Dear Professors Loder and Riley,

Thank you very much for the opportunity to resubmit our manuscript, titled, “High Profile European Football Matches Are Associated with Traffic Accidents in Asia (BMJ-2020-054280.R2),” for further consideration for publication at the British Medical Journal. At the outset, we would like to thank each of you for taking the time to review this paper again and for providing another round of helpful comments. We very much appreciate them.

Please find below our point-by-point response to each of the comments made by Professor Riley. In our responses, we summarize our solutions to the issues raised and provide page numbers to specifically indicate where each issue was resolved in the manuscript.
Again, we really appreciate your great suggestions and guidance!

Yours Sincerely,
The authors

COVID-19: A message from BMJ: https://authors.bmj.com/policies/covid-19

20-May-2020
BMJ-2020-054280.R1
High Profile Football Matches in Europe Are Linked to Traffic Accidents in Asia

Dear Dr. Yam,

Thank you for sending us your revised paper. Professor Riley, our statistician, has some remaining comments. I hope these will not be too difficult to address. Fortunately there is no major time pressure as we are planning this for the Christmas issue of the journal. Let me know if you have any questions. Professor Riley's review can be found below.

I hope you are all safe and doing well during the pandemic.

To start your revision, please click this link or log in to your account: *** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc.manuscriptcentral.com/bmj?URL_MASK=d1b2db7ee63947529ab382c22b542336

Sincerely,

Elizabeth Loder, MD, MPH

Professor Richard Riley's review:

Comments:
I thank the authors for revising their article to be considered for publication in the BMJ Christmas Edition. The article is improved, and it is useful to have the new analyses of Taiwan data, and the survey. But there are a number of issues that remain to be addressed and clarified. In particular, the presented results are difficult to understand in real terms, as most findings are given as test statistics and p-values, rather than (differences in) effects and confidence intervals (CIs). Also some causal wording remains in some places where it shouldn't. My comments are as follows:

1) There is still too quite strong causal language in places.
e.g. Change 'linked to' to 'associated with' in the title
e.g. Change "Investigate the potential effect of watching popular football games played many time zones away on resulting traffic accidents" to "Investigate the association between watching popular football games played many time
zones away and the incidence of traffic accidents"
e.g. change "This is especially problematic in Asia, because drivers lose sleep
watching high-profile games played in Europe which occur during local times in which they typically sleep, leading to a higher prevalence of traffic accidents" to "This is especially problematic in Asia, because drivers lose sleep watching high-profile games played in Europe which occur during local times in which they typically sleep, which might be a causal mechanism that leads to a higher prevalence of traffic accidents"

etc

Please consider throughout.

2) "This association cannot be explained by weather conditions, time of the year, weekend vs. weekday effects, driver demographics, or underlying temporal trends" – do the authors mean "This association remained after adjustment by weather conditions, time of the year, weekend vs. weekday effects, driver demographics, or underlying temporal trends"?

3) Could the authors clarify/confirm that there was at least one match on actual television on the game days being used in the analysis? And when the 'average market value of football games' on a match day was used, how does this link to the actual match or matches that were shown on TV? For example, average market value may be low, but the values for the subset of TV games may be high. If this was not accounted for in the analysis, then this needs to be detailed as a major limitation.

4) "To account for this trend, we prewhitened the Taiwanese cross-correlation function before estimating coefficients" – what does this phrase 'prewhitened' mean?

5) "Prior to this analysis, we identified a linear trend in market value within the 2013-2018 Taiwan dataset" – the authors justify this was a p-value and correlation coefficient from a linear trend. However, this is merely demonstrated that there is a linear association; I think the authors should be clear here that they did not consider non-linear associations (i.e. there may be no evidence of a linear association, but there may be a non-linear association – but this was not checked).

6) "There was no significant difference between the average number of nights IN THE PAST MONTH that taxi drivers …"

7) Results: "There was no significant difference between the average number of nights that taxi drivers (M = .98, SE = .15) and the general public (M = .70, SE = .12, p = .144) stayed up late to watch games" – we need the authors to provide the mean difference and its CI and its p-value here. The results for each group are useful, but the sentence is about their comparison. Also, to me it looks like there is a big observed difference of 0.28, which might or might not be genuine due to wide CIs. Similalry, after gender is controlled for we are just given a p-value of 0.991, but we need the actual difference estimated please with a CI.

Also write M in full in the whole paper.

8) Results: Paragraph starting with "We next examined whether individuals would be more interested in watching games involving teams with higher (vs. lower) market values …" – the same issue as in point 7 applies in this entire paragraph. The authors provide meaningless F values and p-values, rather than effect estimates and CIs.

9) "Do High Profile Matches Predict Total Traffic Accident Rates" – change to "Are High Profile Matches associated with Total Traffic Accident Rates"

10) Remove 'As predicted' from the last paragraph of page 9

11) "As predicted, market value and traffic accidents had a significant association in Taiwan (estimate = .0002, Δincidence = 1.00) … " – I struggle to follow what 'estimate' means and what the 'Δincidence' means, so I suspect most readers will too. Please explain in actual words, and also provide CIs.

12) So the effect estimate is EXACTLY the same before and after adjusting for potential confounding factors? That is unusual. Are the confidence intervals different? Please add CIs to Table 1. I personally don't find the Z value column relevant.

13) Nearly every result reported gives a Δincidence = 1.00 in the main text; as discussed in the previous review and in the response to reviewers, this is confusing. Authors need to put this into context better, as to how readers should interpret it. Perhaps they need to always give this result in context of a particular difference in the mean value of two match days (one high, one low?).

14) “Do High Profile Matches Predict Daytime Accidents” – change to “Are High Profile Matches associated differently with incidence of Daytime and Nightime Accidents?” Also, in this paragraph there are the same issues that we don’t have differences between groups reported and no confidence intervals.

15) I have no experience of time series analysis, but these parts of the results have again the same issues of focusing on test statistic values and p-values. We need actual measures of effect that can be interpreted please, alongside 95% CIs.

16) The authors suggest moving the times of European matches to ensure they are played early in the morning in Asia. I don’t think this is realistic, and may cause more accidents and problems in local countries, and indeed other time zones, so is not really solving the problem.

17) Lastly - but importantly - it is apparent from the revision that there is no comparison to days where football matches are not played. So we can only compare findings from across days where football matches are played, and ascertain relationships across different days defined by different mean market values of matches. This should be discussed as a limitation.

Minor – Introduction mentions Manchester United playing at 7pm. However, evening matches at Old Trafford and in England are typically played at 7:45 or 8pm, and rarely 7pm.

I hope these comments help the authors make a further revision, to ensure we reach the standards required for the BMJ and its audience.

Best wishes, Richard Riley

Additional Questions:
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Please enter your name: Richard Riley

Job Title: Professor of Biostatistics

Institution: Keele University

Reimbursement for attending a symposium?: No

A fee for speaking?: No

A fee for organising education?: No

Funds for research?: No

Funds for a member of staff?: No

Fees for consulting?: No

Have you in the past five years been employed by an organisation that may in any way gain or lose financially from the publication of this paper?: No

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