Reviewer's report

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

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Reviewer: Sturla Gjesdal

Reviewer's report:

Major compulsory revisions

Interesting study, based on much valuable data, but are they used sufficiently? The statistical analyses, given the chosen variables, seem robust.

1. However the choice and definition of independent variables are somewhat dubious. The sick leave “track record” (three measures) is compared to civil status, household size, education, smoking, geography and calendar time periods as determinants of DP. Even though the present study used data from population based health surveys, the links to these surveys are unfortunately lacking, only the smoking variable seems to originate from the health surveys.

2. There is a huge literature on predictors of future disability pension in the general population. A large part of this literature has also 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 and not acceptable that this literature is not used as background of this study However, the authors cite several papers which have shown that individuals with a high frequency of sickness absence are at high risk of subsequent disability pensioning compared to those with low sickness absence levels f.i. reference 6, perhaps not surprising?. Also several papers analysing predictors for transition into DP among persons already on sickness absence are cited, which is a different research question.

3. The authors use the terms disability grant and disability benefits, even though disability pension –DP - is the concept used in the most of the cited studies

4. In sum the paper lacks references/discussion of the most relevant studies, even those from Sweden, and perhaps the most relevant confounders (health data) are not included in the analyses.

5. The paper seems very long (word count?) there are numerous repetitions,
several sentences might be shortened. A language edition is necessary.

6. Aim of the study: Defined (in the abstract) as: to test the efficacy of sick leave track record as a determinant of disability grants. However, in the introduction the aim is different: To test the 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. Because of disease? This is somewhat contrary to previous studies which have found impaired health (e.g., mental health and SRH) at baseline. I am not sure that these explanations can be tested with the present design, whereas the aim in abstract and title seems more to the point.

7. As far as I understand the Swedish system implicates that nearly all DP recipients have a very long period on sick leave (many years?) before the DP is granted. To which extent do the sick-leave measures depend on this last sick leave? What are the results if this last sick leave period is excluded? What would happen if the last spell was not included in the track record??


**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests'