Reviewer’s report

Title: Exposure to cooking fuels and birth weight in Lanzhou, China: a birth cohort study

Version: 2
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Reviewer: Lisa Thompson

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This study looks at data from a large birth cohort in China (n=9,895) to measure association between stove/fuel use (gas, electromagnetic, coal, biomass) and low birth weight, preterm and small for gestational age. Several important confounders were adjusted for in the logistic regression analysis. Biomass was associated with LBW and PT. There was no association between LBW and coal or EM cookers, or with SGA for any stove types. My biggest concern with this study is that authors suggest that the EM cooker is showing an effect on SGA when this is not the case.

• Major Compulsory Revisions
  1. Remove from abstract, since not statistically significant and misleading: A slightly increased risk of SGA was observed for coal (OR = 1.27, 95% CI: 0.90, 1.80) and electromagnetic stoves (OR = 1.27, 95% CI: 0.93, 1.74) users compared to gas users.
  2. In general, was there simultaneous use of multiple stoves?
  3. What % of study participants with EM stoves used other stoves simultaneously? Are those that use EM cookers of similar SES compared to those that use gas stoves? One would think that since they don’t emit air pollutants, EM cookers would be most protective. EM cookers have emerged as important “replacement stoves” so this analysis is timely. However, if households were stove stacking, or using indoor heaters with EM stoves (info not collected in the study), this could be the reason that EM stoves did not show an effect.
  4. In line 302, authors suggest that EM stoves are associated with SGA when they are not. The Roberts study on EM fields is old, and EM fields have been generally refuted as cause of adverse pregnancy and fetal growth. It would be risky, maybe even irresponsible, to suggest that EM may lead to adverse outcomes when data don’t show that.
  5. Line 166: How good is record-keeping/maternal recall around LMP in China? Did authors do a sensitivity analysis of LMP with date of delivery based on ultrasound dates to confirm accurate LMP? Did they extract this info from the charts?
  6. Line 172-174: What % of infants in study were between 22-28 weeks for which you applied the US national reference standard?
7. Results: How preterm were these infants? Give PT in weeks: mean, SD, range, or % early preterm versus late preterm.

8. Results: Discuss C/S by preterm delivery (are we talking C/S of infants at 36 weeks? 36 ½ weeks? Very different than a 22 week PT infant)

9. Discussion: Discuss very high rate of cesarean section in this study and how this might lead to PTB.

10. Line 295-7: State general characteristics about households in China, but can you state % with chimney, % cooking in separate room in THIS study?

• Minor Essential Revisions
  1. Information about ventilation in table 1
  2. Line 198: add were more likely TO BE either younger....
  3. Line 307-8: “Few studies”, but none cited (if there are studies, please cite them)?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests