**Author's response to reviews**

**Title:** Exploration of the association between quality of life, assessed by the EQ-5D and ICECAP-O, and falls risk, cognitive function and daily function, in older adults with mobility impairments

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**Version:** 3 **Date:** 11 October 2012

**Author's response to reviews:** see over
October 11, 2012

Dear BMC Geriatrics Editorial Team,

We thank you for the opportunity 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 final reviewer 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 the reviewer’s final comment 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,

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

Version: 2 Date: 15 September 2012

Reviewer: Laura E Middleton

Reviewer's report:

Major Compulsory Revisions

My major concern remains that this is not an evaluation of construct validity. The constructs that the EQ5D and the ICECAP-O are meant to capture are not all included in this evaluation of construct validity - particularly in the case of the ICECAP-O. This manuscript instead evaluates the association of these QOL measures and health/functional outcomes.

I would argue that another important objective would be to understand how falls risk, cognitive function, and daily function are associated with QOL among people with cognitive impairment, which you address here. It is indeed reasonable and wise to evaluate this association with two QOL measures, one that specifically incorporates these elements and one that does not.

The manuscript itself is very well-written and clearly articulated. If the framing were amended, I would strongly support publication of this manuscript.

Response: We thank the reviewer for this thoughtful comment and explanation. We agree with the reviewer that not all constructs that the EQ-5D and the ICECAP-O are meant to capture were included in this study. Therefore, we have now modified our manuscript accordingly.

Actions:

On page 1, it now reads:

“Exploration of the association between quality of life, assessed by the EQ-5D and ICECAP-O, and falls risk, cognitive function and daily function, in older adults with mobility impairments”

On page 2, it now reads:

“Background: Our research sought to understand how falls risk, cognitive function, and daily function are associated with health-related quality of life (using the EuroQol-5D) and quality of life (using the ICECAP-O) among older adults with mobility impairments.

Conclusion: Both the EQ-5D and ICECAP-O demonstrate associations with falls risk and general balance and mobility; however, only the ICECAP-O was associated with cognitive status among older adults with mobility impairments.”

On page 3, it now reads:

“To address this question, we first need to ascertain the association between falls risk, cognitive function, and general balance and mobility, and health-related quality of life and quality of life among older adults with mobility impairments.”
On page 4, it now reads:
The association of falls risk, cognitive function and general balance and mobility to HRQoL, as assessed using the EQ-5D among older adults with mobility impairments, remains unknown.

On page 4, it now reads:
There remains a gap in our current knowledge regarding the understanding of the association of falls risk, cognitive function and general balance and mobility with HRQoL (assessed using the EQ-5D) and quality of life (assessed using the ICECAP-O) among older adults with mobility impairments. Hence, we aim to examine the association of the EQ-5D with the ICECAP-O with valid and reliable measures of physiological falls risk, general balance and mobility, and cognitive status among older adults with mobility impairments.

On page 12, it now reads:
“Our data suggest that the EQ-5D and ICECAP-O are significantly correlated. Of note, a greater number of domains of the ICECAP-O compared with the EQ-5D explain significant variation in the PPA, SPPB, MMSE and IADLs. Using three key indicators of “impaired mobility”, we demonstrated several distinct differences between select domains of the EQ-5D and the ICECAP-O.”

On page 13, it now reads:
“We recognize that the analyses in this paper are cross-sectional and are therefore unable to infer causation.”

On page 13, it now reads:
“The study of older adults with mobility impairments is essential because injuries in this population are associated with increased morbidity, decreased functioning and increased healthcare resource utilization [20, 31-33]. Our findings are the first to highlight that both the EQ-5D and the ICECAP-O are associated with reliable and valid markers of falls risk and general balance and mobility among older adults with mobility impairments; however, the ICECAP-O captures key indicators of impaired mobility better. Further, the ICECAP-O also captures key indicators of cognitive function better. As such, this study provides a platform for recommending the ICECAP-O to assess QoL among older adults with mobility impairments.”

On page 14, it now reads:
Our study suggests that both the EQ-5D and ICECAP-O demonstrate falls risk and associations with general balance and mobility; however, only the ICECAP-O was associated with cognitive status among older adults with mobility impairments.

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.