Reviewer’s report

Title: Seat belt use among rear passengers: validity of self-reported versus observational measures.

Version: 1 Date: 19 November 2007

Reviewer: Rebecca Ivers

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This paper aimed to compare self-reported rear seat seatbelt wearing rates to observed wearing rates in Italy, before and after the introduction of compulsory rear seat seatbelt legislation.

Given the known effectiveness of seatbelts in preventing injury and death in the event of a crash, increasing wearing rates is clearly important. Understanding how well self-reported measures reflect true seatbelt wearing rates is also important, as the authors highlight, due to the expense and difficulty associated with conducting observational studies.

Major compulsory revisions:

Specific comments:

1. The background, while covering many of the necessary points, needs some editing. It is written with each paragraph consisting of a single sentence and this needs to be remedied.

2. Given that this is also an open access journal, reference to studies that measure seatbelt wearing rates outside of Europe would be useful, although of course data are scarce. This paper could have a great deal of relevance for low and middle income countries where seatbelt wearing rates are low. Situating the results in an international context would be useful.

Methods:

3. More detail on the legislation would be useful. The time frame for the self-reported surveys is also not reported – need to elaborate on when these were conducted eg Jan-June 2003.

4. The methods seem appropriate, with well designed sampling frames for both telephone and observational studies. Although methods of observational work have been previously described further detail should be provided in this paper. It is not clear, for example, what proportion of all vehicles were observed and whether this occurred without bias.

Results:

5. The authors state that they considered a total of 9138 rear seat passengers – this language suggests some ambiguity – was this the total number of observed
passengers and self-report interviews? This word should be replaced with something more definitive.

Discussion:

6. The very poor response rate for the self-report survey is a major issue for this study. A response rate of 30% means that there is a substantial chance that those who participated are different from those who did not, and in the absence of any information about the non-responders, this is a significant potential source of bias. Although the authors do acknowledge this as a potential source of bias they do not suggest how the resulting bias may affect the results in any depth. Some comment on how the self-reported seatbelt wearing rate may be expected to vary with survey response rate is needed. Given what is known about the type of person who responds to surveys (the healthy volunteer effect), if self-reported wearing rates were measured in a random sample, there may be far less overestimation of wearing rates.

7. The authors also state that observational studies may be more likely to include younger people: however, this statement was not referenced and should be removed. If the sampling strategy was established correctly, the observations should include a random sample of all road users.

8. This study does have some significant limitations which are not sufficiently acknowledged. The most that could be stated is that self-reported seatbelt wearing rates from a selected (non-representative) population are an overestimate of observed wearing rates, but that because of the low response rate, the amount that the rates are overestimated is unclear.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

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.