Author's response to reviews

Title: A taxonomy of nursing care organization models in hospitals

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Author's response to reviews: see over
Re: Responses to the reviewer’s comments

We have carefully considered the comments made by the reviewer and have made every effort to address them as fully as possible in order to finalize the paper. Our responses are presented below and highlight the changes made in the paper.

- **Clarification of the types of data used by SPAD for partitioning the selected units.** We made it clearer on page 18 that this analysis was performed with the unit ranking data for the four dimensions of the conceptual framework (staffing, capacity for innovation, practice environment, and scope of practice). The use of those four categorical variables was based on the nature of the analysis performed with SPAD (multiple correspondence analysis) and the imperative of minimizing the number of variables to take into account the size of the sample (22 units). We remind the reader that the unit of analysis was the care unit. We also highlight that these categorical variables resulting from a data reduction process were, in each case, an aggregate of several sub-dimensions, as reflected in Tables 2, 3 and 5.

- **Reporting of the data relating to the intermediate steps of the analysis.** The analytical steps followed with SPAD actually generated a number of outputs with regard to both the data reduction process and the clustering of the units. We had to find a balance between ensuring the analytical process was as transparent as possible and providing information that did not overload the paper and was understandable for the reader. As acknowledged by the reviewer, we first ensured that the analysis pathway was described in full detail, so that the reader can understand the different steps followed and techniques used at each step. Having said that, some further adjustments have been made to address the reviewer’s comments.

With regard to the data reduction, Tables 2 and 3 have been designed to show how we conducted the reduction process and how we obtained the ranking data used in the partitioning steps of the analysis. In Table 3, footnotes clearly indicate the data ranges associated with the different categories. Such details were lacking in Table 2. A footnote has been added in Table 3 to further clarify the significance of the high, medium and low scores attributed to the units. It does not seem relevant to us to add each unit’s specific value score to the tables. This would overload the tables without improving the understanding of the analytical process.

With regard to the hierarchical clustering, it would not have been possible to include in this paper all the outputs generated by SPAD without adding a number of tables. Two statisticians, members of our team, performed this analysis and the outputs remain available. However, to address the reviewer’s concerns, we considered it would be
useful to add further details on a key data set that informed the choice of the cluster solution retained: *data on the intraclass and interclass inertia (page 19 and Table 4).* We also would like to highlight that Table 6, as it is designed, shows the extent to which the four models resulting from the clustering exercise discriminate with regard to each of the four conceptual models. Also we attach to this letter an appendix with examples of figures generated by SPAD. Those figures present a spatial distribution of the different units on the different factorial axes. However, this flat two-dimensional representation provides only an approximation of a distribution that actually occurs on three dimensions. We do not think that adding this kind of data would improve further the understanding of the analytical process.

The reviewer’s minor remark on what is now Table 6 (Table 5 in the previous version), column 2, row 7, has been addressed.

We thank the reviewer and the editorial team for the attention given to this paper. We hope the changes made have adequately addressed the issues raised and will be seen to have improved and clarified the paper. We believe this paper will make an important and original contribution to this area of research and are looking forward to its publication.

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Appendix

Figure 1: Positioning the 22 units in relation to factorial axes 1 and 2 when grouping into four nursing care organisational models

Axis 1 (-)
More supportive environment
Many nurses and many hours
More innovative

Axis 2 (-)
Moderately broad scope of practice
Few nurses and few hours
Less innovative

Axis 1 (+)
Less supportive environment
Few nurses and many hours
More broad scope of practice

Axis 2 (+)
Moderately supportive environment
Moderately innovative
Figure 2: Positioning the 22 units in relation to factorial axes 1 and 3 when grouping into four nursing health care organisational models

Axis 1 (-)
More supportive environment
Many nurses and many hours
More innovative

Axis 3 (-)
Less broad scope of practice
Few nurses and few hours

Axis 1 (+)
Less supportive environment
Few nurses and many hours
More broad scope of practice

Axis 3 (+)
More broad scope of practice
Many nurses and few hours
Figure 3: Positioning the 22 units in relation to factorial axes 2 and 3 when grouping into four nursing care organisational models

Axis 2 (-)
- Moderately broad scope of practice
- Few nurses and few hours
- Less innovative

Axis 3 (-)
- Less broad scope of practice
- Few nurses and few hours

Axis 2 (+)
- Moderately supportive environment
- Moderately innovative

Axis 3 (+)
- More broad scope of practice
- Many nurses and few hours