Author's response to reviews

Title: Prevalence of inappropriate medication using Beers criteria in Japanese long-term care facilities

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Author's response to reviews: see over
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Dear Dr. Newmark:

Thank you for your letter about our manuscript. Please find attached the manuscript in which we have responded to Major and Minor Revisions listed. The following sheets show our answers to each specific essential point raised by the reviewers.

We had already corrected the English style by using a professional copyediting service as suggested in our previously submitted version. Please find attached the proofreading certificate (the last sheet of this letter). We also went through the manuscript formatting checklist and have confirmed that our manuscript adhered to it.

In addition, we deleted the sections entitled ‘Validity of Beers criteria’ and ‘What adverse outcomes result from prescription of medication listed in the Beers criteria’ as suggested in your letter.

We look forward to your favorable consideration.

Sincerely, yours

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ANSWERS TO REFEREES’ COMMENTS

Reply to Referee 3

Thank you for your comments.
We had already corrected the English style by using a professional copyediting service as suggested in our previously submitted version (the proofreading certificate was attached).

Major compulsory revisions

1. The 2003 Beers criteria contain many new medications and many changes compared to the 1997 criteria, so this indeed could have influenced your findings even if prescribers were mostly unaware of these criteria, simply because many currently used drugs have now been pulled into the inappropriate list. So I'm not sure that the reason you give in the paper for selecting the 2003 criteria rings true. I think it is fine to use the 2003 criteria as you have done, but I think you must express more clearly that it was for the purpose of establishing the current prevalence of inappropriate medication use in Japanese facilities, using current guidelines—but NOT for the purpose of determining whether prescribers in 2002 were following the then-current guidelines from 1997. (If that had been your goal, you should have used 1997 guidelines which are the only ones prescribers could have been expected to comply with at the time your data were generated in 2002.)

We added the description to the Measurements as suggested (p7. 119–21).  

2. The top section on page 13 entitled "validity of Beers criteria" seems misleading. Cross-section data from 3 months prior on a small subset of patients seems insufficient to be deemed a longitudinal examination of use. You really can't tell anything about drug tolerability or reason for use from this analysis, so I would suggest eliminating this section entirely, or at the very least, modifying that subheading.

We excluded the sections entitled ‘Validity of Beers criteria’ and ‘What adverse outcomes result from prescription of medication listed in the Beers criteria’ as had also been suggested by the Editorial Team.

3. I continue to think that you should eliminate the bottom section of page 13 regarding adverse outcomes/falls, given the very small sample size.
Minor essential revisions

4. The abstract needs to mention that you did a regression analysis if you are trying to make the point that you were looking at predictors of inappropriate medication use, and not just prevalence.

The description of a regression analysis was added to the abstract as suggested (p2. l21~p3. l2).

5. Page 7, paragraph 1 and 2, could be reduced to simply refer to Table 1 which shows how many drugs were excluded and why. You could eliminate some duplication between text and tables in this area, and also in the area of demographic results on page 9.

We excluded those descriptions as suggested.

6. Page 9, Results, second paragraph should be moved to Methods. It is methodologic information about how you dealt with external preparations, rather than Results.

The paragraph was moved to the Methods as suggested (p8. l6~9).

7. Discussion page 11, first paragraph, second sentence is an incomplete sentence.

We corrected the sentence (p11. l7).

8. Conclusions section, page 16: This should be more clear that your regression analysis looked at risk factors only for unconditionally inappropriate medications (those that are inappropriate without regard to presence or absence of other diseases or conditions.) You don't report having done a similar regression analysis for conditionally inappropriate (based on presence of a disease or condition), so the writing needs to be very clear about which type of inappropriate medication use you are referring to here.

The description has been added to the Conclusions as suggested (p14. l8~9).

Discretionary Revisions

9. Background, page 3, first paragraph: 'clear criteria' might somewhat overstate the
description of the Beers criteria; they are expert opinion-based, and thus, have been subject to controversy from clinical realms.

The word ‘clear’ has been removed.

10. Page 7, how was 'abnormal laboratory test' defined?

‘Abnormal laboratory test results’ were defined in the MDS assessment manual as laboratory values that were abnormal when compared to standard values. This explanation has been added to the statistical analysis (p8. 117~18).

11. Which drug groups were included in psychoactive drug use?

‘Psychotropic drugs’ meant the drugs determined in the Narcotics and Psychotropics Control Law in Japan. This explanation has been added to the statistical analysis (p8. 120~21).

12. I am puzzled by the Table 4 data for 'stress incontinence', with n/N shown as 89/1028. For your overall sample of 1669, it seems improbable that 1028 actually had clearly established stress incontinence only. Could this term instead have been intended to mean a broader classification for incontinence in general which indeed would be this highly prevalent in this population if urge, overflow, stress, functional, and mixed incontinence were all combined, this rate seems to make more sense. It might be worth checking how this MDS variable is actually used in practice in these facilities, and consider changing the wording from 'stress incontinence' to just 'incontinence' if that were warranted by the data.

As you mentioned, we could not identify the patients with 'stress incontinence', only those with 'incontinence' in general. Therefore, we added this fact to Table 4.

In addition, we corrected several mistakes in our manuscript.

1. Three medications, that is, indomethacin, desiccated thyroid, and methyldopa were added to the Table 3.

2. In the Results, the number of the patients who had chronic constipation and were prescribed inappropriate medications was corrected (p10. 117).

3. In Table 5, the footnote symbol was corrected.
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This manuscript was revised in part by a native speaker of English.

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