Reviewer’s report

Title: The protective effect of helmet use in motorcycle and bicycle accidents: a propensity score-matched study based on a trauma registry system

Version: 3  Date: 22 May 2017

Reviewer: Safa Abdalla

Reviewer’s report:

Thank you for responding to most of my comments. However I respectfully disagree with your statement that statistical significance is the standard method for testing balance of categorical covariates after propensity score matching. The propensity score matching literature and even the literature on randomized trial methodology discourages the use of statistical significance to check balance after propensity score matching or randomization for any kind of variable. Please check out this reference: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3144483/

The reference explains why this practice is discouraged. In it you will also find the formula for calculating the standardized difference for categorical variables. It is obvious from your numbers that the standardized difference would be zero but the manuscript would look much better if you display your results with the correct method. Of course this applies only to the covariates and not the differences in outcome between helmet users and helmet non-users - the latter relies on the odds ratio and its statistical significance.

Another note is that in the conclusion it is better to refer to lower mortality rates etc... rather than reduction in mortality rates ... - reduction implies a change from a baseline level in a longitudinal setting which is not the case here. Also it is better to carefully word the last sentence to make it specific to the outcomes measured in the study, as you only looked for evidence of a protective effect against death, head injury etc... but not all sorts of possible injuries, e.g. some minor injuries may not have presented to the healthcare system and therefore not included in the registry.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.
Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.
I agree to the open peer review policy of the journal