Author's response to reviews

Title: Validation of sick leave measures: Self-reported sick leave and sickness benefit data from a Danish national register compared to multiple workplace-registered sick leave spells in a Danish municipality.

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Version: 2 Date: 2 June 2012

Author's response to reviews: see over
Cover letter

We want to thank you for the constructive feed-back. We hope our revisions address all of the concerns put forward by the editor and reviewers.

To ease the identification of revisions made in the article, we have underscored new sections and passages and copy-pasted the deletions into the cover letter. Elsewise it is explained in the responses below.

Point-by-point response to the editor:

Comment: “The introduction as well as the discussion should be improved in order to link to the international literature. At this moment the paper is too much a translation of a Danish study. What could the international research community learn from your research? What is typically about Denmark and what not, and what does this imply regarding the generalization of methods and content?”

Response: We will argue that the increased inquiries for comparative studies on sickness absence not only within countries, but also between countries and different social security systems, not only justifies but also support our efforts for an international publication of the study.

We have tried to improve the background and discussion sections, by focusing on what international literature says about different sick leave measures and the validity of those.

For deletion of passages in the background, please look to the response given to reviewer 1.

In the discussion we have deleted:
Page 21, line 10-12: “As long as the inclusion criterion is equivalent to a sick leave prevalence measure; which was the case in all of these six studies,”

Page 21, line 13: “transferability of the overall agreement from our”

Page 21, line 19-21: “Too many previous studies may thus have classified subjects as being on long-term sick leave which may have introduced a slight bias due to misclassification of study participants.”

Page 22, line 3-10: “Finally, some studies investigated the endpoint RTW in DREAM, defined as a specified number of consecutive weeks with no social transfer payments (21-27). Specificities of almost 100% were obtained which indicates that not being registered in DREAM was, indeed, equivalent to not being on sick leave. However, 75% of the present study population had no refundable sick leave spells, which leads to a very high specificity. The specificities reported in the present study therefore cannot be expected to apply to studies investigating RTW among sick-listed populations because of alterations in the prevalence of sick-listed individuals.”

Registrations of different disability benefits take place in other countries as well. Some of those registers are validated against self-reported sick leave (ref. 9, 14, 15, 16 and 17) but none of the
international studies have validated their disability benefits against workplace-registered sick leave. We are presenting one method to do so.

Comment: “If the authors are able to add other data according to the recommendations made by reviewer 2, this is of course also encouraged.”

Response: We have included a validation of self-reported sick leave data to verify the relatively moderate validity compared to workplace records as shown in other studies. The municipal eldercare workers responded to a questionnaire in 2005 about number of sick leave days in the past 12 months. Answers given were validated against workplace registered annual absence lengths.

- The title has been changed accordingly.
- The abstract has been extended with a method section and results and conclusions related to the self-report validation.
- A key word has been changed into self-report.
- The aim has been extended to include two objectives.
- The description of the study population in the methods section has been expanded with eldercare workers employed throughout 2004 and 2005.
- The statistical analysis section has been extended with “aim 1” and “aim 2“ in the headlines and a new passage has been added.
- In the result section new sub-headlines, referring to which aim is answered, have been added. Along with a new result passage about the self-report validation.
- One new table has been included in the article (Table 3).

Comment: “Please include a Methods section within the abstract. The Methods section should summarize how the study was performed and mention the different techniques employed. It should also include details of any statistical tests employed.”

Response: The structure of the abstract has been modified in accordance to the structure given by the editor.
Point-by-point response to reviewer 1:

1. Firstly, the intro is a little too lengthy, at least to this reader. Kudos for having performed a thorough literature search and for presenting the results so thoroughly, but I think you could easily go more straight to the point, and leave the results of each of the studies for the discussion - where some of it is actually repealed in the current version. You go a long way to justifying the study - and that is not needed.

2. You argue for your study by claiming that a lot of DREAM based studies on sickness absence call for a validation study. A large part of the studies you include and refer to carefully make the point, that sickness absence compensation and sickness absence are not the same. This does not make your study less needed, but in my opinion it is more a question of investigating to which degree there is an overlap between these two sides of occupational ill health.

3. In the discussion, on page 21: You might like to add “30 days after January 2012” in the parenthesis at the top of the page.

4. I don’t understand the phrase "Along with others we consider these highly reliable (5-8)" bottom p3. Who are 'we'? The authors or humanity as such?

5. Which leads to: I actually don't share your unpartial enthusiasm to employer registrations of absence. Your data stem from a municipal employer, where large units, systematization and registration in all kinds of forms are a crucial part of work organization, and has been so for years. Assuming that this way of registering is the same in all business sectors and companies would be optimistic, and I don’t think you acknowledge this in your ms. In my opinion there’s rarely a truth in registration, and therefore the whole idea of benchmarking and validating is artificial. BUT, there is a huge need for investigating if different measures measure alike, which you have done. And you have done this well, so call it what you like.

Response:

1. In order to make this article of international interest we think it is necessary to present what is known about validity in the field of sick leave research. However, we agree with reviewer 1 that the background should be shortened and we have done this considerable by deleting these passages:

Page 4, line 2-5 “Sick leave thus leads to a loss of productivity and high public transfer payments which is a problem for society and workplace alike; and it strongly affects the individual. This concern has sparked numerous studies of sick leave over the past few decades.”

Page 4, line 10-11: “Whichever measure is used, validity is a prerequisite to any trustworthy conclusion, but”

Page 4, line 16-17: “In most countries, the only data source available for (large) population studies is self-reported data.”

Page 4, line 18-19: “The attraction of this option also lies in the fact that collection of self-reported data is subject to few restrictions.”

Page 5, line 9-10: “Insurance-based wage replacement benefits are common in several countries. In such settings,”
Page 5, line 11-15: “In 70% of the cases the duration of self-reported absence exceeded the insurer-reported absence in a Canadian study (14). A similar result was seen in a North American study, which reported an underestimation of at least 50% of the health insurance-paid wage replacement benefits compared with self-reported workdays lost after low-back pain injury (15).”

Page 5, line 21-23: “(workplace records were used as reference standard). Agreement about length of absence was reported as intra-class correlation coefficient of 0.33 for spells > 7 days (11).”

Page 6, line 3-4: “of which some discussed which recall length yielded the best result”

Page 6, line 7-10: “The validity of self-reporting was shown to be associated with the respondents’ personal characteristics. Being a female, having a low educational level, or a poor self-rated health was associated with a lower degree of valid self-report (8;9;13).”

Page 6, line 17-19: “at the level of the individual because each citizen is assigned a unique personal identification number (CPR)”

Page 7, line 1-3: “The definition of ≥ 8 weeks is chosen because the municipal authorities must retrieve information and contact all sick-listed employees within eight weeks.”

Page 7, line 12-14: “The scientific use of 1) tax-financed wage-replacement benefits (sickness benefits) as an approximation of long-term sick leave and 2) self-reported sick leave is validated using workplace-registered short and long-term sick leave as reference standard.”

2. It is a very good point. We discuss the possible biases which may be related to the use of DREAM and measures derived from the register. We have changed the section called “DREAM studies” to “Possible implication of the DREAM validation”. In the new section we elaborate about biases: “In general some bias should be expected because DREAM does not register sick leave as such but sickness benefit and other disability benefits.”

3. We have erased this sentence in the article.

4. We have erased this sentence in the article.

5. We respond to this in the discussion, page 21: “Future research projects should repeat the validation study using data from workplaces from the private sector and state institutions. The municipal health care workers account for approximately 20% of the total municipal workforce of 500,000 persons in Denmark (45).”
Point-by-point response to reviewer 2:

The study would be of international interest if it was performed in different work settings and industries with different types of employers and employees and work organisations. Also studies that compare self-reported data with records can be of general interest for research in different situations and contexts.

For publication, expand the study. For example;

- if the same design is used for different working populations in different branches and with different work organization. For example employees in both small and large enterprises, workplaces requiring a high level of education, in constructive work, …and so on.

- or if both registers were compared with self-reported data

- or with more information about general sources of incorrect registration,

Additionally, the manuscript is of acceptable quality. The research question is well defined and the methods and results are well described. But, in this study there is no support for the conclusion that “DREAM data agreed better with employers’ data files than self reported sick-leave”. You can discuss about, but it is not investigated in this report.

Response:

1. We agree about doing major revisions in order for the article to have a wider international appeal and have added a second aim to address the idea of validating self-reported sick leave data against workplace registered absence. Please look at the responses given to the editor for details about revisions.

   We were not able to validate the self-reported sick leave data against DREAM-data. The way the question was phrased in the survey, did not allow us to differentiate between sick leave spells of at least 15 days or less. Without this diversification we could not repeat the analysis using DREAM-data and self-report.

   We were not able to comply with the idea of repeating the study with different working populations in different branches and with different work organization. However, the study population we had access to encompassed different professions with quite different work organizations and work tasks but still within the same municipality.

2. To address the comment about that: “there is no support for the conclusion that “……”. “ We agree about this point and have erased this sentence. Furthermore, because we included the validation of self-reports the conclusion has changed accordingly.
With best wishes
Christina Malmose Stapelfeldt