Author's response to reviews

Title: Psychometric properties of the Flemish translation of the NEECHAM Confusion Scale

Authors:

Koen Milisen (koen.milisen@med.kuleuven.ac.be)
Marquis D Foreman (mdforemn@uic.edu)
Annik Hendrickx (annik.hendrickx@Covance.Com)
Jan Godderis (jan.godderis@uz.kuleuven.ac.be)
Ivo L Abraham (iabraham@matrix45.com)
Paul L O Broos (paul.broos@uz.kuleuven.ac.be)
Sabina De Geest (Sabina.DeGeest@unibas.ch)

Version: 2  Date: 1 February 2005

Author's response to reviews: see over
Dear Editor

We are pleased that you consider publishing our manuscript in BMC Nursing. We did our utmost best to include the referees’ comments. Please find below a detailed account of changes made, along with our rebuttals in the instances were we have opted not to integrate the suggested changes.

We look forward to your reply.

Yours sincerely

Koen Milisen, PhD, RN

Responses to reviewer 1:

1. Commas were changed into periods in the statistics in the last sentence under the methods section and in the figure of the ROC curve.

Responses to reviewer 2:

1. The internationally accepted DSM-IV description of the concept “delirium” was added in the background section.
2. Evaluation of concurrent validity was explained more clearly in the statistical part of the methods section and the results part of concurrent validity e.g. paired observations of the nurses’ scores on the Neecham Confusion scale and the researchers’ scores on CAM and MMSE on the same measurement point were used in the analyses (Pearson correlation coefficient).
3. We appreciate the recommendations of the reviewer to analyze the data by time point, an analysis that we initially tried. However, the number of paired observations at any given time point was low (T1= 30; T2= 36, T3= 40, T4= 43, T5= 45) and even more problematic was that the number of delirium cases for each measurement point was even lower (T1= 2; T2= 2, T3= 3, T4= 5, T5= 1). As a result of such low prevalence, results were unreliable; and therefore sensitivity and specificity could not be calculated. Moreover, for testing internal consistency at least 10 observations per item of the instrument are necessary. Thus, although less than desirable, the only way to answer the research question was by aggregating observations over all time periods.
4. The numbers of complete investigations filled in with the NEECHAM scale at any given time point were added in the statistical part of the methods section.
5. All suggested revisions for tables 1, 2, 3, 4, and 6 were incorporated in the respective tables.
6. Table 5: we prefer not to mark the level of significance for the different coefficients, since no inferential tests were indicated because observations were
not independent. This limitation was already indicated in the discussion part of the manuscript; the main objective of this study was only descriptive.

7. Table 7 and the discussion about the cutpoints 24 and 27 and comparison with the results of Neelon’s study was added in the discussion section.

8. Figure 1: a reference for the ROC curve was added.

9. The expression BI in the results section (Diagnostic values) should be CI, meaning Confidence Interval. This was changed in that way.

10. The fact that Neelon’s study was done with two samples and analysis was not based on repeated measurements was added in the discussion part.

11. Neelon et al indeed created a theoretical framework to link the cognitive (subscale 1) and behavioral symptoms (subscale 2) of delirium with alteration in various physiologic parameters (subscale 3) to facilitate the identification of the underlying etiologic(y)ies). However we do not agree that our suggestion to delete the physiological items ‘vital’ and ‘oxygen’ is wrong. After all, both items do not load on the general factor that includes the seven other items, a result also found by Neelon et al 1996 and Johansson et al. 2002. Of course, and as was already mentioned in the discussion part of the manuscript, further studies are needed to confirm these results before definitely deleting these items from the NEECHAM scale. Furthermore, this is in agreement with reviewer 1 of this manuscript who also believes the findings about the physiological data are intriguing.

12. The fact that the results are based on repeated measurements was added to the abstract.

13. A recommendation that further validation studies should not use added observations was added to the concluding remarks.

14. Abbreviations of scientific journals were added to the list of references.