Author's response to reviews

Title: The global distribution of fatal pesticide self-poisoning: systematic review

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Author's response to reviews:

Dear Editors,

The global distribution of fatal pesticide self-poisoning: systematic review

Thank you for sending us the reports by your two reviewers. We were pleased that they both feel our paper is an important contribution to the literature. Neither reviewer requested us to make any major revisions and one reviewer only suggested a discretionary revision [the inclusion of an additional reference].

The following points outline our response to Martin Voracek’s requests for minor essential revisions:

1. Emphasise more the disparity of the proportions of all suicides using pesticides around the world (Europe: estimated 4%; Western Pacific region: estimated 50% or over). This, along with the disparity in populations (Europe versus non-European world regions) explains the respective global burden figures better (pesticides are infrequently used in Europe, which in an international perspective has high suicide prevalence, but not the larger population, whereas pesticides are frequently used in the developing countries of Africa, central and south America, and Asia, most of them having lower suicide prevalence, but with the most populated countries located in these latter world regions.

Our response: We have added the following sentence to the second paragraph of the discussion: “The estimated proportion of suicides attributable to pesticide self-poisoning varies considerably across the WHO’s six regions: in Europe we estimate 3.7% of suicides employ pesticides, the Americas: 4.9%, Eastern Mediterranean: 16.5%, Africa: 22.9%, South East Asia: 20.7% and Western Pacific: 55.8%.” We also highlight these disparities in the abstract, summary points and later in the discussion section of the paper.

2. Mention that hanging is the most frequent suicide method employed, in an international perspective, and the availability of this method cannot be eliminated (which is also true for jumping, another frequent suicide method, which appears
to be more prominent among women than men).

Our response: We are unaware of any definitive evidence that hanging is the most frequently used method of suicide worldwide. In our view the only thing one can confidently state in relation to the most common methods of suicide worldwide is that hanging and pesticide self-poisoning are the two most frequently used methods. We have added the following two sentences to the second paragraph of the discussion:

"Pesticide poisoning and hanging are the two most commonly used methods of suicide worldwide, though precise data on their relative frequency are lacking. An important difference between suicides using these two methods is that deaths from pesticide self-poisoning are considerably more amenable than those from hanging to prevention by both restricting access to pesticides and improving the medical management of pesticide poisoning."

3. Pesticides are not the "most common method of suicide worldwide" (p.4, para 2).

Our response: The full sentence in our paper reads: "The WHO reports that pesticides are now the most common method suicide worldwide" as we are simply citing a statement made by WHO here we have not changed this sentence.

4. Acknowledge that several figures included for this systematic are quite dated (1970s or 1980s; eg, p.9, para 2, or p.11, end of para 3), and that there are disparities in the year (or the period covered) of suicide statistics that make up the database for this review.

Our response: We have now added the following to the second paragraph of the "limitations" section of the discussion: "Fourthly, in some instances the data obtained from the literature predated WHO's 2002 estimate of world suicides by up to 20 years e.g. figures for Nigeria were based on data for 1979-1988 and for Ireland for 1982-1994. Changes in the use of pesticides for self-harm may have resulted in us under- or over-estimating pesticide suicides within particular strata."

5. P.11, para 2: "Pesticides make an important contribution to morbidity and mortality. Better substitute with "mortality from suicide."

Our response: we have made the suggested change

6. Be clear on technical terms for suicidology (suicide attempt and [deliberate] self-harm appear to be used interchangeably and synonymously.

Our response: we have restricted the terms we use to suicide, self-harm and self-poisoning throughout, removing terms such as "parasuicide" and "attempted suicide", although in some cases these were the terms used in the original publications.

7. Emphasise more the evident gaps in the accessible literature on this topic. Out of several hundred reports, located by the literature search strategies and
considered, only 27 could be included as eligible and informative for this systematic review (authors¿ flow chart, figure 1). By the way: this figure 1 appears twice in the manuscript.

Our response: We have done so in the limitations section and highlighted the additional sources of data we did not draw upon in this review (e.g. grey literature, direct approaches to national governments): see paragraph 1 of limitations section of discussion.

8. Introduction and appendix A, description of the literature search strategies, additional potential sources etc¿:

Our response: We agree that we could have expanded our search strategy to approaches to specific countries, statistical yearbooks, IASR representatives etc. This is an acknowledged limitation of this review (see above) and we hope, in the future either we or others will extend and update the review to cover these issues.

We have also made a small number of additional typographical and wording changes to the paper: in particular we have added six rows to Table 1 to give region-specific as well as stratum-specific totals of pesticide suicides. We have also added data for Poland and Sweden to Figure 4 and altered the wording for a number of entries.

We hope these comments satisfactorily address your reviewers¿ concerns and look forward to hearing your decision about our paper.

Yours faithfully

David Gunnell