Author’s response to reviews

Title: A contingent valuation study to estimate the parental willingness-to-pay for childhood diarrhoea and gender bias among rural households in India

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The Editor
HARPS

Re: 1053309619259136 HARPS

Please find below our responses to the reviewers' comments on the abovementioned manuscript submitted earlier to your electronic journal. Should you need any further information, please feel free to contact me.

With best regards

Mo Amin, PhD

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Comments

1. The title doesn’t reflect the major aim of the paper shown in the abstract line 3 ‘gender bias’.

   We have changed the title of the manuscript to reflect the main aim of this paper. The revised title is "A contingent valuation study to estimate the parental willingness-to-pay for childhood diarrhoea and gender bias among rural households in India”.

2. The study a priori assumes that distance of dispensaries and age of children affect WTP values. It would have been much better if these variables were included in the model and then if we could see the results.

   We selected two villages in the District of Chennai where there were two rural dispensaries available. In addition, we chose the clusters of respondents to be at equal distance from the dispensaries (using a radial method) to reduce the contamination of WTP values. We assumed a priori that 1) the presence or absence of a dispensary might alter the parental willingness as the costs of procuring drugs, visiting the doctor would depend on this; and 2) the proximity of dispensary from home could vary the WTP and the use of medical support (For instance, if the dispensary was next door, parents would be more inclined to have the child seen by the doctor, compared to a situation where the dispensary was 5 miles away.

   The age of children was also assumed to be within a limited range (5-7 years) in order to reduce contamination. Data was collected in a way to limit this. We thought that opening the age boundary would introduce favourable bias towards younger children. This was not the hypothesis of this analysis to check whether gender bias was different for different ages. Our objective was to examine if there was difference in WTP between sexes.

3. The distribution of the bid values among respondents is not clear. On page 6 line 3 it says ‘Each respondent was randomly assigned to one of five initial WTP values (Rs. 10,25,35,50, and 65)’. Then it says ‘each respondent received the same initial bid for the question’. How this can be?

   This has been fixed. The study used an initial bid of Rs. 10 and all respondents started at this level of initial bidding. There were three bid steps (Rs. 10, Rs. 25 and Rs. 35). After this, the respondents were asked to state their maximum WTP. This formed the final WTP value in this analysis and this was collected from an open-ended question.
4. It is not clear whether households with only two children (one girl and one boy) are taken in the sample. If this is not the case, the results of the study may be biased (due to omission of variables) since one of the most important variables in ‘gender bias’ analysis, ‘the existence of other sisters or brothers’ in the family, is not included in the regression. This variable is more than the family size variable that the authors presented as a limitation. A family with three children, say one boy and two girls, may be willing to pay more for the boy and this may not be considered as an indicator of gender bias. Even the order of sex matters. Families with boy-girl-girl (from old to young) may differ from families with girl-boy-girl combination in their WTP.

_Households with only two children (one boy and one girl) were selected in the study. This meant that younger families were included in the analysis. In developing countries, one may find the willingness to pay to be a decreasing function of age and the number of children, i.e., WTP diminishes as children grow in age, and as the number of children in the family grows. We did not consider the ranking of the two children in the family by girl-boy or boy-girl, etc._

5. On page 6 (first two lines) we are told that only one respondent is asked to state his/her value of WTP in order to avoid an episode of diarrhea. If the respondent is, say the husband, I am wondering how the education level of his wife (the mother) affects his WTP value. The converse is true if the respondent is the mother of the children. This can be one reason why the difference in the coefficient of mothers’ education is exceptionally high between male and female children while theoretically we expect the other way round. This is also true about the age variable.

_Respondents included both parents. Most interviews started with the male (father) followed by the female (mother). This was largely due to the cultural norms and values practised in India where male family members usually talk first to visitors and once satisfied women are allowed to join. The WTP values from both parents were collected and the mean value was used in the analysis. In most cases, blinding of respondents to reduce influence could not be possible as both parents were standing side by side. However, interviewers asked the respondents to respond without being influenced by anyone else._

6. The coefficients of the doctor’s consultation variable are highly insignificant. Therefore, it may not be reasonable to give the interpretation given in the second paragraph of page 8.

_The inference made in this sentence has been removed from the text._

7. Even if we accept the model as correctly specified (big if due to omission of important variables and inclusion of irrelevant variables), the coefficient of the income variable shows gender bias against boys and not against girls as claimed by the authors.

_We are not convinced that there were any major faults in the study design which might question the validity or reliability of the model used and its implications thereafter. Of course, the study has several limitations and we have listed them in the discussion section. The coefficients of income with respect to male and female child indicate that the WTP for boys decreased as household income increased. However, the results were statistically insignificant to conclude anything solid._