Author's response to reviews

Title: Correlates of stunting among children in Ghana

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Author's response to reviews: see over
Dear Editor,

SUBMISSION OF REVISED MANUSCRIPT 1877372161055388 - Correlates of stunting among children in Ghana

I write to submit our revised manuscript for your consideration and publication. We have discussed the usefulness of the conceptual framework in the discussion section. Also, the conclusion has been improved. We have included a point-by-point response to the editor’s comments below. Once again, we wish to thank the reviewers and editor for their comments.

Yours faithfully,

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Responses to editor’s comments

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Discussion

The second sentence of the introduction of the discussion section has been improved to read: The findings of the study suggest that some distal, proximal, and intermediate factors are significantly associated with stunting among under 5 children in Ghana. We discuss the correlates of stunting among under 5 children according to the concepts used in the framework.

The discussion has been reworked to reflect the conceptual framework. We have organised the discussion under the three broad factors – distal, proximal and intermediate factors used in the framework. The following specific changes have been made:

Distal factors

Paragraph 3 has been reworked and moved to paragraph 2 to read: Ethnicity plays a significant role in stunting among children under 5. The study observed some variations in stunting among ethnic groups, with children from the Ewe ethnic group been less likely to be stunted compared to Akans. Our study corroborates the finding of Badasu [15] and Gyimah [16] who have reported that there are variations in stunting among ethnic groups in Ghana. These variations could be attributed to the fact that some ethnic groups in Ghana have beliefs which prevent pregnant women and infants from eating some
foods. These foods may contain some nutritional elements needed for the optimal growth and development of the child.

**Paragraph 4 has been reworked and moved to paragraph 3 to read:** ‘Region of residence’ was significantly related to stunting. For instance, it was observed that children from the Eastern Region were more likely to be stunted compared to those from the Western Region in model 1. The differences between region of residence and stunting could be due to the differences in values, beliefs, culture and conditions that exist within each region or ethnic group [13].’

**Paragraph 5 has been reworked and moved to paragraph 4 to read:** ‘Household wealth status’ was significantly correlated with stunting among under 5 children in Ghana. We observed a significant relationship between household wealth and stunting, with children from richer households being less likely to suffer from stunting. This finding corroborates observation made in previous studies regarding wealth status of child’s household and stunting [17, 18, 19]. This relationship could be explained by the fact that rich people are able to afford good living conditions that may improve the child’s health including nutrition [20].

**Intermediate - Maternal factors**

**Paragraph 6 has been reworked and moved to paragraph 5 under the sub-title**

**Intermediate – maternal factors to read:** ‘Mother’s age’ was found to play a significant role in predicting stunting among children in Ghana. The results of the study is consistent with a previous study which revealed that mothers who give birth at very early age are
likely have children with low weight at birth [13]. For instance, children whose mothers were aged 25-34 years were less likely to be stunted compared to those aged 15-24 years. This could be as a result of the fact that young mothers require adequate nutrition to fully grow into adults; thus, they struggle with their children over the little food the mother eats [14].

*Paragraph 7 has been reworked and moved to paragraph 6 under the sub-title Intermediate – maternal factors to read: ‘Number of children in household.* We observed that children from households with 5-8 children were more likely to be stunted compared to those with 1-4 children. This could be due to the large level of consumption of resources in the household [10, 22]. The findings of our study corroborates previous studies which have observed that children with many siblings are more likely to suffer from malnutrition [14, 21].

**Proximal**

*Paragraph 1 has been reworked and moved to paragraph 7 under the sub-title Intermediate – maternal factors to read: ‘Age of child* was found to be a significant determinant of stunting with children aged 24 months and above being more likely to be stunted. This finding is consistent with previous studies which show that stunting is high among children of that age and this situation has been attributed to the fact that these children have already been introduced to complementary feeding [7].
**Conclusion**

The conclusion has been taking to the next level with the inclusion specific culturally appropriate interventions and policies. The second sentence of line 5 onwards reads: ‘To improve the nutritional status of children in Ghana, factors that are significantly correlated with stunting in Ghana should be addressed. Firstly, the effects of the distal factors like ethnicity and region of residence could be reduced by putting in place culturally appropriate interventions and policies to promote the consumption of nutritious foods which are not consumed by nursing mothers and their children. These interventions and policies should aim at changing peoples attitudes towards some of societal values, beliefs and culture. Secondly, pro-poor policies should be implemented to reduce the effect of household wealth on stunting. Thirdly, programmes and policies aimed at delaying age at child birth and promoting small family sizes should be strengthened to minimise the effects of intermediate factors on stunting among under 5 children in Ghana. Finally, programmes aimed at promoting proper child feeding practices should be strengthened to reduce the effect of complimentary feeding on stunting among children under 5’.