Reviewer’s report

Title: Factors associated with infants' and young children's (6-23 months) dietary diversity in Pakistan: Evidence from the Demographic and Health Survey 2012-13

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Reviewer: Eric Verger

Reviewer’s report:

The main objectives of the article is to first assess the dietary diversity of the infants and young children aged 6-23 months in Pakistan, and then to explore the relationships between dietary diversity and various sociodemographic factors. Although the manuscript does not bring innovative insights for this particular field, it allows to fill a gap attending there was no data about dietary diversity of the infants and young children and sociodemographic factors in Pakistan. Nevertheless, this work suffers from severe methodological issues that need to be addressed by the authors before considering publication. These issues concern the choice of the dietary diversity score, the lack of appropriate command to take into of the complex sample design of the PDHS and the lack of explanation about the representativeness of the sample.

Major comments

Lines 10, 85 to 97, 142 to 147, 155 to 156: Unless the authors could provide extremely relevant justification for using a 15-food group classification for calculating a dietary diversity score, they should follow the guidelines proposed by the WHO and use a 7-food group classification. As highlighted in different reports and publications cited by the authors, the choice of the food group classification affects the correlation between the dietary diversity score and the nutrient adequacy of the diet: the 15-food group classification used by the authors does not seem as optimal as the one recommended by the WHO.

Lines 78 and 79: Whereas the authors clearly mentioned that the PDHS "used a multistage cluster sampling design", they did not provide any information regarding the use of appropriate command or version to take into of this complex sample design in the analysis (e.g. IBM® SPSS® Complex Samples). If the authors did not take into account the complex sample design in their analysis, their results cannot be accepted. Please clarify this point.

Lines 81 and 82: Whereas the authors clearly mentioned that "the analysis was limited to information on infants and children aged 6-23 months", they did not mentioned how this selection differ from the initial sample and if it could affect the representativeness of their results. Attending that I found a report mentioning that the PDHS is a "nationally representative sample of 13,558 ever-married women in all selected households" (http://dhsprogram.com/pubs/pdf/SR208/SR208.pdf), the author should clarify this point and consider to recalculate the sampling weights.
As recommended in the WHO guidelines, the authors should consider studying separately breastfed and non-breastfed children. Because breast milk is not counted in any dietary diversity indicator, it is attended to find 'better' results for children who are not breastfed than those who are breastfed. Stratifying the sample by the breastfeeding status would provide clearer insights.

Other comments

Lines 44 to 45: Explain why this reference is the most relevant.

Lines 55 to 58, 63 to 64: The reference 21 is the same as the reference 16.

Lines 63 to 64: The reference 25 seems very similar to the reference 20. Please explain the added value of citing both references.

Lines 80 and 81: Please provide more information regarding the questionnaires and the design of the study. For example, what is the exact duration of the survey and is there a seasonal effect to take into account in the analysis?

Lines 100 to 101: Please consider to consider the variable "child age" as a categorical variable (6-11 months, 12-17 months and 18-23 months) as recommended in the WHO guidelines. How it affects the results? Same remarks for the age of the mother.

Lines 103 to 109: Please provide more information and references regarding the calculation of the mother's empowerment index.

Lines 116 to 117: Please provide more information and references regarding the calculation of the wealth index.

Line 196: Explain why this reference is the most relevant.

Line 203: The references concerned both dietary diversity indicators calculated at the individual-level and household-level. Because these indicators do not have the same interpretation, the authors should not mix these references.

Line 207: Attending the reference 35 refers to a work where a 7-food group classification was used, the authors cannot compare with their results based on a 15-food group classification. Also, the reference 35 seems very similar to the reference 16. Please explain the benefit of citing both references.

Lines 219 to 220: How this sentence is relevant considering the rest of the paragraph? In addition, how the cited reference support the sentence?

Lines 220 to 221: Please provide references.
Lines 221 to 225: There is a problem of reference. The authors mentioned a study from the Southern Andes and cited a study in UK.

Lines 234 to 238: While the authors explain how low sociodemographic status might affect feeding practices, please explain how changing the behavior of the communities could be enough to improve the consumption of more diverse foods. What about the structural and environmental aspects of the food insecurity: availability, accessibility and stability?

Table 4: Redundant information (R², β (SE) and p-value) regarding the sex of the child (Male, Female).

Table 5: Why the authors present the results related to the level of education whereas there are not statistically significant? Why the results regarding the LHW did not have the same reference in models B and C, respectively No and Yes as reference?

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Please indicate how interesting you found the manuscript:

An article of limited interest

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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