Author's response to reviews

Title: Epidemiology of non-fatal injuries among Egyptian children: a community-based cross-sectional survey

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Author's response to reviews: see over
Dear Editor and Reviewer,

I am pleased to resubmit for publication the revised version of MS: 9014496061695349 “Epidemiology of non-fatal injuries among Egyptian children: a community-based cross-sectional survey”. I appreciated the constructive criticisms of the Editor and the reviewers. I have addressed each of their concerns as outlined below.

The most substantial revision concerns the copy-editing of the manuscript. Following the editor and reviewer’s advice, I have used a professional copy-editing service (Edanz Group) and I have followed the journal style.

Response to Referee # 1: Dr. Amy Schneeberg

This paper addresses a relevant question given the burden of childhood injury globally. The large sample size allows for many interesting comparisons. Work is required to better summarize the results and contextualize the discussion to allow these findings to have the largest impact possible in future injury prevention efforts. Some specific comments are made below.

Thank you very much for your kind words about our paper. We are delighted to hear that you think our work will be beneficial. In the following sections, you will find our responses to each of your points and suggestions. We are grateful for the time and energy you expended on our behalf.

Major Compulsory Revisions

1. **Prior to publication this manuscript requires major editing to address issues in grammar, clarity and style. Through the editing process both the results**
and discussion could be made significantly more concise to improve
readability.

We used a professional copy-editing service "Edanz Group".

2. **It is recommended that the authors avoid restating all results in the**
discussion and that this portion of the paper be dedicated to putting findings
**into the context of the current literature and to frame results for the**
application to future prevention programs (one of the stated objectives). It is
recommended that the discussion be re-written not following categorization,
**but highlighting key results, how these results fit together, and how they are**
relevant to the broader literature and prevention efforts.

I have eliminated phrases that are repeated from the results. The discussion has
been re-written to address the criticisms outlined above.

3. **All tables require editing for clarity/readability – the majority of the results**
of this study could be put into a single table. This table could include
**demographic/SES factors as rows and injury type as columns (with 1 column**
**dedicated for overall/total numbers describing the study population)**

Thank you for this suggestion. On trial to put tables (2), (3) and (4) in a single
table, we had too much data to be written in one table. Therefore, we engaged
table (2) and table (3) in the original manuscript into a single table (2) in the
revised version titled (Age and sex distribution of non-intentional injuries among
the study population).
4. **Can the authors indicate how 1977 was determined as the required sample size? how were these households identified as having children with injuries? Does this represent all of the households in Egypt with children with unintentional injuries during a particular time period? Fatal injuries were excluded? Where there any other exclusion criteria?**

The sample size was calculated by using the STEPS sample size calculator of WHO, at a confidence level, 95%, 5% margin of error and 50% prevalence of unintentional child injuries (there is no national studies worked on the same age categories and covered the 4 regions of Egypt) with expected response rate 80% and the number of categories 4 (4 region of Egypt which are different in socioeconomic data). The minimum sample size was 1921. We recruited 21 questionnaires for each student data collector who was 94 students to identify households who have children with unintentional injuries during the last six months prior to the study. This resulted in a collection of 1977 questionnaires. Our survey covering the four regions of Egypt with selection of household with specific inclusion criteria; so it could reflect the situation in Egypt regarding the injuries at the household level.

Yes, fatal injuries were excluded. Other exclusion criteria included children who suffered intentional injuries committed by others (i.e. Stab wounds, gunshot wounds, other physical violence or sexual abuse), self-inflicted injuries and children without a legal guardian. Exclusion criteria were added in the methodology section, page 5, line, 21-24.

5. **How was the questionnaire designed/by whom and how was it validated?**
The questionnaire was designed by a Professor of Public Health, a professional research practitioner and one of the co-authors. Prior to this survey, a comprehensive literature search on previously used questionnaires that could be administered in similar settings was done. The new questionnaire was reviewed by three experts in the field of child injuries, then the questionnaire was tested, by a small scale piloting conducted in four villages of sub-districts in Cairo to detect whether the relevant questions about the study topics were asked and all study aims were covered. The reliability of the our study was improved through conducting training that aimed to minimize the inter-observer variation in experience, and to improve their efficacy in collecting the data. A workshop was held to train the undergraduate students (study investigators) how to implement the survey activities in the field. A brief standard manual was provided to the field investigators that clarified how to present instructions to households and answer questions about individual items.

6. **How much missing data was there?**

   Minimal missing data was present about 2% as the students data collectors were properly trained on the questionnaire.

7. **Was there one injured child per household?**

   The study was designed to include all children who fulfilled the inclusion criteria per household, which enabled us to collect a wide range of information from a large number of populations.
8. **Do you have any information on the households who refused to participate to try to help deduce if there is any sampling bias? Did response rate vary by Governorate for example.**

Refusal of participation was based mainly on security issues (93.8 %); as there were many political and social problems following the Egyptian Revolution in January, 2011. Other causes included issues of privacy and confidentiality (2 %), poor timing (1.5 %), lack of study benefits (1.3 %), previous bad experience (0.5 %), ignorance of health research (0.2 %) and no given reasons (0.7 %). Those reasons were common among rural and urban communities; so it is unlikely that response bias affected our findings.

9. **To put country specific findings into context for the reader a brief description of the Governorates is required (population density, average income or other measure of SES, other important variations).**

Brief description of the Egyptian Governorates was added to Methodology section, page 5 , lines, 8-16. "Egypt is, administratively, divided into 27 Governorates: The four Urban Governorates (Cairo, Alexandria, Port Said, and Suez) have no rural population. Each of the other 23 governorates is subdivided into urban and rural areas. Nine of these governorates are located in the Nile Delta (Lower Egypt), nine are located in the Nile Valley (Upper Egypt), and the remaining five Frontier Governorates are located on the eastern and western boundaries of Egypt. The in-country population in mid-2011 was estimated at 81 million. As a result, Egypt has one of the highest population densities in the world [16].
10. **Pg 11 “Boys are more likely to be active having a higher frequency of participating in all types of activities, and have more curiosities in exploring new things than girls” – do you have a reference to support this statement?**

This statement was referenced on page 12, line 10.


11. **In the limitations/strengths section is indicated that this survey provides a representative sample allowing for generalizability – no where in the article is there evidence that the sample surveyed is representative of all injured children in Egypt. It is unclear how the households to be survey were identified, nor if those households that refused to participate are materially different than those that did participate. More information is required before this can be stated as a strength of this study.**

Thank you for raising this point. In the limitations/strengths section, the paragraph lines 12-14, page 18, in the original manuscript, explains how a household survey (not our survey) provides population-based injury data in a representative sample [33] with ability to generalize findings with cost effectiveness of using these data [29], could be useful. We agree that this phrase might be confusing; so this sentence has been removed in the revised manuscript.
12. **Tables 2 & 3 – what test was done to provide the p value listed?**

Chi square and Fisher’s Exact tests, were used to estimate differences in qualitative variables. It has been added to statistics, page 8, lines,15-16.

**Minor Essential Revisions**

1. **Both percentages and ratios are not required to represent the same data**

Thank you for this point. In the revised manuscript, we have represented data, appropriately in both results and discussion sections.

2. **Page 9 line 17-20 – limitations belong in the discussion section of the paper**

Thank you for your comment. The mentioned lines (17-20) were moved to the discussion page 19, line,13-15.

3. **It appears that injury “type” and injury “cause” are used interchangeably in tables – it is suggested that consistent wording be used throughout**

Thank you for this point. In the revision, we have changed this word into "cause" throughout the manuscript.

4. **Figure 2 “time lapse from injury to medical care” is not required and can simply be summarized in the results section.**

Thank you for this suggestion. In the revised manuscript, Figure "2" was eliminated and summarized in the results section, page 10, lines, 7-10.
Response to Referee # 2: Dr. Angela Watson

General comments

This is an interesting paper on an important issue. There is a well-defined objective that is clearly stated. However, there are some significant changes recommended before publishing. The paper would also benefit from some professional editing.

Thank you very much for your kind words about our paper. We are delighted to hear that you think our work will be beneficial. In the following sections, you will find our responses to each of your points and suggestions. We are grateful for the time and energy you expended on our behalf. As I mentioned, we used a professional copy-editing service.

Major Compulsory Revisions

1. **The authors need to provide a rationale for the age categories provided.**

   At this stage the age ranges are broad and not particularly homogenous.

   It is understood that the age range 6-18 represents ‘school-age’, however, there would still be a lot of difference between the eldest and youngest of this group particular ‘adolescents’ and the young children.

   Age was grouped into 0-2, 3-5, 6-11, and 12-18 years. In the latter group, the sample size was not sufficiently large (4 %) to provide separate estimates for this defined age group; so they were folded into a larger age-group ranged from 6-18 years old. We assumed that the use of narrow age categories can result in small numbers of injuries and unstable rates (*Agran PF, Winn D, Anderson C, Trent R, Walton-Haynes L. Rates of Pediatric and Adolescent Injuries by Year of Age. Pediatrics 2001;108-145*). Several studies used to
include narrow age categories in examining a specific cause of injury such as fractures, drowning, ..etc. While in our study, we aimed to make general epidemiological profile for unintentional injuries among children aged 0 – 18 years old. This item was added in the revised manuscript page 7, line 14-18.

2. **There is a need for more detail on how ‘knowledge’ of first-aid was assessed. In the results, it seems as though this represents parents’ awareness of first-aid as a term not their knowledge of what is appropriate to do. There is a table describing categories the authors have created with the groups ‘proper first-aid’ and ‘traditional methods’. These terms and how the participants were categorized needs explanation.**

Thank you for this point. In the revised manuscript, we have clarified how part (C) of the questionnaire included questions to assess the knowledge, attitude and practice (KAP) of primary carers towards the first aid measures (defined as the assessments and interventions that can be performed immediately with minimal or no medical equipments) [18] of different childhood injuries. It was comprised of 13 simple-choice questions on the knowledge of the treatment of common childhood emergencies. The questions were written using a PedFACT's textbook and an instructor's resource manual published by American Academy of Pediatrics [19]. One point was awarded for each correct answer, with no credit given for unanswered questions or an answer of “Not Sure”. Other questions included the use of traditional procedure-based therapies (defined as therapies that use
various techniques, primarily without the use of medication, to provide health care [20]. This was added in page 7, lines, 3-13.

3. **Results are repeated unnecessarily in the discussion.**

I have eliminated phrases that are repeated from the results. The discussion has been re-written to address the criticisms outlined above.

**Minor essential revisions**

1. **A description of the geographical divisions is required for an international audience.**

The description of the geographical divisions was added to methodology section, page 5, lines, 8-16. It included how Egypt is, administratively, divided into 27 Governorates: The four Urban Governorates (Cairo, Alexandria, Port Said, and Suez) have no rural population. Each of the other 23 governorates is subdivided into urban and rural areas. Nine of these governorates are located in the Nile Delta (Lower Egypt), nine are located in the Nile Valley (Upper Egypt), and the remaining five Frontier Governorates are located on the eastern and western boundaries of Egypt. The in-country population in mid-2011 was estimated at 81 million. As a result, Egypt has one of the highest population densities in the world [16].

http://esa.un.org/unpd/wpp/index.htm)
2. **Need to be careful about using the terms ‘risk’ as this has a particular meaning that is not appropriate when simply comparing proportions.**

Thank you for raising this point. In the revision, we have attempted to deal carefully with the "risk" terminology throughout the manuscript.

3. **Some justification for the age of the mother categories is required and also discussion of the relationship between this and the age of the child.**

Maternal age was classified according to Egypt Demographic and Health Survey (DHS), 2008. It has been added and referenced in the revised manuscript, page 10, lines, 22-23. (El-Zanaty Fatma , Way A. 2009. Egypt Demographic and Health Survey. Cairo, Egypt: Ministry of Health and Macro International; 2008). The DHS stated that the median age of marriage in Egypt is 23 years. In our study, the number of mothers aged \(\leq 20\) years, was only eight; so we selected a group of mothers aged \(\geq 30\) years to include a reasonable number for proper statistical analysis.

The study design and objectives were determined following a comprehensive literature review. Most of the previous research focused on the maternal age and cause of injury as a risk factor for unintentional childhood injuries. Few papers investigated the relation of maternal age at the 1\textsuperscript{st} birth and the cause of injuries during the 1\textsuperscript{st} 36 months of life. That is why we didn’t include this relationship in our results. Moreover, this relation was indirectly discussed through the relationship between maternal age and cause of injury, and the relation between the cause of injury and the age of the child.
4. **A sentence or two is needed to justify why the things listed in lines 17-20 (page 9) were not examined.**

Lines 17-20 (page 9) were justified transferred to page, 19, lines, 15-17.in discussion section. Not all socioeconomic risk factors, already known to be associated with an increased risk of injuries, could be assessed in this study, for example, father's education and occupation, lack of supervision and family income, because most of the Egyptians are conservative to provide personal information, particularly in rural communities, due to their culture and traditions.

5. **Needs greater discussion of the explanation for results relating to age.**

Thank you for this point. In the revised manuscript, we have explicitly discussed the rationale for results related to the child age throughout the discussion section.

6. **Needs greater discussion of the implication of all the results – What are the recommendations for action and intervention based on the study results?**

The implication of all results, recommendations for action and intervention based on the study results were added in page,18, lines, 7-20. In the revised manuscript, we discussed how the results of this study serve to identify the types, circumstances and possible risk factors of non-intentional childhood injuries in Egypt. We, also mentioned that the Egyptian government should prioritize the reduction in childhood injuries caused by falls, burns and RTIs and how our data could also help with a better understanding of group differences such as gender, age and socioeconomic status. We, also examined
the general attitudes and beliefs of parents towards the childhood injuries. Such data could be useful in implementing effective interventions on the family level. Additionally, we mentioned that the prevention measures should consider action strategies at different locations; home, school and street to provide a safe environment. Our research highlighted the need of large-scale longitudinal surveys to investigate all items of unintentional injuries as these surveys usually provide the best data to assess aetiology, correlations and consequences of different outcomes.

**Discretionary revisions**

*I would consider removing the pie chart. It does not add anything (beyond the text).*

Thank you for this suggestion. In the revised manuscript, the pie chart was removed.

Thank you again for your support and great insightful comments. We worked hard to be responsive to them

Best regards,

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