Reviewer’s report

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

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Reviewer: jay mobo

Reviewer’s report:

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

This is an article that tries to define the distribution of health problems and functional impairment in their study population, as well as test the utility of ICF system in long-term sickness absence.

To directly address the questions:
1. Is the question posed by the authors well defined?
Yes, the research questions were well-defined, albeit I think that that primary aim should be the use of ICF.

2. Are the methods appropriate and well described?
In general, they are. I am not sure if RM (see page 7, last paragraph) was blinded to ICD codes when he classified the cases by ICF system.

3. Are the data sound?
They did samplings to adjust for potential seasonal variability.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
The tables are rather too busy. Perhaps others can be collapsed.

For instance in table 1 (ICD 10):
1. Keep V. Mental and behavioral disorders row 2. Keep F43 row since it is significant, but consider omitting the rest under V.
3. Similar can be done with other organ systems to highlight the significant correlations

For ICF table and ICF versus ICD table, also consider highlighting the significant findings and the rest can be described in the text.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
The authors concluded that the distribution of causes of long-term absence from work differ between males and females in their study. This is supported by their
The authors also concluded that ICF complemented the ICD coding system. The data do suggest that correlation but is quite difficult to glimpse from the ICF versus ICD table.

Review of published medical literature showed utility if ICF in chronic conditions in childhood, functional outcomes of musculoskeletal disorders, fibromyalgia, HIV quality of life measures, etc. Thus ICF does seem to have some utility in impairment classification.

But looking at the ICF versus ICD table, the correlation is not clear. Perhaps, a way to present the data is to have a table:

<table>
<thead>
<tr>
<th>ICD male</th>
<th>ICD female</th>
</tr>
</thead>
<tbody>
<tr>
<td>% male + MKS</td>
<td>% female + MKS</td>
</tr>
</tbody>
</table>

ICF + impairment
ICF -

This way the readers can have better appreciation of the differential distributions of musculoskeletal conditions between males and females; and how ICF and ICD distributions align. Similar table can be constructed for MH conditions.

Beyond the issue of clarity of presentation, even if there is correlation between ICD and ICF, it is not clear from the article how much clinical information "impairment in emotional functions" adds in addition to knowing the mental health ICD diagnosis. Perhaps if the article was able to tease out a cluster of ICF impairments (via factor analysis, maybe) to correlate with, say, severity of mental health disorder, then I think ICF will be more user-friendly complement to ICD.

6. Are limitations of the work clearly stated?
Yes, that they did not have first-hand information of the health status.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Yes, the manuscript is well referenced.

8. Do the title and abstract accurately convey what has been found?
To me the title seems to suggest the reverse order of their study aims. I think at best it is more about utility of ICF; at worst the manuscript can be separated into 2 reports.

9. Is the writing acceptable?
There are no fatal syntax errors but I just seem to had hard time reading at first. But 2nd and 3rd readings were smoother.

Reviewer's report
- Major Compulsory Revisions
Please see comments on table presentations and blinding question

- Minor Essential Revisions
On page 8 middle of the last paragraph, use "Ten percent" instead of 10% as start of the sentence Under Background (page 3) consider "long-term work incapacity" instead of "long-term"

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**
I declare that I have no competing interests