Reviewer's report

Title: Age- and Gender-related Prevalence of Multimorbidity in Primary Care: the Swiss FIRE Project

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Reviewer: Martin Fortin

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Manuscript: Age- and Gender-related Prevalence of Multimorbidity in Primary Care: the Swiss FIRE Project.

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The aim of the study was to explore the age- and gender-related prevalence of multimorbidity and to compare these estimates with the prevalence of other specific diseases commonly found in Swiss primary care. The strength of the study resides in its large data set generated by practitioners. Its weakness is the disease count method based on coding chronic health conditions seen by practitioners in patient-physician encounters. That means that all other diseases not addressed during any encounter were never coded. As the authors mentioned in the discussion, this method may lead to under-coding of chronic health conditions.

Major compulsory revision

Data presentation should be improved.

1. Results, page 10, last para., and beginning of page 11, it says: “The prevalence of multimorbidity rose almost 20-fold with age, and was 1.9% (95%CI 1.68-2.18%) for those in the youngest age group (20-29 years), and 37.7% (95%CI 36.5-39.0%) for those in the oldest age group (>80 years) (Figure 2, panel d)”. These numbers seem to refer to prevalence values of men and women together; however, all data shown in Figure 2 is separated by gender. A figure or a table with prevalence values by age group with both genders pooled together is missing. For the sake of clarity and precision, I recommend that Figure two be replaced by a table or several tables presenting the prevalence for each group along with the 95% CI.

2. Figure 1. The legend is too long and most of its content belongs to the methods section. Please readjust.

3. Figure 2. (The authors could ignore this comment if the figure is replaced by a table which I strongly recommend.)

3.1 The legend is too long (half a page) whereas the panels are only identified at
their axes. In addition there is no other information about their content.

3.2. Panels b and d seem to show the same thing: “The left column depicts the age- and gender-related prevalence of one or more (panel a), two or more (panel b), and three or more (panel c) chronic health conditions based on the ICPC-2 classification system. The right column depicts the age- and gender-related prevalence of multimorbidity defined as: two or more chronic health conditions based on the ICPC-2 classification system (panel d)”.

4. The authors may want to consider presenting the following data in tables: a) page 9, para. 2 (baseline characteristics); b) page 10, para. 2.

Minor essential revisions

1. In the abstract and the body of the article, when referring to multimorbidity, we find the expression “…the most prevalent disease pattern…” I think that the term “disease pattern” is confusing. I suggest to avoid it and to say clearly and simply that multimorbidity is observed more often than isolated diseases.

2. In the abstract and the body of the article the numbers in thousands are separated by an apostrophe. I suggest using commas instead as appropriate in English.

3. Background, page 5, para. 2 : It says : “Studies from the United States,[6-8]…”. It should say “Studies from the United States, and Canada [6-8]…” because references 6 and 7 are from studies conducted in Canada.

4. The methods section should be improved by clearly explaining that chronic conditions which were not addressed during any encounter were not coded.

5. The results suggest that the underestimation of prevalence was quite important. For example, the authors report that the prevalence of multimorbidity was 1.9% for those in the youngest age group (20-29 years), and 37.7% for those in the oldest age group (>80 years) (pages 10-11). Published studies in which patient data were extracted from existing primary care databases [1-3] allow to roughly estimate the multimorbidity prevalence in the 20-29-year age group between 5% and 15%, and in 80 year- old patients between 70% and 80%. This underestimation in the disease burden is mentioned in the discussion but it is not addressed in the limitations of the study.

6. Discussion, page 13, para. 2, it says: “…many European [10-12] and American [6, 8] studies…” It should say: “…many European [10-12] and North American [6, 8] studies…” for the same reason explained above in item 3.

7. There are problems with the use of some references in the adequate context in the article.

7.1 References 1 and 2 used in the Background section are supposed to provide support to the content of a paragraph where the problem of persisting chronic conditions is introduced. However, the references deal with inappropriate medication prescription and polypharmacy.
7.2 Reference 12 is not adequate as an example of a study on multimorbidity prevalence in a European country. Laux et al did not report prevalence values of multimorbidity. They reported average number of chronic conditions per patient in Yearly Contact Group by age group.

7.3 Page 12, para.2: reference 2 is again used in the wrong context, this time in a paragraph dealing with multimorbidity prevalence, which is not the subject of the reference. Also, reference 15 is also used here although it is about drug-disease interactions and has nothing to do with multimorbidity prevalence. A recently published review on prevalence studies on multimorbidity [4] may help the authors find references on the subject.

7.4 Page 13, last para. This section deals with multimorbidity prevalence and gender effects. However, references 20 and 21 used in this context do not seem to be related to the subject.

7.5 Page 14, last sentence, reference 15 is used in relation to the Cumulative Illness Rating Scale; however this instrument is not even mentioned in that reference.

8. Figures

8.1 Figure 2, in the y axis of all panels it says “yeras” instead of “years”.

8.2 Figures 1 and 2 are repeated at the end of the document.

9. I believe that the results of this study are interesting and important but they should probably be interpreted differently. I suggest using the term “prevalence estimate” for the results throughout the study. Prevalence studies are useful to inform physicians and decision-makers about the multimorbidity problem in their environment. Presenting the results of this study as a representation of the prevalence of multimorbidity in primary care in Switzerland may send the wrong message in that the problem is of lesser importance than it really is. The prevalence estimates, based on a disease-count method during physician-patient encounters, found in this study warrant the need for further descriptive study using more accurate data collection methods.

References


Level of interest: An article of importance in its field

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.