Title: Motorcycle-Related Hospitalizations Of Adolescents In A Level I Trauma Center

Authors:

Cheng-Shyuan Rau (ersh2127@adm.cgmh.org.tw)
Hang-Tsung Liu (htl1688@yahoo.com.tw)
Shiun-Yuan Hsu (ah.lucy@hotmail.com)
Tzu-Yu Cho (sammiparty@yahoo.com.tw)
Ching-Hua Hsieh (m93chinghua@gmail.com)

Version: 3
Date: 13 April 2015

Author's response to reviews: see over
Dear Editor-in-chief:

We are submitting this revised paper entitled “Motorcycle-Related Hospitalizations Of Adolescents In A Level I Trauma Center” to *BMC pediatrics* to be reviewed and published if eligible. We had revised the manuscript point-by-point according to the kind recommendation of these three reviewers and highlighted those changes in this article. Also, we had re-sent for the English revision by a professional company. We hope those effect could satisfy the high quality requirement of the *BMC pediatrics* journal. We had certained that (1) On behalf of my co-authors, I submit the enclosed manuscript for consideration by the Journal. It has not been published in this or a substantially similar form (in print or electronically, including on a web site), nor accepted for publication elsewhere, nor is it under consideration by another publication. Copyright Transfer Statement would be sent later. Thanks for your effort.

Sincerely Yours,

Ching-Hua Hsieh, M.D., Ph.D

Department of Plastic and Reconstructive Surgery, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University College of Medicine, Taiwan.

*m93chinghua@gmail.com*
Dear reviewer 1

Thank you for your time, effort and professional comments in regard to our manuscript entitled “Motorcycle-Related Hospitalizations Of Adolescents In A Level I Trauma Center” to BMC pediatrics. I have revised the document according to your suggestions and highlighted those sentences in yellow color.

Abstract:
The first sentence is a very general statement with little context – what is this related to, all road collisions and injury, only motorcycle collisions, etc. This could be reworded or at least put into context.
Answer: Yes, the general statement was deleted and the following sentences were revised to make clearer.

Introduction:
The introduction is short, but written well. The first sentence is general and lacks some link to the remainder of the first paragraph. A linking sentence or two should be considered.
Answer: Yes, those description in the first paragraph of the introduction was revised to make it better.

The last few sentences of the first paragraph provide some US statistics of motorcycle injuries, however, there is no mention of the extent of the problem in Taiwan. Some additional information regarding the high incidence of motorcycle trauma should be added to provide the reader with a better understanding of road trauma in Taiwan and the high proportion of motorcyclist death and serious injury.
Answer: Yes, the situation of motorcyclist death and serious injury had been described and discussed in the Discussion/Fourth paragraph/Page 12/Lines 222-227.

The second paragraph introduces the concepts that adolescents are different than adults in a number of respects. I have no doubt that they are different, particularly with regard to behaviour, but this discussion should provide more evidence to support these statements, and some additional discussion regarding how adolescents differ from adults, particularly with regard to their behaviour on the road. Further, the findings of the study do not provide answers to the question of why their injury patterns are different to adults as a result of anatomical or physiological differences, only a descriptive analysis of the differences. Therefore this introductory discussion could be confined mainly to behavioural aspects, particularly given the key findings regarding helmet use.
Answer: Yes, more descriptions of behavior differences were added in the Background/Second paragraph/Lines 22-27. And the discussion about the helmet use had been made in the Discussion/Fourth paragraph/Lines 222-226.
Method:
Does the study sample include hospital admissions, or are there emergency department presentations included?
Answer: Yes, only the admitted patients were included. We had clearly described that in the second point of the inclusion criteria of as “hospitalization for treatment of trauma sustained in a motorcycle accident” Methods/Study Design/Page 5/Lines 49.

The selection of cases could be described more clearly – to include both the adolescents and adults. While I understand that the focus is on adolescents, the collection of data for both groups is the same and comparisons are made within the analysis stage.
Answer: Yes, although we focused on adolescents and the adults were used for comparison. Both adolescents and adults were included and the data were collected. Therefore, we had revised the inclusion criteria in the Methods/Study Design/Page 5/Lines 49-50.

Are there any exclusion criteria?
Answer: All the admitted adolescents and adults were collected and analyzed. No exclusion criteria was implemented. We had added that in the Methods/Study Design/Page 6/Lines 51-52.

What was the process of excluding patients admitted for trauma from other causes?
Answer: We had corrected that more clearly in the Methods/Study Design/Lines 49-52 and 56-60.

Did the sample include only riders or pillon passengers as well?
Answer: The drivers and passengers were included (drivers + passengers = riders). We had described that in the Methods/Study Design/Second paragraph/Lines 73-75. In addition, under your kind suggestion, we had use pillion for describing the passengers in the entire revised text.

Results:
The results section is a little difficult to follow and could benefit from some re-arranging and provision of sub-headings: all trauma patients, 2) patients admitted as a result of a motorcycle collision, 3) comparisons of age groups (by injury severity, injury outcome, helmet use, etc).
Answer: Yes, the sub-headings were added to describe those characteristics and injury severity of all trauma patients, motorcycle-related trauma patients, and helmet use status. The sub-headings were highlighted in the revised manuscript.

The first paragraph is confusing to the reader. I assume that it provides descriptions of all trauma patients, and this is appropriate to do so, however, the authors discuss the findings in terms of the patients being drivers or passengers –are these the motorcycle riders and pillions, or other trauma patients? Is this group all registered patients admitted for injuries, or are they a group admitted for any cause?
Answer: As above response to the query, description of the inclusion criteria was revised, definition of drivers, pillions, and riders was provided, and the order of the descriptions of the results was re-arranged with added sub-heading.

It is difficult to know if the sample included only riders or pillion passengers as well – this needs clarifying in the method section as well as in the results section.
Answer: Yes, all the riders (including drivers and pillions) were included. As we response above, we had indicated clearly in the revised text that all the drivers and passengers were included and the combination of drivers and passengers = riders. We had described that in the Methods/Study Design/Second paragraph/Lines 73-75. In addition, we had used pillion for describing the passengers in the revised text under your kind suggestion.

Description of Figure 1: There is no need to break down the analysis by individual years.
Answer: Because the other reviewer like to preserve the figure and even ask an added description of %. Therefore, we finally decided not to remove this Figure 1, in considering that these data provided may give more information and good sketch of the motorcycle accident. But some revision had been made (Result/Page 8/105-106).

Third paragraph, second sentence: there is a repeat of ‘was found’
Answer: The repeat “was found” was deleted. Thank you for your meticulous inspection.

Third paragraph, last sentence. The authors mention there was no difference regarding helmet wearing status between passengers, suggesting that riders and pillions were included in the sample. As suggested previously, this needs to be clearly stated in the method section and more clearly described in the results.
Answer: Yes, as we response above, the description of the comparison subjects had been revised in the revised manuscript.

What was the proportion of pillions not wearing helmets? Were there significant differences between rider and pillions in either group? What about any gender differences in helmet use?
Answer: The proportion of pillions not wearing helmets is 2.8% for the adolescents and 0.4% for the adults, which could be clearly seen in the Table 2 (as highlighted). In adolescents, 455 of 534 drivers and 67 of 85 pillions had worn a helmet ($p=0.133$). In adults, 1307 of 1464 drivers and 53 of 59 pillions had worn a helmet ($p=0.893$). No significant differences regarding helmet-wearing between drivers and pillions in either group was found. In addition, there was no significant gender difference in helmet-wearing in adolescents or in adults was found. We had indicated in the revised manuscript (Results/Page 8/Lines 118-122).

It would be useful to the reader if Odds Ratios were included in the analyses.
Answer: Yes, the odd ratios were provided in the Methods/Study Design/Lines 72-73, Results/Page 10/Lines 151-159, and Table 3 accordingly in the revised manuscript.
Fourth paragraph: Were there any differences in GCS score between riders and pillions?
Answer: In adolescents, no significant differences in GCS score was found between the drivers (n=547, 14.2±2.4) and the pillions (n=88, 14.1±2.6) (p = 0.737). In adults, no significant differences in GCS score was found between the drivers (n=1506, 14.1±2.6) and the pillions (n=60, 14.0±3.0) (p = 0.788). We had indicated that in the revised manuscript (Results/Page 9/Lines 128-131).

Fifth paragraph: This is a little confusing. In the second sentence, the authors discuss differences between motorcycle riders and the population admitted for treatment of all trauma injury. Why compare all trauma injury here (and not elsewhere)? If the authors wish to include some comparisons between motorcycle riders and all trauma patients, this should be in a separate section. However, I think this is not the focus of the paper, and could be deleted.
Answer: Yes, because our goal is to focus on the comparison between adolescent and adult motorcycle riders, the ISS and NISS comparison of adolescent and adult motorcycle riders with all trauma admitted patients (original line 123-130) was deleted to avoid confusion, that also suggested by the reviewer 3.

Seventh paragraph: First sentence should read ‘Table 4 shows the results of injury outcome by helmet-wearing status among adolescent riders only.’ A question: why did the authors run these analyses only for adolescents and not the adults group as well? If there is justification for not including, this should be noted.
Answer: The analysis of the helmet-wearing of the adults is not included is because the goal of this study is to focus on the adolescents. In addition, in the study adults aged 30-50 years were chosen for comparison, the analysis of helmet-wearing status of these adults may got more confusion for the reader about the adults aged range from different definition.

Discussion:
The discussion is well written and provides good interpretation of the findings. The authors may need to revise the discussion somewhat if some of the suggestions above are taken.
Answer: Yes, we had revised the discussion according all three reviewers.

There are some typographical and grammatical errors, and should be corrected.
Answer: Before submission to BMC pediatrics, the article had been already revised by the English-revising Company Editage. Under request of the first reviewer, we had re-sent the revised manuscript to the same Company for English-revision. Certificate is attached.
Overall
Please ensure there is consistent use of ‘rider’ (not driver), and pillion, and whether they were on a motorcycle or in a motor vehicle.
Answer: Actually, many motorcycle article had use driver to make a differentiation from the pillion. We had indicated clearly in the text that all the drivers and passengers were included and the combination of drivers and passengers = riders. We had described that in the Methods/Study Design/Second paragraph/Lines 73-75. In addition, under your kind
Dear reviewer 2

Thank you for your time, effort and professional comments in regard to our manuscript entitled “Motorcycle-Related Hospitalizations Of Adolescents In A Level I Trauma Center” to *BMC pediatrics*. I have revised the document according to your suggestions and highlighted those sentences in pink color.

1. METHODS: The English was revised according to your kind suggestion
2. BACKGROUND/Second Paragraph: We had changed that to pediatric patients. In addition, we had added some descriptions about the behavior difference between younger and older patients following, under the recommendation of the first reviewer.

3. METHODS/Study Design: We had deleted the sentences as your recommendation.

4. METHODS/Study Design/Second Paragraph: The English was revised according to your suggestion.

5. RESULTS/Patients characteristics/Second paragraph: The sentence “in contrast to the data reported from Western…” had been deleted.

6. RESULTS/Patients characteristics/Third paragraph: The words “was found” was deleted as your kind suggestion.

7. RESULTS/Patients characteristics/Third paragraph: We had checked the sentences and they are right. Analysis of the data regarding helmet-wearing status, which were recorded for 97.5% of the adolescent (it mean 2.5% unknown of the helmet-wearing status of these adolescents, please see the Table 2) and 97.3% of the adult patients (it mean 2.7% unknown of the helmet-wearing status of these adult).

8. RESULTS/Patients characteristics/Fifth paragraph: The description of NISS here is confused and, since it did not carried more information in additional to ISS, we had deleted that. (this is also suggested by the reviewer 1)

9. RESULTS/Patients characteristics/seventh paragraph: Under your kind suggestion, maxillofacial was inserted here, and “maxillary fracture, mandibular fracture, orbital fracture, or nasal fracture” was deleted.

10. DISCUSSION/Second paragraph: The “prior” had been changed to “previous”

11. DISCUSSION/Third paragraph: The “riders” had been added.

12. DISCUSSION/Third paragraph: Sorry, so far we cannot identify any association of environment factors with different trauma pattern of the adolescents and adults in our study or in article research regarding the Taiwan motorcycle accidents. However, more descriptions of behavior differences were added in the Background/Second paragraph/Lines 22-27.

13. DISCUSSION/Fourth paragraph: The sentences were revised to make it complete with authors quoted.

14. DISCUSSION/Fourth paragraph: We had changed to “analysis and draw any conclusions from”, thank you for your kind recommendation.

Before submission to BMC pediatrics, the article had been already revised by the English-revising Company Editage. Under request of the first reviewer, we had re-sent the revised manuscript to the same Company for English-revision. Certificate is attached above. If required, we are very delighted to make further change or revision.

Ching-Hua Hsieh, M.D. Ph.D, FACS
Department of Plastic and Reconstructive Surgery, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University College of Medicine, Taiwan.
123, Ta-Pei Road, Niao-Sung District, Kaohsiung, Taiwan, 833
Dear Ashley Weaver

Thank you for your time, effort and professional comments in regard to our manuscript entitled “Motorcycle-Related Hospitalizations Of Adolescents In A Level I Trauma Center” to *BMC pediatrics*. I have revised the document according to your suggestions and highlighted those sentences in green color.

**Minor Essential Revisions**

2. Does the population of motorcyclists in your sample include road and off-road motorcyclist accidents?

Answer: The population of motorcyclists in the sample include road and off-road...
motorcyclist accidents. We had indicated that in the revised manuscript (Page 6/Lines 59-60).

3. Pg 4 line 12: Please specify that the national population described is the U.S. population.
   Answer: Yes, we had specify that the national population described is the U.S. population. (Page 4/Lines 12)

4. Pg 5 line 27: the grammar doesn’t seem correct in this portion of this sentence: “… vital in integration…”
   Answer: We corrected that as “is vital to integrate the knowledge of pediatric trauma into the trauma system to maximize the provision of services and quality of care delivered” to make it more correct (Page 5/Lines 33-35).

5. Pg 6 line 60: please specify here if you only looked at the AIS severity of each body region or whether the AIS codes (anatomical descriptor plus severity) were analyzed for each body region.
   Answer: Yes, the severity of AIS codes were recorded and analyzed, therefore further ISS could be calculated based on the AIS codes. We had indicated that more clearly in the revised manuscript. (Page 6/Line 68-69)

6. The Results jump around between reporting the results relative to all the trauma patients studied vs the subset that were motorcyclist riders. I suggest dividing the Results into two subsections to separate the reporting of the results from these 2 patient populations. For example in the paragraph on pg 7 lines 80-94, the paragraph starts out referring to the motorcyclist patient group and then ends with the all patient group results.
   Answer: Yes, the results jump may cause disturbance in reading. Therefore, we are going to focus on the comparison between adolescent and adult motorcycle riders. The ISS and NISS comparison of adolescent and adult motorcycle riders with all trauma admitted patients (original line 123-130) was deleted to avoid confusion, that also suggested by the reviewer 1. In addition, the sub-headings were added and highlighted in the Results to describe those characteristics and injury severity of all trauma patients, motorcycle-related trauma patients, and helmet use status.

7. Pg 7 line 76: please specify as driver of motorcycle and passenger of motorcycle. The grammar in this sentence needs some work as well.
   Answer: Yes, we had specify that as driver of motorcycle and passenger of motorcycle. In addition, the entire sentence was revised to make it better for reading. We had indicated that more clearly in the revised manuscript. (Page 7/Lines 86-88)

8. Pg 7 line 83-85: reporting the proportions admitted for treatment subsequent to a motorcycle accident would be helpful here.
   Answer: Yes, the proportions of the patients were added. (Page 8/Lines 105-106)
9. Pg 8 line 123-125: Did you test ISS between the motorcycle rider group vs non-motorcycle rider group? That may be a more meaningful comparison as opposed to comparing motorcyclists to all trauma patients since the motorcyclists make up such a large proportion of the trauma sample. Same comments for the NISS comparison.

Answer: The ISS between the motorcycle rider group (N=635 ISS=9.2±7.6) and the non-motorcycle rider group (N=398 ISS=5.6±5.1) was significant different (p<0.001). We had added the comparison in the Result (Page 7/Lines 96-98).

10. Tables 1-3: I suggest changing the ‘teenager’ label to ‘adolescent’ since that is the term used in the paper.

Answer: Yes, all the teenager in the Tables 1-3 was changed to adolescent. Thank you for your meticulous inspection.

11. Pg 9 Line 137-146: This is a really long sentence and I suggest breaking into 2 sentences.

Answer: The long sentence was breaking into two sentences under your kind recommendation. In addition, the sub-headings were added and highlighted in the Results to describe those characteristics and injury severity of all trauma patients, motorcycle-related trauma patients, and helmet use status.

12. Pg 9 Line 148: change to ‘…shows the results of the analysis’

Answer: Yes, we had changed that according to your kind recommendation. (Page 10/Lines 152)

Before submission to *BMC pediatrics*, the article had been already revised by the English-revising Company Editage. Under request of the first reviewer, we had re-sent the revised manuscript to the same Company for English-revision. Certificate is attached above. If required, we are very delighted to make further change or revision.

Ching-Hua Hsieh, M.D. Ph.D, FACS
Department of Plastic and Reconstructive Surgery, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University College of Medicine, Taiwan.
123, Ta-Pei Road, Niao-Sung District, Kaohsiung, Taiwan, 833