Author’s response to reviews

Title: Determinants of internal migrant health and the healthy migrant effect in South India: a mixed methods study

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Author’s response to reviews:

Dear Editor and Reviewers,

Thank you for taking the time to provide the detailed comments and feedback on our manuscript. We believe that these comments, in addition to our responses, have strengthened our paper. We have provided responses to all of the comments that we received (below). The revised manuscript is attached with changes highlighted in yellow.

Editor Comments:

1. Please include details of the Indian ethical approval you obtained within the 'Ethics approval and consent to participate' section.

Response: The Indian ethical approval process is now detailed with the ‘Ethics approval and consent to participate’ section as well as within the body of the manuscript.
2. We think that the level of detail of the participants, linked to their quotes, could allow identification. We would recommend removing location and presenting age as a range (i.e. male 40-49). In addition you may wish to revise the quotes to remove identifiable information such as location or other specific details. We would recommend amending them in a format like 'I worked as a tailor in [location] [6-10] years ago...' to make it clear to readers what you have modified for confidentiality purposes.

Response: Thank you for this comment and suggestion. The catchment area where our team worked had a population of >20,000 individuals. We have removed panchayat (township) of residence and left the age of the respondent. We have also removed migration destination in quotations to read [an urban centre] to further ensure confidentiality for respondents and their households.

Reviewer reports:

Reviewer #1: This is a well written paper that describes and discusses the results of a mixed methods study of the health outcomes and their determinants of with families of internal migrants in India.

The methods are sound and well described and the authors discuss their meaning in the light of other research on internal and international migration. Important issues such as the existence of not of the Healthy Migrant Effect is discussed as well as the social and other dynamics that may be influencing migrant health. In terms of study design and analysis the study is largely good. As the authors point out, there was not a direct relationship between migration and migrant health, but rather a series of crosscutting issues that the study raises.

Response: Thank you for this positive feedback.

Although there were some health outcomes that were worse among migrant population, these appear to be more related to the type of work, than to the fact of migration and this is where I find that the paper is weak. The evidence presented, at least the qualitative evidence, which is what I am best able to comment on, suggests that there may be other issues that were not raised in the paper, and so I find the title and objectives of the paper seem to be out of synch with some
of the findings. While the main discussion does focus on the topic in question, this issue seems to me less of a 'threat' to migrant wellbeing than other issues that are not discussed. There are also missing background data about the population and interviewees that might be interesting to include.

Response: Thank you for these comments. We have altered our title and objectives to be more in line with our findings. We have addressed your feedback and suggestions below and in particular, we have now included socio-demographic information on the interviewees as well as the migrant members from the households of interviewees. We have also referenced two previous studies we have conducted on the determinants and outcomes of internal labour migration in this context to provide readers with more background data on the population included in the study.

For example, we do not know whether among the labourers there are child workers. Some of the interviewees speak of their 'sons' and it is not clear whether or not these are adults. There is also no mention of gender, and although the study does give lip service to the question of gender, this is virtually absent from data and discussion.

Response: Thank you for this comment. As indicated in the results, the average age of all migrant workers was 27.5 years. When ‘sons’ were referenced by interviewees, the vast majority of these individuals were adults. Most families lived in ‘joint’ (virilocal) households where the head of the household would send his or her adult sons to engage in migrant labour in order to generate income for the household. We agree that the health and well-being of child workers is of critical importance to understanding the connections between health and internal labour migration in the Indian context. However, there was little evidence of child labour migration in this context – possibly because this was not a primary focus of our study. We have also now provided a more fulsome description of the importance of considering gender as a determinant of internal migrant health in South India in the ‘Discussion’ section. In this context, migration was a male-dominated activity, and we did not purposively sample female migrant workers. Consequently, we do not have adequate data to provide an in-depth analysis or discussion of the differential experiences of female and male migrant workers in this setting.

Secondly, many of the workers are clearly involved in extremely hazardous labour in brick kilns, carrying bags of cement and on an assembly line and this paper could also have been seated more firmly within a discussion of hazardous migrant labour. For example, are migrants more likely to
be involved in hazardous labour than non migrants? What policy exists surrounding these forms of labour? Are children involved in these forms of hazardous labour?

Response: Thank you for this suggestion. We have now included a section in our discussion that underscores the unique hazards that migrant workers may face as a result of potentially exploitative labour arrangements or insecure living conditions. Indeed, several interviewees detailed how their migrant work experience or the work experience of a family members was directly connected to poor and often serious health outcomes. Your comment also connects to a key argument in our paper where we state that it is necessary to understand how particular positions (not only industries) that migrant workers hold may influence their health. In this way, we have worked to better situate our study within a discussion of the unique hazards that migrant workers face.

Third, an issue that is not mentioned but which is often a concern for migrant labour is the question of access to health care. This can in itself contribute to poor health outcomes for migrants. It would be good to know whether migrants used local health facilities and why access they have to local facilities.

Response: Thank you for this comment. We agree that access to health care is a crucial issue for migrant workers in India and that this issue warrants considerable attention. In this study, access to health care for migrant workers was not a prominent theme that emerged from the semi-structured interviews. When the issue of access to health care did arise, it was often in relation to a mistrust of rural public health care services. Our team conducted a parallel study in the same area on health seeking behaviour and perceptions of both rural public and private health services and found that study participants were wary of rural public health services and had challenges access private services because of the prohibitive costs associated with private care. When a few respondents did mention health services (public and private) in urban centres that their migrant household members may have had experience with, these services were framed positively because they were being compared to poor rural services. Thus, while we agree that health care is a critical issue for migrant workers in India, we do not have the adequate data to meaningfully comment on this population’s interactions with health services and care in their migrant destinations.

Fourth, the question of social networks is raised, and their effect or not on wellbeing. These networks are not described. It is often the case that migrant labourers lack a good social network,
so it would be interesting to know what sort of support exists and why this support is good for their health. This is one of the main conclusions but the paper actually says very little about it.

Response: Thank you for this comment. In the ‘Results’ and ‘Discussion’ sections, we have now expanded on the pathways through which social networks among migrant workers are used to mitigate some of the challenges associated with securing employment and housing in this context. Additionally, we have also acknowledged how not all migrant workers have access to these networks.

Finally, the discussion of the 'Healthy Migrant Effect' could have taken a more central stage in this paper. There is the general assumption that people will only migrate to something better than what they have at home. Some of the interviewees actually say that their health became worse while working as migrants. Again, this seems to be more an issue of the type of work than the fact of migration, but this whole question could be explored in far more depth.

Response: Thank you for this suggestion. We have altered the title and objectives of our manuscript as well as altered the discussion to ensure that the ‘healthy migrant effect’ is more of a focal point of our paper. We believe that with this new focus at the beginning of our discussion, it naturally leads into our discussion around the need to identify and measure the determinants of internal migrant health. However, as demonstrated by our results, the ‘healthy migrant effect’ does not operate in a linear manner in this context. Rather, as a result of the fluidity of migrant status and the high number of temporary labour migrants, it is difficult to attribute particular health outcomes to migrant work or non-migrant work. In addition, we make the point that the industry that a migrant works in and the position that a migrant holds within a particular industry can shape the health outcomes of this individual.

Overall, I find this paper really needs to be making more bold and strong statements about the relationship between internal migration and wellbeing. It may be the case that the data simply do not stretch to this and if this is the case then perhaps the authors could think of how to take a different angle on their analysis. I would also have appreciated more background data on context and population.

Response: Thank you for this encouraging feedback. We have worked to make bolder statements about the relationship between particular factors associated with internal labour migration and
health outcomes. In particular, we believe our argument that there is a need to better identify, understand, and measure the determinants of internal migrant health provides a key contribution to the literature surrounding the relationship between internal labour migration and health. Thank you also for the suggestion on providing more background data on the context and population. Our team has published two studies that detail the background and context of the population and have referenced these papers at the beginning of the results section to alert readers to this background information if desired.

Pramod R Regmi, MA, MSc, PhD (Reviewer 2): Considering migrants health, both globally and locally in South Asia, this paper is very timely and has certainly added new knowledge in our scientific community. Applying a mix-method, authors have presented data using appropriate statistical tools. The paper is generally well written. However, there are several rooms for improvement before it is accepted for publication. I am surprised not to see any limitation despite this study was carried out in two districts and with labor migrants (mostly from manual workers). Another concern I want to raise here is ethical concern as approval was sought only from external ERB. Authors does not say anything around approval from local ERB. Follow are few points, authors should consider revisiting:

Response: Thank you for this encouraging feedback. We agree that our study is timely with important knowledge to contribute to our understanding of the connections between internal labour migration and health in South India. We have addressed your concerns regarding stating the limitations of our study in addition to detailing the local ethics process below.

In line 89: please remove AIDS. (AIDS does not transmit). HIV/AIDS now are not written together. If needed, suggested term is HIV and AIDS.

Response: Thank you for this suggestion. The text was amended to include HIV and AIDS and we removed reference to transmission.

In line 137: provide details about standard threshold of poverty line (e.g. earning less than $...
Response: Thank you for this comment. We have now included an endnote that indicates that the poverty live in this context is based on the rural poverty line of 27 Indian Rupees (INR) per day as defined by the Indian Planning Commission in 2011.

In line 149: Add a paragraph about socio-demographics characteristics of qualitative participants (n=66)

Response: We have now added a paragraph about the socio-demographic characteristics of the interviewees.

In line 151: Who are local partners? Are they NGOs/CBOs working for labour migrants?

Response: Thank you for this comment. We have now clarified our relationship with our local partner, which was DHAN Foundation. We have also added a paragraph within our ‘Study area and design’ section to provide more context surrounding our relationship with DHAN Foundation under our larger international development research project (RESMISA).

In line 160: Explain how the quantitative data was managed/entered (double entered or % of total data double entered) and analysed (e.g. SPSS)?

Response: We have now explained that all data from the surveys was entered and managed in Microsoft Excel® by the first author and validated by a research assistant. Data were analyzed using Stata® 12 statistical package.

In line 153: Who are the participants of semi-structured interviews? It is not clear. Please explain this.

Response: As indicated above, we have now provided background information of the participants of the semi-structured interviews in addition to the migrant members from the households of interviewees.
In line 164: How many participants involved during piloting tools (you have said 4 households).

Response: We have now clarified that piloting took place with four individuals from four different households in two different villages.

In line 200: Does this study not require an ethical approval from local ERB? See http://jme.bmj.com/content/38/7/428

Response: The Indian ethical approval process is now detailed with the ‘Ethics approval and consent to participate’ section as well as within the body of the manuscript.

In line 209: Inclusion of minor (14 years). How were they approached? What about ethical consideration while recruiting/interviewing minors in this study?

Response: Thank you for this comment. As detailed in our methods section, the female or male household head was surveyed and served as a proxy respondent for all household members. Thus, adult household heads were asked to discuss the migration and health status of all members of their household. To further clarify this point, we have added ‘only adults (>18 years) were asked to act as the proxy respondent’ to the methods section.

In line 220: Please elaborate 'connecting tissue' problem (there are examples later on, see line 282—please bring it forward)

Response: Thank you for this suggestion. We have now brought examples of connective tissue problems forward in the manuscript.

In line 329: n=12 is not several. Replace with few participants

Response: Thank you for this suggestion. We have now replaced ‘several’ with ‘few’.
Response: Thank you for this suggestion. In conducting the semi-structured interviews, there were instances when two individuals were actively engaged in the interview process. In these cases, the two individuals would consult with each other prior to one individual answering a question. In order to recognize the contributions of both of these individuals in the interview process, quotations where consultation between two individuals occurred are attributed to both individuals. We have clarified this process by adding the following sentence to the qualitative methods section: “In cases where two individuals actively participated in the interview process through consulting each other prior to responding to a question (often a male and female couple), quotations were attributed to both individuals involved.”

In your table 1 and abstract, you have mentioned figure of 1217. For wider reader, please explain in your result section how this figure come from.

Response: Thank you for this suggestion. We have now clarified in the text of our results section in the sentence that introduces Table 1 that the n=1217 represents all adults included in the study (both migrants and non-migrants).

I am surprised not see any limitation of this study discussed.

Response: We have now included a limitation section at the end of the discussion section.

In the background, it is beneficial to add trends of internal migrants in India, e.g., figures from most recent Census of India.

Response: Thank you for this comment. There are two main sources of national data on internal migration that form the basis for the majority of quantitative studies on internal migration in India: the census and the National Sample Survey (NSS). Both of these data sources collect information on individuals who engage in migration for employment and non-employment purposes. Despite their broad contributions to understanding overall trends in internal migration in India, both sources of national data are criticized for underestimating labour migration flows.
and failing to account for the complexity of migration decisions and processes. An explicit employment related definition of migration is not used by either data source, and correspondingly, the census definition of internal migration is critiqued for underestimating the number of temporary and seasonal migrant workers (Bird & Deshingkar, 2009; de Haan, 2011; Deshingkar & Akter, 2009). Thus, we have now included an industry-based estimate employed by Deshingkar and Akter (2009) to provide a measure of employment-related migration (estimated to be 100 million migrant workers) in India in the ‘Background’ section.