

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Sex-disaggregated analysis of the injury patterns, outcome data and trapped status of major trauma patients injured in motor vehicle collisions: a pre-specified analysis of the UK trauma registry (TARN)
AUTHORS	Nutbeam, Tim; Weekes, Lauren; Heidari, Shirin; Fenwick, Rob; Bouamra, Omar; Smith, Jason; Stassen, Willem

VERSION 1 – REVIEW

REVIEWER	Eley, R Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia
REVIEW RETURNED	10-Feb-2022

GENERAL COMMENTS	<p>BMC Open Review</p> <p>The authors have utilised a long established and valuable dataset to better understand injury patterns from patients injured as a result of motor vehicle collisions. Specifically they have focussed on sex and age differences in entrapment, injury and outcome. The paper to be very interesting and well written. The discussion is excellent; as I read it I kept crossing out all the points I had jotted down! I offer a few comments, questions and suggestions for consideration.</p> <ol style="list-style-type: none">1. Could the authors please clarify the inclusion criteria? Are the criteria mentioned all “and/or”? Given one criterion is > than or = to 72 hours of admission does this affect the inclusion of patients to the database across the years? Lengths of admissions have been steadily dropping as medical care changes often as a result of advances in techniques.2. Eight years of data were analysed. Major changes have occurred in safety features of vehicles over that period. Aids and devices which were only on the luxury vehicles have become more commonplace. Many cars only had two airbags; now it is common to have far more. The authors discuss some aspects of this in the discussion and note the deficiencies still present in testing. Some additional analysis of the data by year would be very informative.3. In the background the authors state that the data could be used to inform road planning. I don't think this is mentioned again in either the discussion or conclusion. While the value of the data can be envisaged for all the other stated reasons including public health interventions and design of safety systems, the relevance to road planning is unclear. By planning are you referring to location, routes, construction....?4. Do the data permit you to show whether male passengers have a different pattern than male drivers?5. Please state in the results section text that the 450,437 are for all cases in the database and the 71719 were for MVC. While this is clear in the figure these small details in the text are recommended.
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	<p>6. In injury studies there are often high rates of missing data e.g. helmet worn or not? In your study unknown trapping constituted only 2.4% of the total. Completing this data element entry is therefore very good. I suggest a mention of this and perhaps a mention of how the data element is generated e.g. from ambulance notes or asked at triage.</p> <p>7. The sex percentages in the only trapped section of table 1 would in my mind be better represented as that of the trapped total and not of the total cases (74% of all cases were male however only 63% of entrapments were male). That would allow the readers to better compare the figures including those of “driver” (note % is missing in the row heading).</p> <p>8. In table 3 I assume these figures relate to patients with injuries to those sites and that many patients had multiple injuries. Perhaps a footnote would be useful here to indicate this.</p>
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REVIEWER	Smith, Toby University of East Anglia, Faculty of Medicine and Health Sciences
REVIEW RETURNED	15-Mar-2022

GENERAL COMMENTS	<p>Thank you for the opportunity to review this paper. I have very little to comment on this paper as I believe it to have answer the posed research question. The TARN database is very helpful in answering this question. I believe the methods adopted answer the research question.</p> <p>The only questions I have are (1) were the characteristics for your analysis cohort (trapped) similar in demographics to your 'unknown trapping status'? This may be helpful from a completeness of data/understanding missing data perspective. A characteristics table presenting this could be helpful as a supplementary file; (2) I believe the Discussion may be presented a little more clearly. The use of sub-headings and sections rather than convention paragraphs does not really help me personally. A more conventional presentation would be preferable in my mind. The point about not being able to ascertain entrapment due to medical causes is a limitation and should be in the limitation section.</p> <p>I hope these minor points are helpful to consider in a revision as ultimately I am in-favour of this paper.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. R Eley, Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia
 Comments to the Author:
 BMC Open Review

The authors have utilised a long established and valuable dataset to better understand injury patterns from patients injured as a result of motor vehicle collisions. Specifically they have focussed on sex and age differences in entrapment, injury and outcome. The paper to be very interesting and well written. The discussion is excellent; as I read it I kept crossing out all the points I had jotted down!

I offer a few comments, questions and suggestions for consideration.

1. Could the authors please clarify the inclusion criteria? Are the criteria mentioned all “and/or”? Given one criterion is > than or = to 72 hours of admission does this affect the inclusion of patients to the

database across the years? Lengths of admissions have been steadily dropping as medical care changes often as a result of advances in techniques.

The inclusion criteria have been updated to clarify as suggested. A number of supportive analysis (which were not pre-specified) have been included and are included in a supplemental file. The patients included in this analysis are similar across the years (see supplemental file).

2. Eight years of data were analysed. Major changes have occurred in safety features of vehicles over that period. Aids and devices which were only on the luxury vehicles have become more commonplace. Many cars only had two airbags; now it is common to have far more. The authors discuss some aspects of this in the discussion and note the deficiencies still present in testing. Some additional analysis of the data by year would be very informative.

TARN does not capture safety features of the vehicles involved. The patients included in this analysis are similar across the years (see supplemental file).

3. In the background the authors state that the data could be used to inform road planning. I don't think this is mentioned again in either the discussion or conclusion. While the value of the data can be envisaged for all the other stated reasons including public health interventions and design of safety systems, the relevance to road planning is unclear. By planning are you referring to location, routes, construction....?

We have removed this reference as agree it is unlikely to benefit from sex or gender specific data that we have available.

4. Do the data permit you to show whether male passengers have a different pattern than male drivers?

This analysis is included in the supplemental file.

5. Please state in the results section text that the 450,437 are for all cases in the database and the 71719 were for MVC. While this is clear in the figure these small details in the text are recommended.

Updated.

6. In injury studies there are often high rates of missing data e.g. helmet worn or not? In your study unknown trapping constituted only 2.4% of the total. Completing this data element entry is therefore very good. I suggest a mention of this and perhaps a mention of how the data element is generated e.g. from ambulance notes or asked at triage.

We have included this within the final paragraph of the discussion section.

7. The sex percentages in the only trapped section of table 1 would in my mind be better represented as that of the trapped total and not of the total cases (74% of all cases were male however only 63% of entrapments were male). That would allow the readers to better compare the figures including those of "driver" (note % is missing in the row heading).
Update for row 1 (already the case for row 4). Percentage added.

8. In table 3 I assume these figures relate to patients with injuries to those sites and that many patients had multiple injuries. Perhaps a footnote would be useful here to indicate this.
Updated (table 2 and 3)

Reviewer: 2

Dr. Toby Smith, University of East Anglia, University of Oxford

Comments to the Author:

Thank you for the opportunity to review this paper. I have very little to comment on this paper as I

believe it to have answer the posed research question. The TARN database is very helpful in answering this question. I believe the methods adopted answer the research question.

The only questions I have are

(1) were the characteristics for your analysis cohort (trapped) similar in demographics to your 'unknown trapping status'? This may be helpful from a completeness of data/understanding missing data perspective. A characteristics table presenting this could be helpful as a supplementary file;

This is included in the supplementary file.

(2) I believe the Discussion may be presented a little more clearly. The use of sub-headings and sections rather than convention paragraphs does not really help me personally. A more conventional presentation would be preferable in my mind.

Updated discussion section (we have left in 3 paragraph headers where we believe they help with the clarity of the discussion). We have left the paragraph headers underlined but would happily adopt a different style if this was preferred.

The point about not being able to ascertain entrapment due to medical causes is a limitation and should be in the limitation section.

This has been moved.

I hope these minor points are helpful to consider in a revision as ultimately I am in-favour of this paper.

VERSION 2 – REVIEW

REVIEWER	Eley, R Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia
REVIEW RETURNED	06-Apr-2022
GENERAL COMMENTS	Thank you for addressing all my queries and comments.