Reviewer's report

Title: Sick-leave track record and other potential determinants of a disability pension A population based study of 8,218 men and women followed for 16 years

Version: 3 Date: 17 November 2008

Reviewer: Sturla Gjesdal

Reviewer's report:

Wallman T et al. Sick-leave track record and other potential determinants of disability pension - Comments to the revised version:

Main questions

The authors have not fully understood the general questions that were raised in my first response, and especially the link between question 1 and 2. In addition the authors generally seemed not very open towards the criticism and suggestions put forward by reviewers.

1. There is a huge literature on predictors of future disability pension in the general population and among persons on sick leave. A large part of this literature used data from population health surveys. An important aspect of these studies is a very long follow-up, which is both a strength and a limitation (causal links may be weakened over time). To mention some of these: Krause et al with data from a health survey in Finland (1), studies from Denmark (2), Sweden(3-8) and some very recent studies from Norway, Hunt study(9, 10). The studies have focused on socioeconomic factors, mental health, self-rated health (SRH) and lifestyle factors. There are also a couple of similar studies which have used data from occupational health surveys and even studies with conscription data (young men). It is surprising that this literature is not used as background data since this study have the same design except for the follow up sickness absence data. The authors reply that they are aware of these studies, and these references (ref 16-25) are now included, however without indicating their importance. It is not very helpful to bundle together 20 references (5-25)

In the discussion these references are not mentioned even though the present study seems to contradict previous findings from studies with largely similar design.

2. The authors mention the problem that socioeconomic data are not updated, and that baseline data are used. For some cases survey data are collected before and for some after baseline, which might be somewhat problematic, put this was not my point. Except for education, and smoking the most important determinants from other similar studies based on health surveys, were not included: Workplace factors, BMI, mental health, and not least self-rated health. This is crucial since the study hypothesis is that there were no signs of impaired
health initially in the study (no difference in sickness absence) and that the health problems seemed to develop gradually over a long period of time. The previous studies seemed to show that the health status was different at baseline. Can some kind of selection of “healthy workers” in the surveys explain this discrepancy? The weak effect of education is surprising and should be discussed.

3) The relation between “aim of the study” and the “study hypothesis” (that persons who later receive a DP have little sickness absence initially, but have more and more sick-leave during the follow up compared to controls) The aim was (p 5 para 2): to test the efficacy of sick leave track record (3 measures) as a determinant of disability pension. However, thereafter the “study hypothesis” is mentioned, and this is the first main finding (that hypothesis was confirmed) To test this hypothesis is not an aim of the study, however the authors claim that “if the record is a determinant …. (this hypothesis is confirmed) It is not easy to see why this is true. Later the authors refer to the case-referent (pilot) study and figure 1 as evidence. If so, the confirmation of the study hypothesis should be specified as an aim of the pilot study (if that study is sufficiently reliable).

4) To which extent do the sick-leave measures (track record) depend on the last sick leave? What are the results if this last sick leave period is excluded, or censored after 1 year f.i.? The authors again refer to the pilot study, where follow-up was ended 2 years before the actual granting of the DP (p 9 1 para). But was the same done when calculating the 4 sick leave parameters?

5) 4500 words are quite long, and would not be accepted in other epidemiological/public health journals. Since the authors ask for help in order to shorten the paper I have some suggestions in the specific comments.

Specific comments

Title

Is determinant the best concept here? Predictor might indicate causality to a lesser extent. Pension not grant

Abstract:

The first sentence is well known, and of little relevance. Sentence 2 also well known. Previous findings concerning predictors for transition SA->DP main background information.

Methods

Material is presented, but not methods, dependent and independent variables (are mentioned in results, might be enough?). It is not clear how the track record variables are calculated.

Results

Second sentence not results, belongs to data.
Background

Weakest part of paper

The topic studied is not the Swedish Social Insurance system, but determinants/predictors of DP. The public health importance, previous findings and aims of this study should be summarised. Delete the three first paragraphs (p 3-4) and last para on p 4 (advantages with universal coverage well known). The most important studies (5-25) should be specified and presented. A short presentation of the Swedish system might be placed in methods or as an appendix

P5

Last para: Two aims!

Methods:

P5

Generally: too long, narrative form is not very adequate. Ex first sentence: the following words might be deleted: “performed”, “for this study”. Second sentence: “details are presented elsewhere” is sufficient. However some of these details are presented later of which much is not relevant (postal questionnaires vs on location). Line 4 the word “briefly” might be deleted.

P6

Classification of educational level: what was used in this study?

Second para: type of absence and extent (%) not relevant

Should explain better how the sickness absence measures are calculated for each person.

- Duration
- Interval
- Annual (cumulative?) number of days (1.1.-31.12 seem obvious)

Is there one variable for each year, or is this some kind of summary measures (annual means?)

Last sentence “in the study population” and “at any time” should be deleted

P 7

Delete the 3 first paragraphs (not relevant in this study)

P8

Third line “those who participated” - did not all subjects participate in a survey?
Second para: Is this not results?? Figure 1 is adjusted for age ? since cases and referents were matched by age (and gender)

Third para: line 4, is “still alive” necessary?

P 10

Second para: Delete 2 first lines after: The analyses ....

Last three lines: Cases were followed from baseline to granting of DP, death or end of follow-up. Delete last sentence.

Did any cases emigrate?

Results

Characteristics of the study population – is this results?

P11

Second para, not presented in tables – not very relevant, might be deleted.

Third para: Last sentence sufficient?? Data are shown in tables

P12

“The strengths of the predictors (!) is reflected by the chi-square values (higher values more important). Is it so simple? Explain - since this is a crucial premise for the study’s conclusions

Education – how is this variable used here Table one: Mandatory (or basic) education only vs higher. In results this variable decrease the risk of DP, same measure but reversed?? (The low effect of education is perhaps the most surprising finding in this study – even no effect among men in model 2!!)

P13

Para 1: Figure 3 crude results from “pilot study” – is this “no difference” a robust finding of the study? Delete second sentence here. I wonder whether the case referent study is a valid epidemiological study – pilot usually means “quick and dirty”

Para 2: This is a crucial point, since one obviously looks at the very long absences, typically for the Swedish system Duration > 390 days and > 480 days, even 730 and 830 days (2.5 year)

Discussion – might be structured (ref BMJ)

P 14:

Para 1 Main findings: First two sentences, explain! Finding from pilot study??
Para 2 start of “strengths of study”, some of this is said before

Para 3 back to main findings? Appropriate methods were used (main finding?)

P 15

Para 2: More strengths (advantages) also some repetitions

Para 3: Limitation? Might use one sentence elsewhere: 75% of population was covered

Para 4: More on the Swedish system (also strength of study) - universal coverage is the main point here.

P 16

Para 1: The very long sick-leave spells in Sweden are now also mentioned as an advantage “from a scientific point of view”

Para 3: possible bias 1> small

Para 4 possible bias 2> small

P17

Para 1: possible bias 3, not important

Para 2 possible bias 4 not important

Those 4 possible biases are refuted, and this might be done in much less space (nearly 2 pages)

Are there no real limitations? Should be a separate subsection

In my view:

Lack of baseline health variables (SRH, mental health a.s.f) and

Peculiarities of the Swedish system

I would like a discussion of the weak effect of SES – educational level

Para 3: Start of comparison with previous studies

Ref 29 deals with duration of a single SA period, and DP 3 years later.

Refs 4,6-7, 10,12,12-13,30.33 are summarised, if none are mentioned might be even shorter

P18

Para 2: Again “numerous studies”, none is specified! Which are the most important – Månsson et al??
NB very important variables are not mentioned: SRH! Mental health variables!
Mykletun et al. The last two sentences are mentioned before (and later)

Para 3: DP diagnoses no effect, main finding? Robust? Ref 6 deals with sickness absence diagnoses, not DP diagnoses

Para 4 Implications: Might hold only for Sweden, since the probabilities are estimated according to very long spells, since most DP cases are granted after several years on sick-leave.

In other systems/countries a similar measurement might be “time after latest work day when sickness absent” but “sickness absence track record” might be useful only (or mostly) in Sweden

P19

Conclusions: Exactly the same words have been said before

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests