Author's response to reviews

Title: Construct validity comparison of the ICECAP-O and EQ-5D in older adults with mobility impairments

Authors:

Jennifer C Davis (jennifer.davis@ubc.ca)
Stirling Bryan (stirling.bryan@ubc.ca)
Rob McLeod (Robrob_mcleod88@hotmail.com)
Jessica Rogers (Rogejessica.rogers@hiphealth.ca)
Teresa Liu-Ambrose (tlambrose@ubc.ca)

Version: 2 Date: 24 August 2012

Author's response to reviews: see over
August 24, 2012

Dear BMC Geriatrics Editorial Team,

We are pleased to re-submit our manuscript, “Construct validity comparison of the ICECAP-O and EQ-5D in older adults with mobility impairments” for consideration in BMC Geriatrics.

We have been diligent in incorporating the reviewers’ and editorial team comments. These suggestions are addressed in the ‘Response to Reviewers’ document. These revisions are highlighted using the ‘Track Changes’ function in Microsoft Word. We also attached a clean version of the manuscript with ‘Track Changes’ accepted.

We do hope the detailed response to reviewers is helpful in your evaluation of this revised manuscript and we look forward to clarifying further as needed.

All authors have no conflict of interest and financial disclosures to declare.

Sincerely,

Dr. Jennifer Davis, PhD
School of Population and Public Health
Centre for Clinical Epidemiology and Evaluation
VCH Research Institute | The University of British Columbia
Research Pavilion
7th floor, 828 West 10th Avenue
Vancouver, BC V5Z 1M9
Tel: 604-875-4111 ext. 66464 | Fax: 604-875-5179
Jennifer.davis@ubc.ca http://www.c2e2.vchri.ca Reviewer's report
Reviewer's report:
Thank you for a well-written manuscript. You used measures of physiological falls risk, general balance and mobility, and cognitive status to evaluate the construct validity of two measures of quality of life (EuroQOL-5D & ICECAP-O). However, I have major concerns.

Major Compulsory Revisions

1. To evaluate construct validity, you must ensure that the measure of interest captures all the elements of the construct but no others. Within your manuscript, you list the overarching elements of the two measures (EURO-QOL: mobility, self-care, usual activities, pain, anxiety and depression; ICECAP-O: attachment, security, role, enjoyment, and control). Unfortunately, you only use measures of physiological falls risk, general balance and mobility, and cognitive status to evaluate construct validity. These are certainly not sufficient and not necessarily appropriate to evaluate the construct validity these quality of life measures. If you are to frame this manuscript as an evaluation of construct validity, you will have to expand the measures used to validate these QOL measures (possibly including self-perceived health, social support, ADLs, co-morbidities).

Response: We thank the reviewer for this insightful comment. While we appreciate the need to evaluate a wider array of measures, we highlight that the three measures we chose to evaluation the construct validity of the EQ-5D and the ICECAP-O were based on the following rationale. Given that we know HRQoL is highly associated with mobility impairments and cognitive status in older adults [1-3] we chose valid and reliable measures of mobility and cognition [4-9]. We agree with the reviewer that activities of daily living will be an important component of evaluating the construct validity and have therefore added this analysis to our manuscript. We are also limited by the data we collected and so are not able to add analyses relating to social support and perceived health. The EQ-5D and the ICECAP-O are self report measures of health status and quality of life and these instruments themselves are intended to represent patients perceived health.

Action: On page 7, it now reads: “For assessing activities of daily living, we used the Instrumental Activities of Daily Living (IADLs) Scale. Participants completed the Lawton and Brody [10] Instrumental Activities of Daily Living Scale to screen for impaired IADLs. This scale subjectively assesses ability to telephone, shop, prepare food, housekeep, do laundry, handle finances, be responsible for taking medication and determining mode of transportation.”

On Pages 19-22, please see Tables 1, 2 and 3 for revised analyses.
Minor Essential Revisions

1. You mention that a key strength of your study is that you compare the ICECAP-O (a relatively new instrument) to an established instrument (EQ-5D). However, this was not done directly in the analyses. It also was not an objective of the study, as stated.

Response: Thank you for the opportunity to clarify this statement.

Action: On page 12, it now reads: “A key strength of this study is that it compares the construct validity of the ICECAP-O and the EQ-5D in a specific population of older adults with impaired mobility. Given that the ICECAP-O is a relatively new instrument, this study provides a population specific recommendation for use of the ICECAP-O in select samples. This comparison is also useful given that the EQ-5D is a widely used instrument. It also provides a benchmark from which future studies can compare the construct validity of these and other widely used instruments such as the Short Form -6D [11] and Health Utilities Index [12].”

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests: n/A
Reviewer's report  Title: Construct validity comparison of the ICECAP-O and EQ-5D in older adults with mobility impairments
Version: 1
Date: 10 June 2012
Reviewer: Ian Cameron

Reviewer's report:
This is an interesting and useful paper that is appropriate for the Journal

Major compulsory revisions
The authors state that the aim of the reported study is to “ascertain and compare the construct validity of the EQ-5D with the ICECAP-O using valid and reliable measures of physiological falls risk, general balance and mobility, and cognitive status among older adults with mobility impairments.” This is a relevant and important goal because health related quality of life measures have generally not been developed and validated in older people with disabilities. The authors could briefly explain how cognitive status contributes to the construct validity of the two measures.

Response: We thank the reviewer for the opportunity to clarify the rationale behind our primary aim. As you know, by definition construct validity is the validity of a measurement tool established by demonstrating the tool’s ability to captures the constructs that it claims to identify. In this study, we assessed the construct validity of the EQ-5D and ICECAP-O using three dependent measures that are recognized indicators of “impaired mobility” – physiological falls risk, general balance and mobility, and cognitive status among older adults. The EQ-5D is a generic preference based instruments that captures health related quality of life. Cognitive status is a recognized indicator of health related quality of life and thus can be expected to be an important contributor to the construct validity of the EQ-5D that warrants investigation [2, 3]. The ICECAP-O is an index of capability that captures more broadly quality of life. Given that cognitive status is also associated with quality of life, we also hypothesized the ICECAP-O to be an important contributor to the construct validity of the EQ-5D that warrants examination. We do look forward to clarifying our rationale further if needed.

Action: On page 3, it now reads:
“Specifically, HRQoL is highly associated with mobility impairments and cognitive status in older adults [1-3].
Further, QoL is associated with cognitive status in older adults [13].”

A little more information about the study participants should be provided. This should include the percentage who have had a fall, and a fall with injury, in the last 12 months, their mean (SD) gait velocity at baseline, and the percentage who had IADL and ADL impairment at baseline. This will allow readers to judge the extent to which participants had mobility disability.

Response: We agree that it would be helpful to have more information about the study participants. We have added in IADL data into Table 1. We are unable to add some of the above suggested variable as we are limited by the data collected; however, we do report valid and
reliable measures of fall risk and mobility to allow the reads to judge the functioning of our study sample.

**Action:** On Pages 19-22, please see Tables 1, 2 and 3 for revised analyses.

The authors have not included participants with significant cognitive impairment. This should be listed as a limitation to the study.

**Response:** Thank you for highlighting this important limitation. We have now added this limitation to our manuscript.

**Action:** On page 13, it now reads: “Lastly, our study is population specific to older adults with mobility impairment and did not include individuals with significant cognitive impairment. Thus, we are not able to generalize our findings to such broader populations.”

**Minor essential revisions:**

1. Page 8 – The authors state “A score of less than 26/30 indicates mild cognitive impairment”. This is not a generally accepted fact. Either the authors should justify it with a reference or omit it.

**Response:** Thank you, we have now deleted this statement.

2. Page 11 – The authors state that the “mean SPPB score was 7.5 (3.7) indicating what poor balance and mobility and subsequent risk for disability”. The meaning of this sentence should be clarified.

**Response:** Poor performance, indicated by a score of 9 or less, on this scale predicts subsequent disability [14]. Given that 7.5 is close to the low performance score, this indicates our sample has poor balance and mobility and subsequent risk for disability.

**Action:** On page 9, it now reads: “The mean SPPB score was 7.5 (3.7) indicating poor balance and mobility and subsequent risk for disability.”

3. References 13 and 19 are the same paper.

**Response:** Thank you. We have corrected this now.

4. In Table 1 the authors state “Short Performance Physical Battery (seconds) –total”. Should the word “seconds” be omitted?

**Response:** The total score was measured out of 12 points. We have deleted “seconds”.

**Action:** On page 18, it now reads: “Short Performance Physical Battery (max 12 points)”

5. Tables 2 and 3 should have titles that more clearly describe the content of each table.

**Response:** We have revised the titles.
Action: On page 20 & 21, it now reads:
“Table 2. Correlation Coefficient Matrix Summary for Measures of Fall Risk, Mobility, Cognitive Status and Activities of Daily Living versus Health Related Quality of Life and Quality of Life Domains

Table 3. Multivariate Linear Regression Summary for Measures of Fall Risk, Mobility, Cognitive Status and Activities of Daily Living versus Health Related Quality of Life and Quality of Life”

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests: I declare that I have no competing interests.
Additional Editorial Requirements:

Please make the following formatting changes during revision of your manuscript. Ensuring that the manuscript meets the journal’s manuscript structure will help to speed the production process if your manuscript is accepted for publication.

1. Copyediting: Please note that BioMed Central journals are not copyedited prior to publication. We advise you to pay close attention to language during revision of this manuscript. If necessary, please seek the assistance of a fluent English speaking colleague, or have a professional editing service correct your language. For authors who wish to have the language in their manuscript edited by a native-English speaker with scientific expertise, BioMed Central recommends Edanz (www.edanzediting.com/bmc1). BioMed Central has negotiated a 10% discount to the fee charged to BioMed Central authors by Edanz. Use of an editing service is neither a requirement nor a guarantee of acceptance for publication. For more information, see our FAQ on language editing services at http://www.biomedcentral.com/info/authors/authorfaqs#12.

Response & Action: Thank you, the manuscript has been edited.

2. Title page: Please include a title page in the manuscript file. This should contain; Title, Author list, Affiliations (department names, institution name, street name, city, zip code, country), email addresses. The author list and email addresses must be identical in the manuscript file and on the submission system, and it must be clear which affiliation pertains to each author.

Response & Action: Thank you, we have modified our title page accordingly.

3. Acknowledgements

Please acknowledge anyone who contributed towards the article by making substantial contributions to conception, design, acquisition of data, or analysis and interpretation of data, or who was involved in drafting the manuscript or revising it critically for important intellectual content, but who does not meet the criteria for authorship. Please also include the source(s) of funding for each author, and for the manuscript preparation. Authors must describe the role of the funding body, if any, in design, in the collection, analysis, and interpretation of data; in the writing of the manuscript; and in the decision to submit the manuscript for publication. Please also acknowledge anyone who contributed materials essential for the study. If a language editor has made significant revision of the manuscript, we recommend that you acknowledge the editor by name, where possible.

The role of a scientific (medical) writer must be included in the acknowledgements section, including their source(s) of funding. We suggest wording such as 'We thank Jane Doe who provided medical writing services on behalf of XYZ Pharmaceuticals Ltd.'

Response & Action: Thank you, we have revised our acknowledgements accordingly.
References