Author’s response to reviews

Title: Are left-behind families of migrant workers at increased risk of attempted suicide? – A cohort study of 178,000+ individuals in Sri Lanka

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Author’s response to reviews:

Dear Dr Harris,

BPSY-D-18-00452

Are left-behind families of migrant workers at increased risk of attempted suicide? - A cohort study of 178,000+ individuals in Sri Lanka

It is with pleasure that we are resubmitting the above-mentioned manuscript having made alterations to the manuscript in light of the comments by yourself and the reviewers. We have provided a detailed point by point response to the comments at the end of this letter. We would
like to highlight that we have been unable to change the abstract text that appears on the front of the PDF proof as the online revision form does not allow us to do this.

We would also like to highlight that whilst re-visiting the analysis to provide responses to reviewers we discovered a small technical error. We have taken this opportunity to correct this error and whilst it makes small differences to the effect estimates which are presented in table 1, the change does not change any of the conclusions of the paper.

If there are any further queries regarding this paper, please do get in touch. Please note that I will be on maternity leave from January 2019. To ensure a timely response, please copy any correspondence to the senior author Prof David Gunnell (D.J.Gunnell@bristol.ac.uk).

Yours sincerely,

Dr Duleeka Knipe

BPSY-D-18-00452

Are left-behind families of migrant workers at increased risk of attempted suicide? - A cohort study of 178,000+ individuals in Sri Lanka

Editor Comments:

1. Please ensure you include a Background heading in the manuscript.
   This has been added

2. Please clarify who provided informed consent, and why this was verbal and not written, and provide the ethical approval numbers obtained from the research ethics committees of the University of Peradeniya and Rajarata University of Sri Lanka. Please append this information to the ‘Ethics approval and consent to participate’ section of the Declarations.

Literacy has been noted to be an issue affecting research participation. In order to ensure that we did not exclude participants due to their inability to read and give written consent, we obtained verbal consent from an adult representative of the household. The chief village official (Grama
Niladhari) was approached to seek consent for community enrolment. This consent process was approved by two local ethics boards. The ethical approval certificates received from both ethics committees did not have approval numbers, and therefore this information has not been added as requested. If required by the editor we are able to forward the certificates for review.

3. Please ensure that you append, if appropriate, that ‘All authors read and approved the final manuscript’ to the Authors’ contribution section of the declarations.

We have added this statement

4. Please remove the STROBE checklist attachment.

This has been removed

Reviewer reports:

Lay San Too (Reviewer 1):

5. Abstract - Background: please provide information on the knowledge gap i.e. no study has examined whether the risk of suicidal behaviours is greater in family members of migrants than those of non-migrants.

We have added the following text into the abstract:

“No previous study has examined whether the risk of suicidal behaviour is elevated in left-behind family members.”

6. Abstract - Methods: The first two sentences could be clearer, something like this: We used baseline data from a large randomised controlled trial in Sri Lanka (n=178,730, 8% households with a current temporary foreign migrant) and data on hospital presentation due to a suicide attempt up to five years after baseline. Using multilevel Poisson regression models, we investigated whether the risk of suicide attempt was greater in family members of migrants compared to those of non-migrants, and whether the risk varied by sex of migrant and by age and sex of their family members.

We thank the reviewer for this recommendation. We have altered the methods section of the abstract as follows:
“Cohort study using baseline data from a large randomised controlled trial in Sri Lanka (n=178,730 participants; 8% households had a current temporary foreign migrant) and prospective hospital presentations of suicide attempts. Using multilevel Poisson regression models, we investigated the risk of attempted suicide in households with left-behind compared to non-left-behind family members. We also investigated whether the sex of the migrant or the age/sex of the household member left behind altered any associations.

7. Introduction - Background: please provide some lines on the knowledge gap and why it is important to do the study.

We have added the following sentences to the introduction:

“A recent systematic review of the health consequences of parental migration on left-behind children and adolescents concluded that there is a paucity of evidence from LMIC on the impact of emigration on left-behind family members [1]. The review called for more longitudinal studies from LMIC investigating the impact of emigration.”

8. Methods - participants: could the authors give more details on the trial e.g., the purpose of the trial? When did it take place? Would the trial influence suicide attempt risk during the follow-up period?

We thank the reviewer for this comment. We have added the following text into the methods section under “participants”:

“The RCT evaluated the effectiveness of lockable storage boxes in reducing self-poisoning with pesticides in a rural area of the Anuradhapura District between December 2010 and May 2016 and found no effect on risk of suicidal behaviour.”

We have also added the following text under the “Potential confounders/modifiers/mediators” subheading:

“In the main trial findings there were no differences between the risk of attempted suicide between the two arms of the trial [2], but we have taken the conservative approach of adjusting for intervention arm in our analysis.”
9. Methods - outcome: Given low-skilled workers often migrate for 2-3 years, could the authors perform a sensitivity analysis by including only suicide attempts occurred during the first three years after baseline?

There were 468 suicide attempts that occurred in individuals three years after the baseline survey. As requested, we have re-run the analysis restricting the follow-up period to 3 years post baseline. The results were consistent with the main analysis of the paper. The results are presented below but not included in the manuscript as this analysis was not prespecified.

Age & Sex adjusted - IRR (95% CI)
Non-migrant hh 1
Female migrant hh 1.72 (1.46, 2.02)
Male migrant hh 0.86 (0.61, 1.25)
Male & Female migrant hh 0.57 (0.23, 1.40)

10. Methods - outcome: please show the number and % of suicides identified. Please indicate how did the field team select the 25% of households? Did they also ask about suicide?

In response to this comment we have added the following text to the “outcome” subsection:

“Our primary outcome was attempted suicide. For the larger trial, we identified 2882 suicide attempts and 188 suicide deaths, 2371 (82%) of attempts and 160 (85%) of suicide deaths which were linked back to an individual in the baseline dataset.”

“To check that we captured all the suicide attempts and deaths that occurred in the study area the field team went back to 26% of households to ask about suicide attempts that had occurred since the baseline survey. These households were randomly selected.”

11. Methods - potential confounders/modifiers/mediators: please clearly indicate what variables were considered as confounders and what variables were considered as modifiers.

We apologise for not making this clear in our manuscript. We have edited the text in the subheading “Potential confounders/modifiers/mediators” to include:
“The other variables included in this analysis include age, sex, and intervention arm. These were considered as confounders in the first set of models (see below), and age and sex were considered as modifiers in the second set of models.”

12. Household size was not shown in Table 1 but was included as a confounder. Please show household size in Table 1. Please also adjust for the frequency at home in the analysis as this could be a potential confounder.

We have added the household size information to Table 1 as requested. We have not re-run our models including frequency at home as a potential confounder as we have already taken into account the variable frequency at which individuals were present in the household in calculating the follow-up time (see statistical analysis).

13. Please change 'respondent-reported' to 'self-reported' (a more commonly used term).

We have specifically chosen to use the term respondent reported when referring to reports of previous attempted suicide because a household member could report on the suicide attempt of another household member. Therefore, technically not a self-report of previous behaviour. This terminology is consistent with previous publications of this related to these baseline data [3, 4], and therefore we have not made this change.

14. Please clarify ‘intervention arm’ under Table 2 and 3 as this was not mentioned in the text.

We have now clarified this in the methods section in response to reviewer’s comment 8.

15. Results: it would be easier to read the results if the authors use subheading in the section e.g., cohort characteristics, suicide attempt risk and migrant status/sex of migrant etc.

In response to this comment we have added two subheadings to the results section: Primary analysis and Secondary analysis. These heading relate to the analysis strategy presented in the methods section.

16. The discussion is well-written. However, please clarify internal and international migrations.

Thank you for this comment. We have added the following text to the discussion under the subheading “Comparison to other studies”:
“Internal migration is the movement of people within a country, whilst international migration is movement across international borders.”

Reviewer 2 (Reviewer 2):

17. define graduate and non-graduate [graduated from what]

We apologise for this oversight. We have now clarified this in the manuscript and have added the following text to the methods section (subsection “Exposure”):

“For this analysis we therefore identified households with a non-graduate (i.e. no university qualification) foreign employed individual (referred to as ‘migrant households’ henceforth) at the time of the baseline survey.”

18. age was coded into 4 categories yet they say it was a continuous variable. One assumes they coded the four categories as 1, 2, 3, 4. Did they?

Thank you for this comment and the request for clarification. Age was included in most of our models as a categorical variable. However, when we tested for whether there was any evidence that age modified the associations observed we fitted the models with and without an interaction parameter with continuous age and the exposure variable. We have added some clarifying text to the methods section (subsection “Statistical analysis”):

“We did this by fitting models with and without an interaction parameter for age and sex separately (age was treated as a continuous variable for just these models), and then tested which of the two models was a better fit for the data using the likelihood ratio test.”

19. It is odd to read that female migrants had more females left at home while male migrants had more males left at home. Could they comment on this?

Occupation opportunities for unskilled females are limited in Sri Lanka compared to males and tend to be at a lower pay scale. Therefore, if a household has fewer male residents, the earning power (i.e. economic opportunities) for the household is limited in Sri Lanka. The lack of unskilled job prospects for women in Sri Lanka is a driver for females to migrate, and so the observation of more females in female migrant households is in keeping with what one would expect given the context.
20. Were there any completed suicides during the period studied among those left in behind in migrant families?

During the follow-up period we observed 120 suicide deaths, 17 of them were in left-behind household members. We have added this information to Table 1.


