Author's response to reviews

Title: Changes in the incidence of occupational disability as a result of back and neck pain in the Netherlands.

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Author's response to reviews:

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Dear BioMed Central Editorial Team,

Thank you very much for considering our paper MS: 3886270389185830 titled: 'Changes in occupational disability as a result of back pain in the Netherlands' for publication in Biomed Central. We have worked through the reviews from mrs. Punnett and mrs. LeBoeuf-Yde. We have found their comments very useful and tried to answers the questions they had. Of course we followed up on the mistakes they found in our manuscript. We would like to thank them for the effort they have put in improving our paper.

We hope that after our revisions the paper can be accepted for publication.

With kind regards, on behalf of all authors,

Jos Verbeek, MD PhD
Ivan Steenstra, PhD

We will discuss their reviews point by point:

Charlotte Leboeuf-Yde:

Point 1: on the Abstract: although the confidence intervals of the IRRs may look strange, they are correct. The IRRs are not symmetrical by nature, and only seem symmetrical in some cases due to the great numbers. The non-symmetrical nature of the confidence intervals are only revealed in the subgroups (with smaller numbers). We have added the original spreadsheet for you to be able to check the original figures (file: IRRs men and women.xls).

Point 2: abstract conclusion. We have rewritten the conclusion paragraph of the abstract to make it better understandable for the uninformed reader,

Point 3: On reference 3: We agree. We have changed it to the Cochrane review by Hagen.

Point 4: on Methods: 1st para: Of course you are right: We changed this to: Therefore, the diagnosis of the disease from which the occupational disability resulted has been backed up by several physicians and can be considered to have at least some kind of validity in contrast to for instance self report.

Point 5: on 2nd para: We added: Coding in both time frames was done based on medical files at the offices
of the social insurance offices by specially trained personal. And added ref 22.

Point 6: to clarify 3rd para, last sentence we added some text and altered some of the words: The diagnosis back disorders consists of 5 major categories that are all divided into subcategories. For some diagnoses at the third level such as cervical intervertebral disc diseases we were not able to disentangle all different sub categories. Therefore, we had to aggregate them at the second level of all intervertebral disc disorders.

Point 7: Statistical analysis: This is an unfortunate mistake and we would like to thank you for noticing, we have changed it to: To compare data over the two time periods we calculated incidence-rate ratios (IRR) by dividing the incidence rate of 1999-2000 by the rate of 1980-1985. And we corrected the misspelled IRRs.

Point 8: We complied to your preference and added In 1999-2000,

Point 9: We checked the points mentioned and used identical terms (disorders instead of pain and diagnoses) as asked.

Point 10: We corrected these points.

Point 11: We added: We compared the time trends in occupational disability due to back disorders to the time trends in occupational disability in general, to be able to account for general time trends, for instance due to changes in economics and legislation. From the IRRs we calculated the percentages of increase or decrease by multiplying the IRR by 100 and then subtracting 100 (Percentage in/decrease= 100%-(IRR*100%). In the Methods section.

Point 12: We added of all back disorders in this sentence (For men the decrease in incidence of all back disorders was largest in men under 25 years.)

Point 13: We added: First, due to these changes, a shift from the specific to the non-specific can be observed. Clinicians do not so much anymore claim to "know" what the cause of the pain is but they acknowledge this non-specific disorder as being uncertain in origin. Thank you very much for your suggestion.

Point 14: We added this point to our conclusion: Within the categories of back disorders there was a shift from specific to non-specific diagnoses and an increase in post-laminectomy syndrome. These trends deserve further investigation.

Point 15: Of course you are right, we added: The assessment procedure of the insurance physician that made the diagnosis was similar between the two time periods. However, the diagnosing physicians of course were not the same. We have no official publications to back this up; procedures have remained similar. Making the diagnosis may be influenced by trends and based on our data indeed seem to have changed over the years.

Point 16: see point 9, we also changed this in the text.

Point 17: some countries was changed to Australia

Point 18: We agree and removed it from the text and added: Within the categories of back disorders there was a shift from specific to non-specific diagnoses and an increase in post-laminectomy syndrome. These trends deserve further investigation.

Point 19: We added: In spite of an increase in several diagnostic categories the overall incidence of back disorders decreased over time. in the 3rd paragraph of the results section. Numbers in the different categories are quite different so this doesn't amount to a 50-50 division. We mentioned quite extensively in the text which categories increased and which decreased.

Minor points: Point 20: we added neck pain.

Point 21: we checked and corrected the spelling

Point 22: Thank you we changed it the text from 28% to 21%. dito point 23

Point 23: Although "frailty" is a hard to define definition, we agree with you on the fact that less healthy
workers have a better chance in times of high employment and we added: In times of a shortage on the labour market it could be that also workers in poorer health get the chance to be employed. Although we would like to refrain from mentioning sick days in this paper.

Laura Punnett:

Major compulsory revisions:

Point 1: This point has also been put forward by the other reviewer we discussed this in points 5, 13, and 15

Point 2: We have added It could be that an increase in heavy physical work has led to changed work demands with the result that back pain results more or less easily in occupational disability. The official survey of working conditions does not show such an increase for the nineties. The percentage of persons that report heavy physical work is stable at 20% [25]. on page 11.

We mentioned in the previous version that: This higher incidence of disability is explained by the increasing difficulty for women to cope with combined demands from working life and private life, especially in these branches were female workers are predominant such as health care and education [21] as a possible explanation for the higher incidence.

Minor essential revisions:

Point 3: Thank you for noticing this error: it should have been: incidence of occupational disability instead of age, and has been corrected.

Point 4: Thank you!

Point 5: We changed this in to In 1999-2000, incidence... We didn't repeat that these data are from The Netherlands since this was mentioned in the Introduction.

Discretionary revisions: We choose to describe the IRRs mentioned in the Tables in terms of percentages to make it easier to read for readers with less epidemiological or statistical backgrounds.

We hope that you will consider our manuscript for publication.

With kind regards, on behalf of all authors,

Jos Verbeek, MD PhD

Ivan Steenstra, PhD