Reviewer’s report

Title: Prevalence and predictors of under-nutrition among school children in a rural South-eastern Nigerian community: A cross sectional study

Version: 0 Date: 28 Mar 2017

Reviewer: Mark Anthony Myatt

Reviewer's report:

General comments

There is value in publishing this type of data. It can help in constructing review articles of global estimates and distribution of nutritional deficits. Also, publication in a peer-reviewed journal has advocacy value.

The article is reasonably well-written. Some editorial attention will need to be paid to getting English tenses and plurals correct and consistent. This is not a major issue.

One concern is the use of appropriate procedures (i.e. to a complex sample). This may or may not have been done. The authors should be encouraged to re-analyze their data using appropriate methods if required. WRT: "Are the methods appropriate and well described?" ... This needs to be confirmed.

Abstract

Not reviewed as this may change when the article is revised.

Background

Line 53: "anthropometric failure" is an odd term. "public health problem" needs some qualification. I think the authors mean that there are high prevalence’s for both micronutrient deficiencies and anthropometric deficits amongst schoolchildren in different parts of Nigeria.

Line 57: The prevalence of "wasting" in the two populations (17.8% and 15.9%) are not very different from each other. The prevalence of wasting is so high that we should suspect some body shape issue is affecting this. The prevalence numbers should have "%" after each.

Line 58: The sentence starting "Prevalence of ..." is redundant as the prevalence’s are reported in the previous sentence.
Lines 74: "target" might be replaced with "targeted" or with "a target".

Line 80: "one major" might be replaced with "a major".

Line 89: By "thinness" do the authors mean wastedness defined by WHZ or some case-definition using BMI/A? I think this needs to be clarified.

Line 91: "determined" might be better as "determine".

Methods

The approach of finding significant bivariate associations for entry in to a logistic regression model is fine. A little more detail on how the logistic regression models were refined (e.g. by stepwise backward elimination of non-significant variables) would be good.

Line 94: Suggest that "descriptive" is removed since identifying "predictors" is usually described as "analysis" rather than description.

Line 99: "public and private" might be better as "state and private sector" since a "public school" actually means an exclusive and expensive private schools in some countries (e.g. the United Kingdom, India, and Australia).

Line 100: "free living" is not defined.

Line 108: The "Sample size and sampling technique" section is OK. I am a little concerned that an expected design-effect is not given. The sample size was calculated to estimate a proportion (close to 50%) with useful precision. This is not the same as being able to detect "predictors" with a given power. It may be useful to add something about the size of effect (prevalence ratio or risk ratio) that might be detectable with the sample described. I think it should be clear that identifying "predictors" is a secondary aim of the described work.

Line 134: Were fasting and feasting days avoided? What this not an issue?

Line 151: Was the complex samples module of SPSS used to analyse the data? I think the sample is complex (i.e. multi-stage) and this should have been accounted for during data-analysis. Failure to do so may have resulted in biased estimates and will very likely have resulted in confidence intervals with coverage quite different from the nominal 95%. If the sample design was not accounted for during data-analysis then the authors should be encouraged to re-analyse their data using appropriate methods.

Line 164 and elsewhere: Proportions such as "Majority (63.1%) ..." should have 95% confidence limits given. Same for results like monthly income.
Line 170: Need "%" after estimates. Estimate need confidence intervals. It would be interesting if "inadequate" were more nuanced with (e.g.) proportions in mild, moderate, and severe deficiency.

Line 174: Need a proportion for obese.

Line 178: What tests are associated with the given p-values?

Line 183 and after: COR needs to be defined.

Line 194 and after: AOR needs to be defined.

Line 199: Show the AOR and 95% CI for sex and stuntedness.

Line 208 to 209: Better to give estimates of effect sizes. What test does the p-value refer to? More detail is needed.

Discussion

Line 237: Can we have a reference for the VAD and absenteeism?

Line 250: These findings (i.e. proportions of HH income) are tricky since income may be lower in female-headed HHs so the proportion of income spent on food will be higher for the same quantity of nutrients.

Line 265: The M:F rations for undernutrition are also noted globally.

Table 1: Can we have 95% CIs on estimates? I think the RNI definitions shuld be given either in the text or in footnotes to the table.

Table 2: Can we have 95% CIs on estimates?

Table 3: I think the table can be simplified by specifying the risk category. For example, sex of HH head could be give as female and the OR given.

Table 4: I think the table can be simplified by specifying the risk category. For example, sex of HH head could be give as female and the AOR given.

Table 5: I think the table can be simplified by specifying the risk category. For example, sex of HH head could be give as female and the AOR given.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Unable to assess
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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