Author’s response to reviews

Title: Fall-Related Emergency Department Visits and Hospitalizations among Community Dwelling Older Adults: Examination of Health Problems and Injury Characteristics

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Author’s response to reviews:

Authors’ Response to the Editor and Reviewers

Dear Dr. Aronin and Reviewers:

We really appreciate the overall positive evaluation of our study and helpful suggestions for improving it. We have incorporated these suggestions in the revised manuscript. The revisions are summarized below and major revisions (except deletions) are highlighted in the text for ease of review.

Editor Comments:

1. Please include the email addresses for all authors on the title page. The corresponding author should still be indicated.

RESPONSE: Done
2. Please provide a list of all the abbreviations used in the manuscript. This list should be placed just before the Declarations section. All abbreviations should still be defined in the text at first use.

RESPONSE: Done

BMC Geriatrics operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers.

RESPONSE: Thank you.

Reviewer reports:

Ed Van Beeck (Reviewer 1): You conducted an original analysis comparing clinical and sociodemographic characteristics of fall injuries that resulted in ED visits with or without hospitalization to fall injuries without an ED visit or hospitalization, but I have the following comments:

1. I miss a rationale for the conduction of your analysis. What could your analysis add to the literature?

RESPONSE: Please refer to the last paragraph on MS page 6 for the rationale for our study. We revised the paragraph to further clarify our objectives. We have highlighted the relevant part of the paragraph.

2. I was troubled by the multiple comparisons you made using very long lists of variables and different outcomes. The paper seems to be written as a descriptive report instead of a scientific paper. First of all, I suggest to skip the analysis of table 1, since it compares different outcomes than the other analyses and involves a very high number of noninjured persons. I advise to rethink if all variables are needed in the analyses of table 2 and 3 and to only enter variables in the multivariable model if they are significant after Bonferroni correction.

RESPONSE: Thank you for these constructive critiques and suggestions. Our responses are:
a. Although the descriptive information is helpful, it is not essential; therefore, we eliminated Table 1 in the interest of shortening the paper. We also went through our paper carefully and revised it so that multivariable findings are presented more prominently.

b. For Tables 2 and 3 in the original version of the paper (Tables 1 and 2 in the revised version): While we agree that multiple null hypothesis significance tests inevitably result in Type I errors, our approach has been to report the unadjusted p values for the following reasons: (1) a reader or a researcher conducting a research synthesis can easily adjust the unadjusted values; (2) while there is an increase in Type I error, it is not possible to discern which 5% of the tests are erroneous; (3) p value adjustments, particularly the Bonferroni adjustment, are vulnerable to Type II error; (4) adjustments are only applicable within families, and there is no clear definition of a family of statistical tests (e.g., do all tests that are reported in a paper constitute a family or do only the socioeconomic characteristics fall into a family?); and (5) these ultimately arbitrary decisions have substantial implications for the p value adjustments and consequently, the reported p values.

However, you raise an important issue; therefore, we added a sentence acknowledging the issue associated with not adjusting p values in the Data Analysis section. We cited Gelman & Hill (2008) for readers who want a more detailed explanation of the philosophy of not adjusting p values. We should also note that from our analytical perspective, we are not concerned about multiple comparisons since we almost never expect any of our “point null hypotheses” (that is, hypotheses that a parameter equals zero, or that two parameters are equal) to be true, and so we are not particularly worried about the possibility of rejecting them too often. If we examine 100 parameters or comparisons, we expect about half the 50% intervals and about 5% of the 95% intervals to exclude the true values. With that in mind, there is no need to correct for the multiplicity of tests if we accept that they will be mistaken on occasion.

c. With regard to the suggestion of limiting the variables, we used backward elimination to select significant socioeconomic variables. We did not apply any p value adjustments here as these variables are included as control variables. As such, they do not represent research hypotheses. Furthermore, some guidance in the literature recommends using p values of .20-.25 for variable selection as confounding effects can be better adjusted by the collective effect of control variables (Hosmer, Lemeshow, & Sturdivant, 2013): Hosmer, D., Lemeshow, S., Sturdivant, R. 2013. Applied logistic regression. New York, NY: Wiley.
3. Please try to avoid to describe every single result in the results section.

RESPONSE: We substantially cut reporting of descriptive statistics, and the text is now under 3,500 words.

4. The limitation section of the discussion needs extension. I miss reflections on the cross-sectional design of the study and on the use of self-report data as outcome measures.

RESPONSE: Thank you for pointing these out. We have added them in the Limitations section.

5. The conclusions are very general and have no relation with the specific study findings.

RESPONSE: We have done our best to tie the implications of our findings to the conclusions. For example, based on our finding that nearly three quarters of our sample relied on primary care physicians/clinics for their fall injury, we discuss the need to expand the role of primary care settings in falls risk assessment and prevention (also see Reviewer 2’s recommendations). In addition, given the high rates of EMS use and ED visits, our recommendation is to better train EMS and ED staff (see Reviewer 2’s recommendations as well).

Reviewer 2 (Reviewer 2): PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (brief or other article types: is there a clear objective)?

Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

Yes - the approach is appropriate

EXECUTION - Are the experiments and analyses performed with technical rigor to allow confidence in the results?

Yes - experiments and analyses were performed appropriately
Statistics - Is the use of statistics in the manuscript appropriate?
Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are minor issues

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Yes - current version is technically sound

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: This study is excellent. It uses a national data source and although is primarily descriptive in nature has some very interesting findings. Strengths of this paper include that it is well written, clearly experienced team of researchers, that have addressed an important question. Specific ways to improve: 1) The paper is on the long-side. If there are ways to reduce the length particularly of the results or discussion, I think it would be easier to read:

RESPONSE: We appreciate your overall endorsement of our study. To address concerns about the paper’s length, we shortened it substantially by eliminating Table 1 and a paragraph describing Table 1 contents and shortened other descriptions of descriptive statistics. As noted, the text is now under 3,500 words.

2) Altogether, I agree with much of the discussion except I do agree that EMS may be able to do a brief in-home assessment but would not be able to intervene. The ED is also a good place for falls risk assessment and has more resources including case managers and social workers if there is a need for interventions. Two areas to consider addition to the discussion: 1) the move toward geriatric EDs where this sort of assessment occurs, and 2) the push toward quality measurement of falls risk assessment in primary care at a national level.
RESPONSE: Thank you very much for these recommendations. We have expanded our discussion on the role of primary care, and added a statement regarding geriatric ED guidelines (with relevant citations).

REQUESTED REVISIONS:

As above. Overall, this is excellent.

Note: This reviewer report can be downloaded - see attached pdf file.

If improvements to the English language within your manuscript have been requested, you should have your manuscript reviewed by someone who is fluent in English. If you would like professional help in revising this manuscript, you can use any reputable English language editing service. We can recommend our affiliates Nature Research Editing Service (http://bit.ly/NRES_BS) and American Journal Experts (http://bit.ly/AJE_BS) for help with English usage. Please note that use of an editing service is neither a requirement nor a guarantee of publication. Free assistance is available from our English language tutorial (https://www.springer.com/gb/authors-editors/authorandreviewertutorials/writinginenglish) and our Writing resources (http://www.biomedcentral.com/getpublished/writing-resources). These cover common mistakes that occur when writing in English.

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Declarations

- Ethics approval and consent to participate
- Consent to publish
- Availability of data and materials
- Competing interests
- Funding
- Authors' Contributions
- Acknowledgements

RESPONSE: We have provided relevant information for each item for the Declarations section.

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