

Author's response to reviews

Title: Reconsidering the use of rankings in the valuation of health states: a model for estimating cardinal values from ordinal data

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PDF covering letter

Reconsidering the use of rankings in the valuation of health states: a model for estimating cardinal values from ordinal data

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Response to reviewers

I thank both reviewers for their helpful comments. Responses to specific points are below.

Review 1

1. If I understood the description of the original data collection, VAS scores were also collected. Why did the author choose not to similarly compare the ordinal ranking with the results from the VAS? My guess is that the correlation between the two would be very low, which is an important finding that would suggest that VAS does not provide appropriate values.

The comparison to VAS was done but not reported here. Because the TTO has become something of a “silver standard” to many proponents, it was used as the focus of empirical comparisons in this paper. I agree that the comparison to VAS would be worth exploring in another paper.

2. Is there another name for the Independence of Irrelevant Alternatives assumption that could be used as well? The substitution effect?

Independence from irrelevant alternatives is the formal name of the assumption, also known as Luce’s choice axiom. It is kept in the paper because of the formal connotation.

3. On page 11, the shorthand for state ‘33333’ should be described in a footnote rather than in Table 1.

The shorthand has been moved from the table to the main text.

4. On page 14, first paragraph: "The comparative results were similar..." How were they similar? To each other, but not to the ordinal rankings?

The results for the TTO-implied ranks are lower than those for the direct ranks, just as the results for the TTO values are lower than those for the direct ranks. This has been clarified in the revision.

5. Page 14, next paragraph, it is unclear if the TTO values that are being referred to are the observed or implied values.

This has now been clarified in the text.

6. Figure 1 seems unnecessary. The information in Figure 1 could just be added to the text on page 14.

The figure conveys information about the full distribution of individual reliability coefficients. Because space is not limited, I believe this information is useful to retain, but I would be willing to cut the figure if the editors believe that it is necessary.

7. Page 15, last paragraph, "with an ICC of 0.970 compared to 0.592 or 0.786 for the other two scaling options" is a little confusing. It might be more clear to label the other 2 scaling options and then to refer to them in this sentence.

This has been changed as suggested.

8. Page 16, second paragraph. Figure 3 is never mentioned in the text.

Reference to Figure 3 is mentioned in the paragraph on comparisons between the predictions of the 3 rescaling options.

Review 2

1. This paper reports on a novel approach to obtaining cardinal values for estimates of the utility of health states, using rank ordering instead of direct valuations using (in this case) a type of TTO. Using rank ordering data is theoretically and practically superior to using TTO data, because it can be trusted that most respondents are cognitively able to do rank ordering, whereas TTO is a complex and cognitively demanding exercise. This implies that rank orderings are probably more valid than TTO data, so that I would prefer to use the former, if possible. The analysis in this paper provides first evidence that rank ordering data did not perform worse than direct TTO valuations. The approach is new in the field of health state valuations. The results are valuable and promising for scientific progress in this muddy field, and the approach certainly deserves further exploration.

If (but only if) a revision of the paper will be considered, the author might elaborate a little more on the strange position of the state of 'being dead' in *health* state valuation research, for which the present analysis shows further evidence. (Being alive is a prerequisite for being in any health state; the state of being dead is conceptually on a different dimension.)

This has been elaborated in the revision, and the discussion highlights the need for both further empirical examination as well as conceptual work in this area.

2. And I would not consider comparison of the results from this study to standard gamble as a first priority (discussion page 17).

This sentence has been reworded to downplay the importance of the standard gamble comparison. It now suggests that this comparison “may be instructive” rather than insisting that it is a first priority.