Author's response to reviews

Title: Health problems and impaired functioning in long-term sickness absence: ICF coding of medical certificates

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Answers to reviewer Jay Mobo

Pages, paragraphs and lines refer to the revised version

Question 1. The aim has been restated (end of Background) and in Abstract under Background

Q 2. The information that RM was not blinded to the ICD codes is added on page 8.

Q 4. Regarding Table 1 the suggested reduction has been made and the text has been slightly modified. Table 2 has been reduced to show comparisons at component level and domains with significant gender differences. Table 3 has been reduced to include only ICF domains with at least a frequency of 5% (which also includes all significant comparisons regarding gender). The text has been slightly modified.

Q 5. We agree that it would be interesting to show more clearly the relationship between ICD codes and distributions of ICF codes. In Table 3 we can see some rather obvious differences between the groups Mental and Musculoskeletal disorders in terms of how often different ICF category codes occur, e.g. more often pain among the latter and more sleeping problems among the former. As we understand it, creating clusters of individuals according to their respective set of ICF codes is not easily done due to different numbers of codes for different individuals. A crude analysis is to compare the number of ICF codes for different ICD codes. We found no significant differences between the mean value of the musculoskeletal group (mean number of ICF codes 2.5) compared to the Mental ICD codes F41, F43 and F32, mean value 2.7). Neither did the 3 Mental codes differ between each other in a one-way ANOVA (p=.15).

We have also compared the distributions of ICF codes, separately for men and women, for on the one hand the group of individuals with Mental ICD codes, and on the other hand the group with Musculoskeletal ICD codes.

For the whole M-chapter the most striking gender difference was more often
“structure of trunk” among men. This information is also available in Table 3. If we restrict the comparison to the largest ICD diagnosis within the M-chapter (M 54 dorsalgia) “lifting and carrying objects” is significantly more common among women.

For the whole F-chapter the ranking of the codes in terms of frequency was more or less identical between men and women and there were no significant gender differences at code level. Neither were there any significant gender differences breaking down into the two most frequent F diagnoses (F32 and F43).

These observations together with the problem of small numbers if we break down the data to single ICD diagnoses leads us to the suggestion that the manuscript would probably not benefit from showing patterns of ICF codes for single ICD diagnoses and including gender comparison. In order to somewhat stress the differences between ICD in terms of ICF codes we suggest to add a column with p-values for differences in Table 3. We have also added two new sentences on page 13 (underlined) discussing possible interactions between gender and distribution of ICF categories.

Q 8. Please see answer to Q 1.

Major Compulsory revision
Please see answers to Q 2, 4 and 5.

Minor Essential Revisions
Changes have been made according to suggestion.

Answer to reviewer Jerome Bickenbach

Minor essential revisions:
The terminology has been revised according to the suggestions and the changes have been underlined in the text. The term “impairment” has, when appropriate, been replaced by the more general “disability” to include not only impairment but also (activity) limitation and (participation) restriction. The term “comorbidity” has been deleted.

Compulsory revisions
Reference to the review article by Cerniauskaite et al from 2011 and the review article from 2011 by Fayed et al concerning linking rules have been added close to the end of Background.

Regarding the sentence: “ICF thus seems to be a good complement to ICD as it provides additional information”: It may be self-evident but this is just another way to express what was said in the previous sentence, i.e. that an ICD diagnosis, or even combinations of ICD diagnoses give little information of what problems the patient has. We have added “..concerning functioning and disabilities.”

“We agree that the sentence “Our results are also in accord with earlier findings indicating that ICF might be of use to clinicians in communicating complex clinical assessments” (page 13 in the revised version) has weak support in our data, and
The use of “distribution”: The sentence under Abstract/Background has been changed to: "To explore the distribution, including gender differences, panorama and gender distribution of health problems and disabilities. At the end of Background the word panorama has been replaced by “distribution”.

The last point, concerning what is interesting or uninteresting in our study: The predominance of mental and musculoskeletal diagnoses in primary care sick leave is well known and in this respect the finding was quite expected. We still believe that the substantial “overlap” (e.g. mental impairments together with musculoskeletal diagnoses) is of some interest. At least it is of interest to quantify the degree of overlap. As for the gender perspective: it would be interesting to find out whether, giving the same ICD diagnosis, there are differences between men and women in terms of disabilities.

We have given the following reply to the other reviewer:  
“We agree that it would be interesting to show more clearly the relationship between ICD codes and distributions of ICF codes. In Table 3 we can see some rather obvious differences between the groups Mental and Musculoskeletal disorders in terms of how often different ICF category codes occur, e.g. more often pain among the latter and more sleeping problems among the former. As we understand it, creating clusters of individuals according to their respective set of ICF codes is not easily done due to different numbers of codes for different individuals. A crude analysis is to compare the number of ICF codes for different ICD codes. We found no significant differences between the mean value of the musculoskeletal group (mean number of ICF codes 2.5) compared to the Mental ICD codes F41, F43 and F32, mean value 2.7). Neither did the 3 Mental codes differ between each other in a one-way ANOVA (p=.15).

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