Author’s response to reviews

Title: Use of potentially inappropriate medication and polypharmacy in older adults: a repeated cross-sectional study

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Author’s response to reviews:

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To the editors
BMC Geriatrics

Dear editors,

Thank you for considering our manuscript entitled: Use of potentially inappropriate medication and polypharmacy in older adults: a repeated cross-sectional study after revision for publication in BMC Geriatrics.

We appreciate the editor’s feedback and the thoughtful suggestions of ways to strengthen the paper further. We have attempted to address the comments in full and enclose a point-by-point list of our responses in the uploaded file below. Please note that the changes in the revised manuscript are marked by Track Changes.

This manuscript has neither been published nor is currently under consideration for publication by any other journal. None of the authors have any conflicts of interest regarding the publication of this manuscript. All authors have read the final revised version of the manuscript and agree on its publication.

Yours sincerely,

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Editor Comments:

1. The sample size of each cohort (15361 and 15945) should be included in Abstract and in Method as well.

Answer: We have now included the sample sizes in the Abstract (p.2 line 12-13) and in the Method (p.6 line 2-3) section.

2. Why did the PIM have a big decrease from 10.6% in 2011 to 7.0% in 2013 considering the increase of prevalence of multiple chronic conditions in the same period? (Odds in Table 5 is 16!). The authors provided some explanations. But the authors may explore the data further to see the causes for the difference by splitting the sample into those overlaps and those not. According to the authors, there were 22% individuals only presented in one cohort. It would be good to explore to see how many were from 2011 cohort only and how many were from 2013 cohort only and identify their PIM.

Answer: The prevalence of PIM, in the population only present in the 2011 cohort (N=3388), was 12.37% (n=419) and those present only in the 2013 cohort (N=3972) was 6.24% (n=248). The individuals present only in the 2011 or the 2013 cohort show the same pattern as the whole study populations with respect of the decreased use of PIM. In the former Table 5 (now Table 4) we analysed the relationship how different covariates from 2011 affected the odds to have PIM 2013 in patients present in both cohorts. It is a logistic regression made in four steps/models that gradually gets more complex and includes more covariates from 2011 affecting the odds to have PIM in 2013. The nation-wide campaign during these years had a great effect on the prevalence of PIM in the small county of Blekinge. The low number of primary health care centres made it possible for the county to be effective in their information camping through academic detailing. We found no other reason why the use of PIM should decline despite the increase in prevalence of multiple chronic conditions.

3. Age groups can be used: 75-79, 80-84, 85-90, 90+. This is the first time for me to see "75-<80".

Answer: We have changed the format to 75-79, 80-84, 85-89, ≥90 throughout the paper.

4. "Introduction" heading should be relabelled as "Background".

Answer: We have relabelled the introduction heading to Background (p.3 line 1)

5. Table 4 is not necessary since it is univariate, and the authors already provided the prevalence of PIM by cohort and medications in Tables 2 and 3.

Answer: We have dropped table 4, (Page 12), and renamed the rest of the tables (p.14 and p. 15).

6. Model A in Table 5 and Table 6 is also not very meaningful. Please drop it.

Answer: We have dropped former model A in both tables and renamed all the models in the tables (p.14 and p. 15)

7. The table titles and the leftmost column of Tables 5 and 6 are really confusing. In my understanding, you are comparing odds of PIM for different categories of each variable. If so, please rephrase them.

Answer: We have tried to better explain that it is four models that gradient getting more complex to explore how different covariates in 2011, in patients present in both cohorts, affect the odds to have PIM 2013 (table 4) and the odds of deprescribing PIM between 2011 to 2013 (table 5).

8. The methodology and the purpose for Table 6 is missing in the Method section.

Answer: We have now added the purpose to the method section (p.9 line, 2-8) together with the methodology.
9. I am not sure "To our knowledge, this study is the first where the prevalence of PIM has been analysed in relation to number of chronic ... " Better to double check.

Answer: We have removed the statement.