Reviewer’s report

Title: Socio-economic and demographic Determinants of Under-five Mortality in rural northern Ghana

Version: 2
Date: 27 June 2014

Reviewer: Brett Nelson

Reviewer’s report:

I congratulate the authors on their important efforts in understanding socioeconomic factors related to U5MR in northern Ghana. An important step in addressing U5MR is understanding its root causes.

In this study, the authors analyze baseline survey data among 3,975 women who had ever given birth. With chi-square analysis and bivariate and multivariate regression, the authors identify factors associated with under-five child death among these women.

Significant, robust work has been previously accomplished on this topic of socioeconomic factors related to U5MR, as outlined in the authors’ Background. Nevertheless, there are still uncertainties among the studies, and the authors’ findings do contribute to our understanding, particularly among rural communities in west Africa.

Major Compulsory Revisions

1. I agree that this is an important and interesting study. However, as you correctly state in your Background (e.g., Lines 118-126), significant work has been done on this topic. If possible, clarify further in your Background how your study differs, or if not different, how important it is to add to this established literature (e.g., still uncertainties or disagreements in the literature, important to confirm others’ findings, your study population or approach is unique, etc.).

Minor Essential Revisions

2. Title: Standardize capitalization within the title

3. Abstract: The authors use both present- and past-tense verbs in the abstract methods. For example, “We use baseline survey data...” and “…we ran a logistic regression...” Please standardize verb tense (e.g., past tense).

4. Abstract, Results section: Change “…age of woman...” to “…age of the woman...” or perhaps even better to “…age of the mother...”

5. Abstract, Results section: Add “at the time of delivery” after “35 and 49”

6. Abstract, Results section: Consider adding p-value after the provided odds ratio.

7. Abstract, Conclusion section: The word “so” is rather colloquial. Change to
“therefore”

8. Line 89: The updated U5MR figure is now 6.6 million, not 6.9. Please update and change reference to latest UNICEF, WHO, World Bank report which provides this number.

9. Line 94: Change the subject of this sentence to “Children in sub-Saharan Africa” (and re-write sentence accordingly) rather than stating that “sub-Saharan Africa ahs the highest risk of death in the first month of life.” Also in this sentence, reword “as at”.

10. Line 101: Capitalize “Millennium Development Goal”

11. Line 113: Change “other” to “order”

12. Line 113: Consider rewording “accelerate the rate of under-five mortality decline” to “accelerate the decline in under-five mortality rate”

13. Lines 122-123: Place period after “…27]…” and start new sentence.

14. Throughout the paper: Replace the several occurrences of “whiles” with “while”

15. Line 125: Capitalize “Demographic and Health Survey”. Add “the” before “richest”

16. Line 126: Add “the” before “poorest”

17. Line 127: Change “has” to “have” (plural subject = “factors”)”

18. Throughout the paper: The authors regularly mis-use the semi-colon (;) (e.g., Line 128, etc., etc.), intending it, I believe, to be a colon (:) before a list. Please correct. In fact, in many instances, even a colon before a list of items is not necessarily. A semi-colon should only be used between two related (clarifying) but independently complete sentences: e.g., “The car was a bright yellow; it was the color of the sun.”

19. Lines 128-131: Please re-word or divide this very wordy sentence – in fact, I think it’s an incomplete clause.

20. Line 146: Move reference 11 earlier in this paragraph (assuming this is the reference for the numbers provided earlier in this paragraph – otherwise, provide another reference for those numbers).

21. Line 152: Change “rain feed agriculture” to “rain-fed agriculture”

22. Line 156: Change to “baseline”

23. Line 164: Change “is” to “has” and change “face” to “faced”

24. Lines 160-168: Provide a little more information on when (years) and by whom (GHS? Partners?) the GEHIP is being conducted.

25. Line 166: Change to “programS”

26. Line 171: Again, when was the survey?

27. Line 176: Decapitalize “The”

28. Line 177: Change to “…used, WITH all women…”

29. Line 183: Add apostrophe to mothers
30. Line 186: I don’t understand “recorded” in this context. Could you re-word this sentence?
31. Line 191: Change to “experienceD”
32. Several places in the paper: change “in to” to “into”
33. Line 192: Add “categories” after “three”; end sentence after “35-49)” and start new sentence; and add apostrophe to “mother”
34. Line 196: Change to “categorIzed”
35. Line 199: End sentence after “self-employed” and start new sentence
36. Line 202: Correct the spelling of “recoRded”
37. Line 203: Change “took” to “made”
38. Line 223: Remove “before the survey was carried out” (redundant with beginning of the phone)
39. Line 224: End sentence after “survey” and start new sentence
40. Line 230: Change to “experienceD”
41. Lines 230-231: Change to “years”
42. Several places: Change “divorce” to “divorced”
43. Line 235: Change “were reside at” to “reside in”
44. Line 240: Remove “observed to be”
45. Line 241: Change “take” to “make”
46. Line 245: Why weren’t others covered under the national health insurance plan? What other coverage did they have?
47. Line 250: Change to “detailED”
48. Several places: The authors regularly cite in the paper and in the tables the p-value as “p=0.00.” Technically, the p-value should not be zero. Therefore, please change these to “p<0.001”
49. Several places: If included with the p-values (although I don’t think it’s necessary), the “at 95% CI” should be WITHIN the parentheses with the p-value.
50. Line 268: Change “Traditional” to “traditional”
51. Lines 272-273: Remove the editorializing comment of “rather interesting”; this interpretational statement would be okay in the Discussion but is not usually included in the Results.
52. Line 276: Add apostrophe to “respondents”
53. Line 294: Change to “attainED”
54. Line 298: Use numbers (don’t write out) for numbers >10, such as 11
55. Line 301: Correct the spelling of “divorced”
56. Multiple places: correct the spelling of “enrollment”
57. Line 304: Change to “enrollment IN”; change to “…contraceptive use ALSO did not confer…”
58. Line 305: Change to “odds OF”
59. Line 322: Remove “discussed below”
60. Line 323: Change to “bivariate” (not capitalized)
61. Line 331: End sentence after “age)” and start no sentence
62. Line 334: Change spelling to “enhanceD”
63. Lines 336-340: Include for the readers the relevant odds ratios again in parentheses so as to quantify effect
64. Line 343: To which women is the study in Ethiopia referring? All women? Or those less educated. Please briefly include more details in this sentence.
65. Discussion: I would not recommend including new figures in the Discussion. Figures (and tables) are usually introduced in the Results section. In fact, I would delete these two figures altogether since their data can be effectively introduced in the existing tables.
66. Line 345: Add period to end of sentence
67. Line 349: Reword “makes sense to feel” – this is too colloquial
68. Lines 361-363: The first sentence of this paragraph is an incomplete sentence. Remove period at end of sentence and replace it with a comma.
69. Line 365: Change to “changeD” and “experienceD”
70. Line 370: Change to “….and 26], this study…”
71. Line 371: Change to “seem to convincingly show the result of this…”
72. Line 373: Reword “results is sparingly”(?)
73. Line 374: Remove “probably”
74. Line 376: Change “base” to “basis”
75. Line 377: Remove “fairly”
76. Line 379: Replace “gray area” – too colloquial
77. Line 381: Change “These may” to “This may”
78. Line 382: Change to “husbandS”
79. Line 384: Remover “as shown in our results” otherwise this sentence is a circular argument
80. Lines 389-390: Reword this sentence for improved clarity
81. Line 391: Change to “previousLY”
82. Line 394: Change to “and affording the mother adequate time to care for her newborn and regaining strength….”
83. Line 400: End sentence after “[13]” and start a new sentence
84. Lines 40-405: Incredibly long and wordy sentence. Please re-word.
85. Line 406: Change to “settingS”
86. Line 407: Start new sentence at “Therefore”
87. Line 413: Remove “at”

88. References: Many of the references are not correctly standardized. Please refer to Author Guidelines for details.

89. Table 1: Under contraceptive use, change “None response” to “No response”. And why is this the only section where “No response” is documented? Certainly other sections had non-responses? If so, let’s present the data consistently in each section of the table.

90. Table 1: In each section of the table, where appropriate, list the items from most prevalent to least prevalent (e.g., religion, place of residence, district), and use the same descending order in Table 2.

91. Table 2, headings: Use consistent capitalization for “YES” and “No”

92. Table 2: As per above, do not list p-value as zero

93. Tables 2 and 3: Do not use unfamiliar abbreviations such as “JHS” and “SEC” and “(res)” unless defined somewhere – in which case, be consistent across all tables.

94. Table 3, heading: Remove brackets around “95% CI”

95. Figures: As discussed above, consider deleting Figures 1 and 2.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**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.