Reviewer's report

Title: Online Assessment of Patient Views on Hospital Performances Using Multivariate instead of Univariate Approach

Version: 1 Date: 24 April 2009

Reviewer: Adam Smith

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Major Compulsory Revisions

1. There needs to be a strong justification for the use of the Rasch Model. It appears that the instrument in its current format provides highly detailed, item-by-item analysis of quality indicators. Evidence needs to be adduced that a summary measure created through a Rasch analysis would provide value-added to relevant shareholders (particularly given that 16/45 items were removed due to misfit).

2. An item bias / differential item functioning (DIF) analysis should be included to evaluate potential subgroup differences, e.g.- male/female, age category and particularly hospital type (small - large acute, teaching, etc).

3. There is no description of the 5 five ordinal categories or how (or on what basis) the data were transformed into the categories. Given this transformation, an analysis and evaluation of the item thresholds (and potential disordering) should be included.

Minor Essential Revisions

1. A summary statement of aims needs to be provided after the Introduction (prior to the Method)

2. A description of the EPIE should be included in an "Instruments" section within "Method" (including a table of the items would be beneficial)

3. The authors should include a more comprehensive account of the Rasch Model, particularly for readers not familiar with the model, including a discussion of item fit, dimensionality, item reliability, etc and how these are evaluated in the model (fit statistics, loadings, etc). On the point of dimensionality there needs to be a more comprehensive account of the procedures and criteria applied (for instance, EV Smith, 2002).

4. The authors need to state and describe which of the Rasch Models was used (presumably either the Rating Scale or Partial Credit Model)

5. The reporting of results suggests that the Infit ZSTD statistics were used to determine misfit, rather than the Infit MNSQ as reported in the Method section. This needs to be clarified.
6. There is some confusion about the number of patients: the "Data Collections" mentions data were collected from 850 patients, yet the authors appear to report characteristics from a larger sample (143,322 patients). This also needs clarifying.

7. Item difficulty makes little sense in this context. The authors should consider describing items in terms of whether they are "easy" or "hard" to endorse.

8. The description of KIDMAP / Web-KIDMAP is extremely confusing. This section requires further detail and explanation, particularly how the KIDMAP links up with the previous Rasch analysis.

10. RM Smith et al (Reference 37) do not advocate the use of Mean Squares to identify fit (these authors recommend standardised t-statistics, ZSTD). Therefore an alternative reference should be used to support the use of MNSQ, rather than ZSTD in identifying misfit.

Discretionary Revisions

1. It would be more informative to include the fit statistics (including misfit) for all items of the EPIE in Table 2.

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

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I declare that I have no competing interests