Reviewer's report

Title: Development of burnout over time and the causal order of the three dimensions of burnout among male and female GPs. A three wave panel study.

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Reviewer: Marcia Scazufca

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The manuscript examines relevant issues related to the development of burnout among Dutch GPs. The study is well designed and has a longitudinal approach, which allows examining its two main scientific questions: How the prevalence of burnout evolves over time, and what is the causal order of the three dimensions of the burnout syndrome. Over a period of 4 years, three complete assessments were performed with 212 GPs. Results presented in this manuscript are a good example of how research in general practice can help improving working conditions among health care professionals.

Overall, the manuscript is too long. The text needs to be reorganized, focusing more on the questions that can be answered with the data collected.

Major Compulsory Revisions

Background. The background is extremely long and not focused on the main questions the study was designed to answer. Part of the information given in several sections of the background is quite repetitive or is not very relevant for the manuscript. Most of the information given in the “gender, work and health” section could be omitted. For instance, the importance of women on the health market is already stated elsewhere (aims of the study). Also, the paragraph explaining the difference between gender and sex does not seem very relevant for this manuscript (page 4, last paragraph). My suggestion is a complete revision of the background section, giving more emphasis on the gender/sex issues related to burnout over time (and its dimensions). This will make the manuscript more attractive to readers.

Methods. The authors stated that the data was treated confidentially (page 13). Was the study approved by an ethical committee? How ethical issues were treated? How did GPs give their consent to participate in the study?

685 GPs were randomly selected from the Dutch GP population (page 13, paragraph 2). What is the Dutch GP population? Is there any reason for selecting 685 GPs? Is there any justification for this sample size? How did they get 50% women if the proportion in the GP population is 25%? What is the figure of 1349 questionnaires were returned, does it include the three waves?

Most information given on page 13 (paragraph 2 and 3) and page 14 (paragraph 1 and 2) are already results of this study. This information could be summarized...
in a diagram and inserted in the results section.

Is the final sample of this investigation 260 or 212 GPs? There is an inconsistency in the figures presented in the abstract (260) and in the method section (212).

Discussion. It is difficult to understand why the burnout dropped by 11% between 2002 and 2004 if the changes in the health system finished at the beginning of 2000. When these changes really finished? Can the authors be more precise about dates? Is it possible to verify within the data if drop out in burnout varied according to area and data of final reorganization of GPs work routine? What about the 2006 act? Was it implemented at the same time for all GPs? Is there any possibility that differences in burnout prevalence rates over time were due to chance? The authors did not present the 95% CI for the prevalence rates (Time 1, 2 and 3). What would be possible implications of only some 30% response rate?

I recommend a revision on the discussion section. As with the background section, it is too long, difficult to follow, and changes should be made to give more emphasis in what the data suggested.

Not all abbreviations used in the text were defined where first used (e.g. page 8 +DP#:PA#+EE; page 14 M; GLM repeated measures). All abbreviations in the text need to be checked again.

**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.