Author’s response to reviews

Title: Length of sick leave - Why not ask the sick-listed? Sick-listed individuals predict their length of sick leave more accurately than professionals

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Author’s response to reviews: see over
Dear Editors

MS: 1758495353377884
Length of sick leave - Why not ask the sick-listed? Sick-listed individuals predict their length of sick leave more accurately than professionals.

We highly appreciate the comments from the reviewers. We think that their comments will contribute to a more precise presentation of the results of the study. They both asked for a flow-chart to give a better overview of the study, and such is included as new figure 1. The old figure 1, now figure 2, is revised with labels of the most relevant cut-offs in predicted length. In the old figure 2, now figure 3, the upper 95% CI blue error-bar of NIO assessor in shoulder and arm disorders where incorrect and are corrected in the revised version.

Further revisions of the manuscript are accounted for according to comments to each of the reviewers on the following pages.

All authors have read and accepted the changes.

Yours sincerely

Nils Fleten
Comments and revisions according to review’s by Kurt Svardsudd

Major compulsory Revisions: None mentioned.

Minor Essentials Revisions:

- 1-3. The spelling errors identified are corrected as suggested.
- 4. The blue bars in the responder groups represent error-bars giving the 95% confidence intervals, while the red bars represent the span or range in individual ROC areas of the NIO assessors. The mean predicted length of sick leaves gives ROC areas almost at the level of the best individual predictions in the diagnostic sub-groups, explaining the asymmetry. To clarify the difference of the blue and red bars the colour of the bars and the lack of horizontal lines of the red bars are included in the figure legend.

Discretionary Revisions

- 5. To clarify the design a flow chart is included as figure 1.
- 6. To clarify the text, “using a cut-off in the predicted length of 8 weeks” is changed to “using predicted length of at least 8 weeks”, and we hope that this together with the flow-chart will clarify this part.
- 7. We agree that the second and third paragraphs under the heading “Observed length of sick leaves” might preferable be presented under results, and they are moved to the first part of results.
- 8. The second paragraphs of the discussion might as well be presented under the result and according to the suggestion this are also moved and put at the end of the “Sensitivity, specificity.” section.
Comments and revisions according to review’s by Harald Reiso.

First of all we found the report much useful and we are very grateful for the thoroughly presented scrutiny. We have tried to deal with both the general comments and the more specific questions asked.

**General**

The lack of clarity concerning:

- Research question: The research questions were two and we agree in that the two parts could be better clarified: So we have changed the objectives both in abstract and on page 5 to.
  “Based on the current practice with identifying sick-listed individuals at risk of long-lasting sick leaves, the objectives of this study were to estimate the prediction of the NIOs, and to compare their prediction with the self-predictions of the sick-listed”:

- The methods used and Major Compulsory Revisions 1:
  The study design includes several assessments, which complicates the description of the methods. To compare the diagnostic accuracy between NIOs and the sick-listed, using the 152 responders would have been satisfactorily. To estimate the diagnostic accuracy among the NIOs based on different medical information, it is necessary to use all 993 cases. Otherwise we would not have power to estimate the predictions, especially after 8 weeks.

  We have constructed a flow-chart, as figure 1, which hopefully would clarify the methods applied.

- .. the analyses and Major Compulsory revisions 2. and 3.

  The NIOs predicted the presumed length of sick leave at two different points: at two weeks, (all 993 cases) and at eight weeks (for 322 with a Sickness Certificate II). The sick-listed made their prediction at two weeks sick leave plus the number of days exceeding two weeks for receiving the posted questionnaire and before they responded. In average, most of the sick-listed answered within one week after being sick-listed for two weeks, and 80% of answers were received within 12 days from the day they were posted (new figure 1).

  The ROC curves illustrate the relation between true positive rate (sensitivity) and false positive rate (1-specificity) at different cut-offs. The chosen cut-offs compares to the categories of predicted sick leave presented in Methods page 6, and in Table 1. We also have added labels in the figure of the cut offs >= 4, 8 and 12 weeks. Using the mean of consultants and officers assessments gives even intermediate points on the ROC curves of their assessments. The descriptions under Methods, Statistics, are rewritten to clarify this. The preferred cut-off for identifying sick laves lasting 12 weeks or longer is the cut-off that maximise the sum of sensitivity and specificity (nearest the upper left corner of the diagram).

  Predictive accuracy is a misspelling (!) for diagnostic accuracy which is the sum of true positive and negative rates. The term is changed.
4b Diagnostic validity is the common used term for sensitivity, specificity, likelihood ratio and positive and negative predictive values. It does not correspond to diagnostic accuracy, and the last sentence of methods in the abstract and the Statistics part of Methods page 7, are revised to clarify this.

4c Yes, sick leave is used here for sick leave certified by a medical doctor for a maximum of until one year.

4 d and e According to the use of short and long sick leaves under results on page 9, para 3, sick leaves shorter than 12 weeks are considered short, and 12 weeks or longer as long sick-leaves.

5 and 6 together with comments in 4 b
While ROC curves illustrates the diagnostic accuracy at different cut-offs, diagnostic validity gives information on the consequences of the prediction according to false negative and false positive rates, and to predictive values, and likelihood ratio as a helpful tools to estimate post-test probabilities for different cut-offs presented in the ROC curves. We would argue for not omitting the analyses on diagnostic validity because important illustrations of the consequences would be missed.

We hope that the changes made according to the recommendations of both referees have made the paper easier to follow.