Author's response to reviews

Title: Injuries in Aleppo, Syria; first population-based estimates and characterization of predominant types

Authors:

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Author's response to reviews: see over
Dear Editor

Thanks for continuing to consider our manuscript for publication provided we respond adequately to the reviewers comments. And I thank the reviewers for their time and effort in pointing out important aspects of the study that should addressed to improve its quality.

I have revised the manuscript thoroughly in light of reviewers' comments, changes are highlighted to easily trace them. Details of this revision are listed below.

**Reviewer: Eleni Petridou**

1.2 We recognize the possibility of recall and telescoping biases as it is mentioned in the limitations in our study. Unfortunately Syria has no surveillance systems or reliable medical records data for injuries. Thus, we have no mean to guide any adjustment of our estimates in the way you presented in your paper. I have elaborated more on this bias in the discussion (limitations), and discussed why we think that this bias is not substantial in our dataset.

a. A clarification was added to tables 1,2 titles to avoid confusing self-report of respondents with their proxy-report of their households.

b. I think the data from the other less frequent injuries are important to understand the scope and patterns of injuries among the studied population. However, if there is a consensus among reviewers about this point (listing only the three major types of injuries) I will be happy to modify the tables accordingly.

c. Yes only statistically significant results are listed in table 3, as it is noted from the comment under table 3 of all the variables entered in the model.

d. I think figure 1 gives a graphic illustration of the gender distribution of main types of injuries, which is always easier to grasp than pure numbers. Again, if there is a consensus among reviewers about omitting the figure I have no problem with omitting it.

3- We adopted these age groups to be consistent with other reports from the Aleppo Household Survey (9,10), which were selected because they are likely to reflect the age composition of the rather young Syrian society. Also if we use the WHO categories, we will have only two age categories from our respondents (aged 18-65 years) and we will miss a substantial group of participants (18-24).

4- A note about the timing of the survey was added (end of introduction), and another one on the possible effects of seasonality on the results was added to the discussion (limitations).
5- We run the analysis about the relation between injury rates and household number and found no relation.

6- We don't think that there is a significant under-reporting in the older age group (46-65), since the selection of respondents within the household was random (computer generated number) and only those with intact comprehension and mental abilities were invited to participate as described in the methods. I agree that theoretically the older age group can well be more prone to memory problems than the younger ones, but this unlikely to be an important bias in our study given the age range of our participants (18-65 years). I have added a comment about the age frame we used that prohibits characterizing injuries among the elderly (end of limitations).

Minor revisions:

1- I have changed the title to reflect more accurately the type of study (urban), and added labels to the figure and modified the legend accordingly.

2- Abstract is shortened accordingly.

3- A reference for SPSS was added to the references list.

4- I'd rather talk about prevalence rates in cross sectional design.

5- A note was added to the discussion to illustrate that mortality figures are related to deaths following injuries among household members.
Main points

1- I have elaborated more on the nuances of poisoning injuries in the limitations to clarify any misunderstanding. Since we inquired about injuries requiring medical attention, so this type of injury was related mostly to acute gastroenteritis as we know that physicians use the term "food poisoning" to describe such events. This was confirmed during the formative work conducted prior to the survey (9,10). Anyway as I added in the limitations, interpretation of results related to this particular type of injuries should be done with caution. The question was not changed throughout the survey, as we knew from the formative work that we have to deal with the medical jargon used in the target population for outcome definition in this type of self-reported study. The absence of any reliable databases or registries for injuries prohibits validating our data in comparison to more objective assessment (the limitations is expanded to illustrate the nuance about food poisoning).

2- The household data represent proxy-reporting of respondents regarding their household. Understandably, people will less able to remember injuries affecting others unless they are of considerable severity. So as I added in the limitations, the household data represent conservative estimates of the more severe injuries, but are informative nevertheless in confirming the predominant type of injuries in the studied population and their major characteristics in terms of page-gender-location. As I explained in the previous point there was no confusion about food poisoning in the household data since the same respondents reported the injuries in their households using the same common medical terminology.

3- The sample is representative of adults in Aleppo, as we applied a two-stage, stratified, cluster sampling with the target population divided into two strata, formal and informal zones (where residential areas are built illegally on land not zoned for housing) as explained in the methods. This design was mandated by the fact that about half of Aleppo's area and population live in informal zones, which are likely to have distinctive environmental and health profiles. Within each stratum, residential neighborhoods were randomly selected with probability proportional to size (PPS). Within each neighborhood households were selected with equal probabilities, and within each household one adult in
the target age group was randomly selected. Although, the sampling strategy is explained in adequate details in this study, more detailed description can be found in the reports published from this survey (9,10). The slight female predominance in the sample comes from the fact that women in our society are more likely to be found in their homes. However, when the selected subject was not available we did not replace him/her but made a second appointment, but still we had more success in interviewing female-selected participants. I added this information in the methods.

4- The sampling design was opted in order to obtain as much possible a representative sample of adults in urban Syria, as the lack of reliable and updated civil registries prohibit a more straightforward random sampling design. This sampling design will improve the representative ness of the sample but not affect the analysis of data in this case. Anyway, we conducted a stratified analysis by formal-informal strata and found no difference according to the type of neighborhood (formal, informal)

Suggestions to improve the paper

1- I have added anew paragraph in the discussion trying to put our data in context of data collected in similar fashion in other developing countries. I have also added a comment of the representativeness of the Aleppo data to the Syrian population.

2- As mentioned in the previous point 4 we conducted a preliminary analysis of injury rates and type stratified by formal informal (not shown in the study) and there was no substantial difference, so we opted to omit this information to make the tables less cumbersome.

3- Variables contributing to the SES score are mentioned in the methods. I have as well included a table at the end of my response to illustrate more clearly how the score is calculated (this information is also in ref 9). The note about SES-gender relation with injuries is interesting although not significant (see footnotes at the bottom of table 1). This can be explained that men of lower SES can adopt more menial jobs, which will affect their injury probability, while women in conservative societies such as the Syrian are mostly housewives and less likely to be affected by this factor. However, women's driving is increased with increased SES thus may be explaining some of the
week trend of injuries with SES among women. Please take into consideration that these are my mere speculations and not based on actual data.

4- The sampling was discussed extensively in other publications from the survey (9,10) and to a good extent in this study. I have however, extended this section in the methods to clarify the design and sampling further. In terms of comparison with other surveys from developing countries, such sampling design is as mentioned in point 4 for reviewer is usually adopted when random sampling is not feasible because of low quality of residents registries (5)

5- The time period for recovery was based on the Syrian judicial system's definition of disability (injury with consequences exceeding 30 days). The limitation of past year self report is now discussed in details in the discussion.

6- We did not ask whether injuries were intentional or unintentional, we asked about injuries in general and then the type of injuries. Obviously, some of the injuries in the fire arm, sharp tool, or other categories can be intentional, but we had no mean to verify that. Anyway, those injuries were infrequent.

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a. Numbers for men and women in tables 1,2 were added.

b. I don't know what the confidence intervals would add to the Chi$^2$ analysis conducted as explained in the footnotes of the tables (two asteroids for the analysis between gender (rows) and one asteroid for across column (socio-demographic characteristics). Anyway I added to footnote to make this clearer. Adding the CI to the already crumbed table (with number, percentage, and CI) will make it very difficult to comprehend unless redone completely leaving only percentage and CI. I am ready to do that if deemed necessary.

c. Poisoning was different across gender in both datasets (participants, and households) as marked by the asteroid and footnote for poisoning in the two figures.

Thank you very much.

Sincerely

Wasim Maziak, PhD

Director, Syrian Center for Tobacco Studies
<table>
<thead>
<tr>
<th>Socioeconomic status score (0-12)</th>
<th>value 0</th>
<th>value 1</th>
<th>value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>illiterate</td>
<td>≤ 9 years</td>
<td>&gt; 9 years</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td>unemployed, student</td>
<td>employed (manual, private, government), retired</td>
<td>employer, private business</td>
</tr>
<tr>
<td><strong>Items ownership (phone, mobile phone, PC, AC, private car, TV, satellite dish)</strong></td>
<td>≤ 2</td>
<td>3-4</td>
<td>&gt; 4 or private car</td>
</tr>
<tr>
<td><strong>Household members with paid job</strong></td>
<td>0</td>
<td>1</td>
<td>&gt; 1</td>
</tr>
<tr>
<td><strong>Self reported monthly income</strong></td>
<td>&lt; 10,000 SL</td>
<td>10,000-20,000</td>
<td>&gt; 20,000</td>
</tr>
<tr>
<td><strong>Density index (household/rooms)</strong></td>
<td>≥ 2.3</td>
<td>1.5-2.3</td>
<td>&gt; 1.5</td>
</tr>
</tbody>
</table>