Author's response to reviews

Title: Maternal and Neonatal Health Expenditure in Mumbai Slums (India): A Cross Sectional Study

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Author's response to reviews: see over
Dear Miss Anderson and Prof Latkin,

Thank you for the opportunity to revise this paper again. We have tracked all changes in the Manuscript and have noted in the Revision Notes how Reviewers’ suggestions and have been addressed, and where in the document any changes can be found.

Should you have any further queries about the article please don’t hesitate to contact me.

Regards,

Dr Jolene Skordis-Worrall
RESPONSE TO REVIEWERS’ COMMENTS:

2) Reviewer #1: Steffen Flessa

- additional references: it would be very helpful to know more about maternal health care and expenditure of maternal health care in India.

  • In the revised paper, a number of additional references were added and two paragraphs written to summarise the findings. These can be found on page 3 of the current version. We would also draw the reviewer's attention to the statement by Navaneetham et al[1] on page 3, (paragraph 2), explaining that India is a diverse country. Although this information is cited primarily to make the case for a more focussed study of maternal health care and expenditure, the same point suggests that it is hard to talk of average behaviours in India – particularly as so few studies have focussed on the urban poor. That said, we did use the findings of Shah More et al[2] and Griffiths and Stephenson[3], to paint as accurate a picture as possible of maternal health care and expenditure in Mumbai. If the reviewer knows of any other published studies looking at maternal health care and expenditure in comparable communities in Mumbai, that would significantly add to the summary already provided, we would of course be very happy to reference them in addition to those already cited.

- intellectual capability: page 6-7 does not really satisfy me.

  • We can only reiterate that our data were validated and checked by our experienced field team. In addition to the explanation proposed in our initial response to this concern, we would also argue that poorer respondents, having a smaller purse, are very conscious of how their money is spent. We have support for this from in-depth interviews, including interviews conducted in the development of a film on these issues, funded by the Wellcome Trust. Our lead author also has a comparable article currently in press that uses more complex expenditure data collected from an urban slum environment in South Africa. No concerns were raised in that setting about the intellectual capacity of respondents to answer the questions. Our lead author also has a comparable article currently in press¹ that uses more complex expenditure data collected from an urban

¹ (Skordis-Worrall, J., Hanson, K. and Mills, A., Estimating the demand for health services in four poor districts of Cape Town, South Africa, International Health, In Press)
slum environment in South Africa. No concerns were raised in that setting about the intellectual capacity of respondents to answer the questions.

- your answer conc. catastrophic spending is not fully reflected in your revised paper.
  - Our answer concerning catastrophic spending appears in the revised paper. Please see page 14 of the current version.

- Figure 2: It still constitutes a function. And it makes a major difference, whether it is linear or U-shaped
  - This is an excellent point and we apologise for our poor handling of it in our initial response. As it happens we are dealing with the two ends of the distribution, i.e. we only compare first and last quintiles, and as such it makes no difference to our findings whether or not the distribution of the data between these points is U shaped or linear. We thus make no assumptions about the distribution of the data between these points.

Reviewer #2: Priyanka Saksena

The only major concern remains the use of the imputation as the authors have chosen to retain the technique in the paper. I am not able to find the Flores 2008 paper which the authors refer to in their response letter with regards to imputation statistics. In general, I think a review by a statistician on the use of imputation in this context may be useful. But I would leave the editorial

- We realise that our initial response to this concern may have caused some confusion and for that we apologise. We followed the technique used in Flores et al[4] for the calculation of catastrophic spending and for the calculation of catastrophic spending. The dataset from which we imputed our data is the same one used in Flores et al. The URL for the Flores paper is provided below. Flores et al did not use imputation methods, but this is a widely accepted and used method in economics. Below, please find links to two other papers, published in respected journals, which have used the same or similar imputation methods. We have listed the use of imputed data as a limitation of our study, but we do not think that doing so invalidates our findings.
2. Other studies that have used a similar imputation technique:

- Gertler and Gruber (2002)[5]:
  http://www.ingentaconnect.com/content/aea/aer/2002/00000092/00000001/art00004
  They apply a similar technique to impute wage using average market wage by province, age, education and sex.

- Leth-Petersen (2010)[6]:
  http://www.ingentaconnect.com/content/aea/aer/2010/00000100/00000003/art00015

- Goldman and Zissimopoulos (2003)[7]:
  http://content.healthaffairs.org/content/22/3/194.full.pdf+html

One other thing to note is that given that previous literature has documented that aggregate expenditures and total expenditures often give very different estimates of OOP (Lu et al, Bulletin of WHO, 2009 & Xu et al, Health Policy, 2009) it may be worth discussing potential biases in the results and/or discussion section

- Thank you for this observation. Our respondents were generally asked to detail disaggregated direct and indirect spending and these responses would not be vulnerable to the downward bias mentioned in the papers cited above. However, respondents where given the option of providing direct expenditure as a total figure if disaggregated direct expenditure was too onerous to recall. These responses would be vulnerable to a potential downward bias. This should have been noted in our conclusion and we apologise for the oversight. We have now added the following text to our discussion of the paper’s limitations, which can be found on page 14 of the current draft: “A final limitation of the study is that respondents, in the case of direct spending only, were allowed the option of reporting total rather than disaggregated spending. These responses may be vulnerable to a downward bias [8-10].”

References:


8. Lu C, Chin B, Li G, Murray CJ: **Limitations of methods for measuring out-of-pocket and catastrophic private health expenditures.** *Bull World Health Organ* 2009, **87**(3):238-244, 244A-244D.
