction, or the aspect of ADL participation restriction covered by the item was already addressed by another item. Some items may have contained ambiguous phrasing resulting in misinterpretation by therapists.”

10) Line 555 – inserted the word their to add clarity.

Changes made to the affiliations and contact email address of authors, unrelated to the reviewers’ feedback:

1) Line 6 - Christine Imms’ affiliation to La Trobe University was removed.

2) Line 9 – Affiliation number 1 – Updated name of school to the School of Allied Health (removed and Public)

3) Lines 17 and 20 - I have updated the main email address for correspondence to Susan.Darzins@acu.edu.au

No additional changes have been made to the original manuscript, other than those changes detailed in this letter.

We look forward to your feedback about this revised manuscript.

Yours sincerely,

Mrs Susan Darzins

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