Reviewer's report

Title: Evaluating a revised version of the Minnesota Innovation Survey to measure improvement initiatives in healthcare

Version: 1 Date: 1 June 2012

Reviewer: Denise Quigley

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Review of “Evaluating a revised version of the Minnesota Innovation Survey to measure improvement initiatives in healthcare”

Major Compulsory Revisions

1. To better understand the changes the authors made to the MIS survey, which appear to be quite extensive, the authors need to include in the Methods section, under The Swedish version of MIS – adaptation process, starting in paragraph 2 and continuing 3:

-The number of questions from the MIS that were not changed and the number that had revised wording, a revised scale or both. The best way to display this would be with a table as well as a summary paragraph that describes by dimension how many items were unchanged, how many had wording revisions, how many had scales changed and how many were deleted and if there were any new items added.

2. In the abstract and in the text the authors should refer to the revisions made as “extensive adaptation and modifications were made”. Given what is currently in the article, it is not possible to know if any of the original items remained from the MIS for comparison purposes.

3. The example of changes from the original and final survey provided in the 4th paragraph of the Methods section are not detailed enough for the reader to know what changes were made to items. The example of change an item provided in the text is not a change, but is really a deletion of an item and adding an item that is a different, although slight related, concept. The change provided in the example is not just rewording. The new item asks about a completely different concept and therefore is not an adaptation, but really a deletion of the original item and the adding of a new item. The original item on the MIS is “How big of an undertaking does this innovation represent” and is directed at the size, scope or enormity of the innovation. The example of the revised MIS item, “How much commitment do you feel toward the improvement idea?” is about the commitment level of the respondent, which has nothing to do with the size, scope or enormity of the innovation. The authors need to lay out much more specifically the adaptations and changes made so that readers can understand how to crosswalk the MIS to the revised MIS.
4. In the Data analysis section, the authors mention descriptive statistics, but the authors do not report the means and standard deviations in the Results section. In the results section, the authors should report the means and the standard deviations as well as they should add some more analyses. For each item and for each dimension, the authors should run and report the % floor, % ceiling, as well as the observed reliability and the sample size required to have 0.70 reliability. Without this information, a reader does not know the minimum sample size they would need for each the items or the dimensions in the revised-MIS. In this study they have a large sample size of 210, but in some cases you may only have 50 respondents to a QI initiative. The sample size to obtain a 0.70 reliability is necessary.

5. In the results section under Factor analysis and correlations, the authors should note that 0.67 is barely acceptable. They should also provide a different suggestion based on their results to leaving the “Internal Dimensions” as a combined set of 8 sub-dimensions. Given the differences in scales and the alphas over 0.70, the authors should suggest the following:
   - A dimension called “Resource scarcity” (5 items) with an alpha of 0.76
   - A dimension called “Decision Influence” (4 items) with an alpha of 0.71
   - A dimension called “Improvement of Group Leadership” (5 items) with an alpha of 0.66

6. By providing this additional information, then the authors could suggest the revision or a different grouping or deletion of the other items in the Internal Dimensions list. As a 24-item dimension, with such a broad set of differing concepts and with the items using different scales, it is not very useful as it stands.

7. The discussion section could be bolstered. By providing this revised set of recommendations based of their psychometric measures of the items and composites (as described above), the authors will need to revise their recommendations. However, by revising their recommendations, the revised-MIS appears to produce several very useful dimensions to measure quality improvement efforts.

8. In the Discussion section in the 1st paragraph, the authors need to provide a lot more detail about their revisions to the survey. The actual details of the revisions, as mentioned above, should be included in the other sections of the paper, but they should also be discussed here indicating how extensively the MIS was revised. Currently, the authors do not indicate the % of unchanged items, % of deleted items, % of changed items. Were there any dimensions that remained intact or not?

9. The authors do not address limitations. A limitation section should be added and include the extensive revision of the MIS. Given the extensive nature of the revisions to the MIS the authors should not be calling their survey the revised-MIS, as the authors do in the paper. Another limitation that the author...
should mention is the low alphas for some of the sub-composites and some of the items not performing well at all. They will want to state that further development is required.

Minor essential revision

1. The methods are appropriate. However, to know if their newly revised survey would be useful for others, they need to also conduct tests of observed reliability and include the n (sample size) for reliability per item and per composite for 0.70 reliability.

2. I would also add the following details about the MIS survey in the Minnesota Innovation survey description:

   - Cite the specific alphas for each of the 4 original MIS dimensions.
   - Include for the MIS dimensions the number of the items in each of these composites as well as the % ceiling, % floor and the mean and standard deviation.

3. The results section is incomplete. In the Results section in the 1st paragraph, the authors only report results on two dimensions – “Perceived Improvement Effectiveness” and “Internal Dimensions”. The authors need to include a statement as to why they do not report on the other two dimensions. Preferably, the authors would report in the table and in the discussion the results from all 4 dimensions, even if the alphas were low. This would add data to Table 3 and add to the results section. The way it is written now, without an explanation, the reader assumes that excluding it is because of poor psychometric performance. Hence it is better to state that or even better to just report it in the results.

4. In the results section in 2nd paragraph, given the 44% response rate, the authors should address non-response bias, even if they have any data to compare the 44% who responded to the 56% that did not.

5. In the survey results section in paragraph 3, the authors should include the alphas in the discussion of the dimensions.

   In the Survey results section in paragraph 5th paragraph, the authors need a bit more detail. The authors indicated that the need for “evaluations and assessments…. were commented on.” How were the comments provided? Was it through open-ended questions or interviews? Also in this paragraph in the next sentence, the authors indicated that “suggestions on improving the initiative were about getting more knowledge and ….”. The authors should provide if they have it more information on what aspect or type of knowledge was needed.

6. The authors should add the following details about the MIS survey in the Minnesota Innovation survey description:

   - Cite the specific alphas for each of the 4 original MIS dimensions.
   - Include for the MIS dimensions the number of the items in each of these composites as well as the % ceiling, % floor and the mean and standard deviation.
7. Given the extensive nature of the revisions to the MIS the authors should not be calling their survey the revised-MIS, as the authors do in the paper. The authors should also add “Swedish” in the title before healthcare.

Discretionary essential revision

1. The discussion of the Breakthrough Series Collaborative methodology is irrelevant to this article and appears to only be included to set up for another article. It should be taken out to be a cleaner article that focuses on the revisions and usefulness of the revised MIS survey tool for measuring QI initiatives.

2. In the discussion section in the 2nd paragraph, the authors should delete the discussion of reasons why participants potentially do not answer surveys. This is a tangent and irrelevant to a paper that is discussing the revisions to the MIS and its usefulness for evaluating improvement efforts. Instead, the authors should be including a discussion and comparison of the base population (the full 210 participants in the improvement initiative) and the comparison of those who responded to the survey and those that did not.

3. In the Discussion section in the 2nd paragraph, the authors should clarify if the “lack of time” is the lack of time to spend on improvement work or the lack of time in general. The authors should drop the sentences that suppose that if there is not enough time in healthcare to work on QI and answer surveys, primarily because those that answered the survey did take the time to do both.

**Level of interest:** An article of importance in its field

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

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests