Author’s response to reviews

Title: Public awareness and perception of Ghana's restrictive policy on fatty meat, as well as preference and consumption of meat products among Ghanaian adults living in the Kumasi Metropolis

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Author’s response to reviews:

Thank you for the opportunity to submit to BMI Nutrition. We appreciate the reviewers comments and have responded to all of them under each comment in red font.

BMC Nutrition operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers.

Reviewer 1 report:

Response: We thank the reviewer for her thoughtful suggestions for strengthening the presentation of the paper. We have amended all of these statements, which are HIGHLIGHTED RED in the attached revised manuscript.

Judith Ongaji Kimiywe (Reviewer 1): Line 28 - Replace WE with The study.

Line 31 - Need to qualify cross sectional is it descriptive, analytical etc

Line 32 - Specify study site whether rural or urban or both

Line 45 - Local vs Import please clarify what you mean especially by imports (is it from out of the country or from other parts of the country)
This manuscript presents the results of a cross-sectional study in which authors sought to assess perceptions about, and potential impact of, a policy restricting the importation of various meat products, which was implemented in Ghana in the early 1990s. I have the following comments:

Major comments
1) The title with "....perception of impact" ....."and its impact on...." is confusing. I suggest authors should re-word.

Response

Title has been revised as suggested

2) Abstract:

a. Line 28-30 is not really an objective, but a description of what was done with the sample. The sentence itself seems awkward and not easily understandable. Authors should state the objective of the study more clearly.

Response

The objective has been revised and reworded to make more meaning as below:

This paper sought to determine public awareness and perception of the policy’s enforcement and impact, as well as the general attitude towards fatty meat, preference and consumption of meat types.

b. Line 39: Here and elsewhere, please write P=0.000 as P<0.001.

Response

Well noted and corrected across the manuscript.

c. Lines 44-45: It is unclear what these percentages refer to. Are these not the same people being referred to by the 67.1% in Line 43?

Please see the explanation below.

The sentence there refers to proportion of the total participants who gave various responses. For instance: 58.9% were aware of the restrictions, 81.2% support the restrictions (obviously some were not aware that such restrictions exist but said if such restrictions exist, they support it).

Then on the question of whether the public is aware, 57% of the participants said they think there is a general low public awareness and when asked if they felt the restrictions were enforced, only 15% said they felt the restrictions were enforced.

Response

The abstract is revised to make these lines more meaningful.
d. Line 47: What are these percentages referring to? Is it the participants or how available/cheap imported meat products are? Please re-word the sentences in a clearer way.

Response

We have now clarified this in the manuscript. All participants were asked if they considered the fat content of meat they bought. This had nothing to do with whether they were aware of the restrictions. This was however to test their own attitude towards fatty meat.

e. Conclusion: First, I do not think the first sentence of the conclusion is related to the supposed objectives of the study. Second, I think authors overstated the possible impact of the observed good level of public aware, strong support and positive attitude, etc. If anything, these can only contribute to addressing obesity, but cannot by themselves "address the obesogenic food environment.....".

Response

We appreciate the reviewers concern, and have revised the conclusion to reflect the comment and ensure that the impact of the policy is not overstated as below:

There was a good level of public awareness, strong support and positive attitude towards Ghana’s restrictive food standards on meat. Similar policies which limit access and availability of ‘unhealthy’ food should be considered and enforced in order to address the growing obesity and Non Communicable Diseases trend.

3. Line 132-135: As said for the abstract, these are really not objectives, but a description of what was done.

Response

The objective has been rephrased as shown below: The aim of this paper is to determine public awareness, perceptions and attitudes towards the policy’s implementation, enforcement and impact. It also sought to assess the general attitude, preference and consumption of meat types by Ghanaian adults.

4. Line 157-164: Authors should describe the random selection of participants more clearly. For the benefit of readers, what is the size (eg, in sq km, number of houses or population) of a typical suburb included in this study? How were the 30 participants in a suburb randomly selected out of the population in a suburb? Were there any exclusion criteria?

The recruitment methods have been more elaborately explained in the manuscript as shown below:

Response
The suburbs were purposively chosen. Participants should be 18 years and above. In each suburb, study enumerators went from house-to-house to recruit participants. In each suburb participants were recruited on first-come-first-service basis from house-to-house visits until 30 were reached. Recruitment was also done by approaching people on the road side and visiting some churches in the suburbs.

The methods section has the following participants recruitment as a subsection from lines 183-202.

5. Line 165-166: The sample size calculation seems inadequate to me. A power of 80% to detect what? What is the calculation based on? Why is precision or margin or error missing for this type of study?

Response

The sample size calculation is explained in detailed in the revised manuscript from lines 174-180 as below:

The sample size equation \[ \text{Sample size}=\frac{Z_{1-\alpha/2}}{\sqrt{p(1-p)}}/d^2 \] (21) for cross sectional study (qualitative variable) was used to determine the sample size. Where, \( Z_{1-\alpha/2} \) is standard normal variable at 5% type 1 error \((p<0.05)\), which is 1.96, \( p \) is the expected proportion of participants aware of the restriction set at half of the population, 50% or 0.5 (as this was unknown) and \( d \) is the precision/absolute error of 5% and at type 1 error of 5%. Using the above formula, a sample size of 384 was calculated for the study, although data was eventually collected from 377 participants.

6. Discussion: The discussion could be improved, and authors should avoid repeating what was said in the results: For example, the first paragraph just repeats the results, and appears unrelated to the study objectives. Also please see the repeats of the results in Lines 279-281, 294-295, 302-304, 308-310, and 317-320. Much of the conclusion (Lines 333-340) also repeats what was already said in the results. In Line 328-329, I don't know what associations were tested in the analysis.

Response

This has been sorted, repetitions removed and results presented already in the results section taken out.

7. Table 2: Is the last column (labeled "Total") showing p-values? Was it an objective to compare the body composition of males versus females? I suggest there should be no such comparison/hypothesis testing here.

Response
We agree that the paper does not set out to compare gender. The table has been removed and means of these parameters for the total population added to Table 1.

8. Table 3: Please summarize this table or make it more concise -- I don't think that repeating the questions here (eg, If yes, why ?......; If no, why....) is helpful.

Response

This has been sorted. Take note that by removing Table 2, Table 3 now becomes Table 2

9. Table 6: Showing these numbers for weekly, fortnightly, monthly, and occasionally (unless there is a special reason for it) is boring and uninformative. It seems to me that simply showing percentages who consume (weekly/ fortnightly/monthly/occasionally) versus those who Never consume would be much simpler and yet serve the same purpose.

Response

The essence of the FFQ is to describe patterns of intake in terms of frequency. Combining weekly consumers to occasional consumers is not appropriate because they vary.

Response

We have taken part of the advise and combined weekly and fortnightly into one category labelled more than once a month, kept once a monthly, and combined occasional with never. This now Table 5.

10. Table 7: Please indicate in the title, etc, that these are participants' perceptions. Also, most (>72%) of the participants were aged 18-35 years. This means that in the early 1990's (almost 27 years ago) when Ghana implemented the meat restriction policy, a large number of the participants were very young or not even born, and therefore did not know what the situation was then concerning meat. So, how appropriation is it to interview such people about the outcome or impact of the policy? Also please check the row percentages, eg. why are the percentages in the first row 102.8 (substantially greater than 100)?

Response

We have changed the title to indicate that these are participants perception on the impact of the restriction. We agree that some participants may not have been born when the policy was implemented. But since its implementation there have been regular enforcement efforts.

11. Table 8: I am concerned that this categorization may lead to spurious findings: for those participants (eg <25 y old) who were born after Ghana implemented the policy, we cannot say
what type of meat they ate then (before the policy) compared to what they eat now..... Also, I don't know how mean percentage muscle mass (yes/no) and whether or not participants consider fat content of meat are related to the policy.

Response

We have considered this point and realised it is better to leave out Table 8. Removing it does not change the manuscript and the findings presented.

Major comments

1) Line 141-145: I think authors should not repeat Line 132-135 here.

Response: This is corrected

2) Line 156: Please spell out KNUST in full at first mention.

Response: This has been corrected

3) Line 166: What is meant by "public aware here? Is it the participant's level of awareness, or what the participant thinks is the level of the public's awareness?

Response

This is what participants think of the level of public awareness

4) Line 169: Please spell out FFQ in full at first mention.

Response: This has been corrected

5) Line 169: What is the standard layout for FFQs?

Response

The FFQ used had 7 meat types (local versus imported beef, chicken, turkey tail, pork, mutton, goat meat and processed meat) and 5 options for frequency of consumption: Weekly, Forthnightly, Monthly, Occassionally and Never.

6) Line 204: It is not clear what the "health profession (50%)" means in this sentence.
Response

It is supposed to be health problems and this is corrected in the revised manuscript.

7) Line 287: Please check the 960%
it is supposed to be 60%. Checked and corrected

Uriyoan Colon-Ramos (Reviewer 3): Dear authors,

This is an interesting paper but requires reframing of the article and tightening of the discussion.

For example, this is not a policy evaluation - there is no control group or baseline.

Response

We have rephrased the title and worked further on the discussion based on the comments from all reviewers. We recognise that this paper itself is not an evaluation and have taken note of that in the introduction, description of methods and discussions. We have also included limitations of the work in the discussion.

Also, it is unclear why diet and body composition are being assessed vis a vis the evaluation of acceptability/attitudes. A program impact pathway or another conceptual framework to clarify the thought process here would be useful.

Response

We sought to assess awareness of the public on the policy, and whether they thought it had any impact. We also assessed the general attitude towards fatty meat, which had nothing to do with the policy and related that to some body composition parameters, which may be influenced by diet in general and meat consumption. These have now been clarified in the revised manuscript. Lines 125 to 149 further explain the thought process and conceptual framework.

In terms of introduction, it is critical to expand description of the policy - was it intended to impact health? If so, which outcomes specifically? How is it monitored and implemented? Authors seem to imply that it only affects imported meats, and the analyses use this stratification - but the rationale is unclear. The aspects of non-discriminatory and innovation of this policy should be described.

Response

We appreciate the reviewer’s concern, and have sought to clarify in the text that there is a whole paper which evaluated the policy process, including rationale, and context, policy content, implementation, enforcement and outcomes. Issues of non-discriminatory and innovation were
all assessed in the earlier study. We have expanded the introduction to include this from 125-149.

Response

We have made a reference to this in the methods of this study and provided a brief write up on it, without repeating what has already been published from lines 152 to 161.

The contribution of fatty meats to Ghananian diet should also be described here.

Response

Little is known about the contribution of fatty meat to the Ghanaian diet. However, the policy was passed in response to concerns that fatty meat, especially turkey tail and chicken feet were commonly imported and available on the market. The policy analysis paper earlier published explains the contexts and content of the policy. In this paper we felt it was useful to understand the landscape 20 years after the policy implementation. Is fatty meat still a problem? What is the nutritional situation in Ghana now? Is it possible that this policy has helped to minimize this aspect of the nutrition transition?

We have made reference to this in the manuscript, lines 152-161 and explained a bit more. We have also made the aim of this paper clearer in the revised manuscript, highlighted red.

Methods: unclear how the instruments were validated and how response options were chosen. Unclear, when they were piloted, what was assessed in the pilot?

Response

Actually the right expression to have used is pretesting of study instruments. This has been done in the revised manuscript and explained how it was done from lines 216-219.

Also the power calculation was based on which health outcome?

Response

The sample size calculation has been explained further in the revised manuscript from lines 174-180

It was stated that the questionnaire was adapted from a similar questionnaire used to assess. The FFQ, was a validated instrument for this population?

Response

We appreciate the reviewer’s concern. The FFQ only made up of the main meat types consumed in Ghana: beef, chicken, pork, turkey tail, mutton, goat meat and processed meat. The main aim
was to compared preference and consumption of local versus imported versions of these meat, in order to have a sense of what is more consumed. This has been explained in the revised manuscript. This is clarified in the revised manuscript.

The results and discussion could be greatly improved by a conceptual framework or program impact pathway of how this policy is expected to have any impact on the results presented.

Response

Some lines have been added to the introduction to provide a conceptual framework of the pathway of this policy, Lines 126 to 149 describe the project logic. This has also been mentioned in the discussion in lines 367-383.

Also, given the lack of control group or baseline, the findings on body composition and diet seem irrelevant here and need stronger justification for their inclusion.

Response

The results and discussions have both been revised. We have taken out the body composition component but retained the diet consumption. We did not carry out a general diet consumption. We only compared consumption of different meat types: LOCAL versus IMPORTED. This was essential as the comparison of consumption between imported versus local meat types reflect how the policy may have influenced what is available and hence what is consumed. This has been described in the discussion from lines 337-365

Note: in the abstract, it is the perception of access, affordability, and availability of meats, rather than the actual access, availability, etc.

Response

The abstract has been revised. We assessed perception of access, affordability and availability and not actual access, availability etc.

Overall proof-reading also recommended - some verbs and words missing; acronyms not spelled out when first mentioned, etc.

Response

We have proof-read the document