Reviewer's report

Title: Quantifying culture gaps between physicians and managers in Dutch hospitals: a survey

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Reviewer: Reijo Sund

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The authors develop so called CG-Questionnaire by slightly modifying the questionnaire made by Kralewski et al. There are at least three appealing ideas in the manuscript: 1) adapting the culture group questionnaire to situation where the hospital system consists mainly of not-for-profit organizations and central regulation, 2) focusing on the culture gaps between physicians and managers, and 3) including also the preferred situation to the questionnaire. These aspects make the manuscript potentially important and interesting.

The methodology of qualitative pretest (study 1) seems to be adequate.
1) However, an appendix showing the 60 statements (and indicating which were Kralewski-questions) should be added.
2) Also the 13 questions posed in the interviews should be reported.
3) It would also be beneficial to point out in discussion some countries that are similar to the Netherlands in the terms of health system.

The procedure of the development of the CG-questionnaire (study 2) appears to be quite heuristic and complicated. That is not necessarily a bad thing, but – for example – a factor analysis with a graphical rotation in order to find the (known number of) dimensions of primary interest, and the dropping of items with low communality could have been simpler alternative. A few issues should be clarified:

4) First, the representativeness of the five hospital sample should be justified.
5) Response rate should be reported also in percentages (37% for physicians and 52% for managers), and potential selectivity of the respondents should be discussed.
6) Please justify more carefully, why exploratory factor analysis was used instead of confirmatory factor analysis.
7) Are you sure that the eigenvalues of the covariance matrix correspond are directly related to certain factors after rotation in factor analysis? Please reword the sentence and refer that you determined the adequate number of factors by using the eigenvalue criterion (or scree-test).
8) Please report the full rotated matrix of factor loadings in the appendix. Highlight the “selected” loadings so that the factor structure can be easily seen.
9) Considering the factor analysis as a model, it would have been more
informative to look also communalities than just loadings. Report also the
communalities in the appendix (as an extra column in the factor loading matrix as
usual).

10) The description of item-total correlation test is unclear. Do you mean that you
calculated a corrected item-total correlation, i.e. the correlation between the item
and the sum score calculated without that particular item?

11) What was the total here – whole questionnaire or some subset of items
determined with the factor analysis?

12) What if several items were below 0.20? Did you remove all of them at once
or one at a time and then recalculated the item-total correlations?

13) Please clarify what do you mean by “…together with the highest Cronbach’s
alpha score.” Were there several possible choices with all item-total correlations
above 0.20 within one “total”?

14) Please report the factor loading matrix (with communalities) for the shortened
list. Why would the total variance explained be more interesting with the
shortened list?

15) As you repeated the factor analyses for four categories, did you still used
exploratory factor analysis? If yes, how did you confirmed that the actual
solutions were comparable? Some sort of confirmatory factor analysis would
really have been beneficial here as the real differences in the factor structures
would have been very interesting. On the other hand, it could be a reasonable to
assume that the factor structure must be similar in all categories, because
otherwise it may be difficult to make any sensible comparisons between the
categories. Please discuss and justify your approach better, if possible.

16) Was the ANOVA analyses done at individual level in this study?

17) Are the culture gaps scores in this study sum scores or factor scores? Based
on your factor analyses or on Kralewski’s work?

18) You report that paired sample T-tests and ANOVA were used in the study 3.
Please be more specific: did you use individual level data or pooled data? Pooled
over whole data or per hospital?

19) You test only the individual items (statements). Isn’t the idea of factor
analysis to find lower dimensional construct and compare these more general
“factors” rather than individual items? Why haven’t you used sum/factor scores
for such purpose?

20) Response rate in the abstract is reported to be 27% in contrast to the results
section where it is 35%. It seems that 27% is the correct one.

21) It is controversial that you state in the discussion that you could not confirm
the same dimensions as Kralewski, and that in the conclusions you say that the
underlying construct resembles the Kralewski’s one. Please be consistent.

22) The sentence “From the above we can conclude the CG-Questionnaire is
statistically sound;…” (in the conclusions) is not true. Please remove it.

23) The abstract should be rewritten. Also the results section in the manuscript
would benefit from the more structured representation of the most important results; the current tables seem to be quite messy and hard to read.

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

**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.