Author’s response to reviews

Title: Awareness and factors associated with reported intake of folic acid-fortified flour among women of reproductive age in Ifakara, Morogoro region, Tanzania: A cross-sectional study

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Author’s response to reviews:

Editor Technical comments

1) Main text sections. 
Please rename ‘Introduction’ to ‘Background’. Please also provide a ‘Conclusions’ section for the main text.

Response : Done as advised

2) List of abbreviations 
Please move the list of abbreviations to immediately after the main Conclusions section, to be followed by the Declarations section.

Response : Done as advised

3) Ethics approval and consent to participate declaration 
Please include this declaration in the Declarations section and document: 
- the name of the specific ethics committee that approved the study
- the reference number for the ethical approval given by the committee that approved the study
- a statement on consent.

Response : Done accordingly
4) Funding declaration
Please indicate in the declaration the role of the funding body in: the design of the study; the collection, analysis, and interpretation of data; and the writing of the manuscript.

Response: Done as advised

5) STROBE guidelines
In accordance with BioMed Central editorial policies [https://www.biomedcentral.com/getpublished/editorial-policies#standards+of+reporting], could you please ensure your manuscript reporting adheres to the STROBE guidelines for reporting observational studies. Please therefore refer to the STROBE guidelines and checklist when completing your revision, amending the manuscript text where appropriate. Please include a completed STROBE checklist as an additional file when submitting your revised manuscript.

Response: STROBE template attached

Reviewer 1 comments and responses

Lines 34-35 – Review the sentence according to my comment in lines 114-115.

Response: We have defined “intake” in our methodology, however, we have added the term “reported”

Line 63 (57) – I suggest the authors review the sentence. So, the authors could mention all countries that have mandatory fortification with folic acid. Actually, more than 86 countries worldwide mandatory folic acid (FA) fortification of at least one cereal grain to prevent neural tube defects.

Response: Yes agreed, the countries have been mentioned

Lines 113-114 (117-18) – The authors need to elucidate how the awareness of folic acid and awareness of existence of fortified flour were assessed. Was it only one simple question (YES/NO)? For example, the researchers asked about the place or other additional information if the WRA said YES for “heard of folic acid”. Please, detail the questions.

Response: Awareness was assessed by simple one question YES/NO though we asked follow up questions like source of information or heard about “what” regarding folic acid/folic acid fortified flour
Examples of questions
1. Have you ever heard of folic acid?
   i. Yes
   ii. No............................................If No/Don’t know/Not sure skip to question number 4
   iii. Don’t know/Not sure
2. If Yes, what have you heard, read, or seen about folic acid? (Circle all that apply)
   i. It can prevent some birth defects
ii. It is a vitamin needed for cell growth
iii. It is a type of acid found in some household products that should be avoided in pregnancy
iv. It is good for pregnant women
v. It needs to be taken before pregnancy
vi. It needs to be taken during pregnancy
vii. It is good for health
viii. Don’t remember
ix. Others (specify).................................

3. If Yes who gave you the information on folic acid? (Circle all that apply)
i. Health care providers
ii. Magazine/news papers/books
iii. Radio/television/internet
iv. Family/friend

Lines 114-115 (116-20)– The authors need to elucidate the use of the term “intake”. Did you have a list of foods? When we discuss about dietary intake (e.g. foods), we expect to know about specific foods and them frequency and/or quantity using some dietary assessment instruments. The authors considered a general question. I really suggest the authors review the term throughout the manuscript, not only the paragraph. In my opinion, the authors can use “awareness of fortified flour intake”. In addition, it is not clear if the participants used or consumed the fortified flour products. Maybe they used the product to prepare some dish but they did not eat it. Please, certify what the participant answered.

Response : We did not use dietary assessment instruments to assess food intake. The study aimed at assessing reported intake of folic acid fortified flour. We asked participants of any fortified wheat flour products taken/consumed including samosas, buns, chapattis e.t.c and porridge/stiff porridge of mentioned/remembered/observed fortified maize flour brands within seven days prior the survey. Although, questions regarding frequencies/number of days per seven days taken were asked, we counted intake (reported) as having taken fortified flour products at least once. Therefore the main interest was consumption of products, not use of products to prepare some dishes but not eating them.

We did not intend to measure “awareness of fortified flour intake” but awareness of folic acid and folic acid fortified flour. These two variables were incorporated with others to assess factors influencing intake (reported) as defined. Therefore we are keeping use of ”intake” but one should be aware that this wasn’t quantitative, an opportunity for other studies.

Questions asked include
1. In the past seven days have you eaten any of the wheat flour products? (like bread, buns, chapatti, cake etc)
i. Yes
ii. No........................................... If No skip to question number...

2. If Yes, How many days have you eaten any of the wheat flour products in the last seven days?____________________Go to question ...
N.B. As noted in manuscript background all wheat flour is essentially fortified in Tanzania as it is produced and supplied by giant millers, though few in some parts do use locally made flour. We excluded this by asking them on the source of flour (bought or self/locally made etc)

Lines 120-121 (125-26)– I do not think it is adequate to consider these two terms for the same use. The fortified flour is used in a general context for fortification. I suggest the authors to standardize the use of folic acid-fortified term flour throughout the text.

Response : Yes, agreed and changed

Lines 155-160 – I would like to know the information about “Intake of fortified flour” considering the awareness of folic acid (Table 1) and awareness of existence of folic acid fortified flour (Table 2). I suggest the authors add this variable in these tables. In addition, I recommend the authors add the variable “awareness of existence of folic acid fortified flour” in table 1.

Response : It is not clear; would you want to see how many among whom were aware of folic acid/folic acid fortified flour had taken up fortified flour? On the other hand, would you want to see a separate table with information regarding intake? (Available in table 3). These are stand-alone informations as the aim was to assess awareness of folic acid/folic acid fortified flour and intake of folic acid fortified flour separately, not to compare intake among those who were aware and those who were not at this level. That is why we incorporated awareness information as variables in multivariate analysis to get this information

Line 161 – I am not sure if the term “fortified flour intake” included maize and/or wheat flour. Please, elucidate this issue.

Response : Yes it does include. In fact fortified maize flour availability is smaller compared to wheat flour. To be sure whether a woman had consumed fortified maize flour we asked her if she could mention or remember the brand used and for those who had flour packages with them we observed for presence of fortification logo

Lines 187-188 (190-91)– I suggest the authors review the sentence “We found high intake of fortified flour…”. See my comment above (lines 114-115).

Reviewed the sentence and currently it reads “Two third of participants reported consumption...”

Response : As noted in lines 114-15

Lines 190-191 – I suggest the authors review the sentence. The authors did not appropriately assess the intake of fortified flour to declare this sentence. See my comment above (lines 114-115).

Lines 196-199 (200-03)– Don’t you think that could be an orientation failure by health care/professionals during antenatal visits? In my opinion, I do not think the combination with iron could lead the low folic acid awareness. I suggest the authors review the discussion.
Response : Yes, we agree. We do think we have a similar idea. Orientation failure by health care workers might have contributed to low awareness, due to merely concentrating on functions of iron and little on folic acid during health education provision about FEFO at antenatal clinics. Therefore, we retain the sentence and add “health” education.

Lines 200-204 (208-09) – Was there some dissemination of fortification program after the implementation of the mandatory policy with folic acid? I suggest the authors discuss this issue in the paragraph too.

Response : Yes, Point taken

Line 240 (247) – The outcomes did not permit to conclude this sentence. I suggest the authors review it.

When the authorities plan the mandatory fortification program, they choose a staple food to add the nutrient. However, this action does not guarantee the effectiveness of program. Although the scientific literature reports the effectiveness of FA fortification programs in increasing folate status and the consequent prevention of NTDs, it is important to point out that further researches are needed to assess the effectiveness of this mandatory fortification program in Tanzania. Maybe the authors could explore this issue in discussion and conclusion.

Response : Noted and worked upon

TABLES
Table 1 – Review the table header. The table is not comprehensible. Add the values related to the category NO in the variable “Awareness of folic acid” and statistical analysis should be indicated in footnotes. See my suggestion below.

<table>
<thead>
<tr>
<th>Total population</th>
<th>Awareness of folic acid</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;Heard of folic acid&quot;</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>N (%)</td>
<td>n (%)</td>
<td>95% CI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n (%)</td>
</tr>
</tbody>
</table>

Table 2 – Review the table. I suggest the authors show the n (%) and 95% CI for the variables. Statistical analysis should be indicated in footnotes.

Response : It’s not likely that we may indicate 95% CI of both Yes and No responses for the variables we use, we are not running variables’ Yes / No frequencies. This is a two by two table (exposure against outcome). We have indicated cOR (95% CI) instead

Table 3 – The authors did not show the adjusted odds ratio for “Heard of fortified flour” variable. Please, elucidate this missing.

Response : This variable was eliminated midway during analysis, as it did not show any significant change of the log likelihood ratio.

Reviewer 2
Tanzania has had all flour mills producing folic acid fortified flour since around 2011 or soon thereafter.

This paper was a study of attitudes and knowledge and consumption of folic acid fortified wheat and maize.

I have one serious issue with the paper. It says in the abstract that the implications from the study is that increasing awareness of folic acid fortified products was needed. I would take the contrary inference and the one that you used in line 241-243 (248-50):

"This underscores the importance of mandatory folic acid fortification, which ensures that most WRA are reached, influencing reduction of the micronutrient deficiency and NTD burden." This is the message and should be the sentence in the abstract. I would down play health education. It is expensive and it is has been shown repeatedly not have little effect. Public health supplement programs reached only 20%. So I suggest the only conclusion from the paper is that mandatory folic acid fortification is highly effective way to reach the populations and prevent spina bifida, anencephaly, folate deficiency anemia, lower homocysteine concentrations. That idea should be in the abstract. It is highly unlikely that public health education would improve prevent . Yes, as a complement to fortification supplements or health education might provide very rarely an improvement in prevention, at least as these programs have so far been implemented.

I think you need a missing citation.


Response : Noted, point incorporated in abstract

2. I would think it important to say it is important to do blood folate studies rather than consumption surveys or programs to promote fortified foods. An important limitation of your study is that you did not have blood folates as was done in the Noor et al study.

Response : Done as recommended