Reviewer’s report

Title: The impact of food reformulation on nutrient intakes and health. A systematic review of modelling studies

Version: 0 Date: 08 Sep 2018

Reviewer: Reviewer 2

Reviewer’s report:

PEER REVIEWER COMMENTS: To view the full report from the academic peer reviewer, please see the attached file.

REVIEWER COMMENTS FROM REPORT: GENERAL COMMENTS

* What is your overall impression of the study?

This is a fairly well-written systematic review of mainly modelling studies on the impact of food reformulation on nutrient intakes and health. This study utilised a systematic analysis approach to investigate the effect of food reformulation on nutrient intakes and health and adds to the literature in this less-studied area of research.

* What the authors' have done well?

The Introduction and Methods Sections of the paper are well-written, succinct and coherent. The authors reviewed the literature well, provided adequate justification for the study and had a clear study objective. The study design and data analysis is clear and detailed. The reporting of their study findings is relatively good particularly as the authors' attempts to reflect the study objectives. The Tables and Figures are informative and clear. The Conclusion was concise and coherent and the authors' clearly showed the implications of their study as well as identified future research needs.

* In what ways does it not meet best practice?

I have some concerns with the Results and Discussion Sections of the manuscript. In the Discussion Section- many statements were made requiring citation. There is also a need for the authors to discuss the implications of their studies for the control of Non-communicable diseases and for different regions of the world where there is clear variation in the consumption of these nutrients.

I have identified some revisions which will help the authors improve their manuscript.

REQUESTED REVISIONS:
SPECIFIC COMMENTS

INTRODUCTION

"the majority of published studies use mathematical models to predict the effects of reformulation on intakes and clinical outcomes."

Comment: Please, cite these published studies at the end of this sentence

METHODS

"Science Direct"

Comment: Please, this should read: "ScienceDirect"

"Therefore, a self-developed evaluation tool was used, mainly drawing from relevant criteria recommended by the ISPOR Good Practice Task Force"

Comment: Please, define ISPOR

RESULTS

"Tables 1- 3 and Figure 2 summarize the main findings and characteristics of the included studies. Overall, studies were heterogeneous in the way interventions and outcomes were modelled and reported, limiting between-study comparisons. Other study characteristics are provided in the Additional file 4."

Comment: There is a need to better describe the studies included in the systematic review. In total how many studies were included? What types of studies were they? What regions of the world did these studies cover or model? I believe this will better strengthen the first paragraph of the Results Section.

"... in a reduction between 6.35 and 1,452 DALYs [41, 42, 51], which, again, was proportional to the estimated levels of sodium reductions in each study."

Comment: Please, how did the authors assess how the QALY gained or DALY averted was proportional to the estimated levels of sodium reductions in each study? Please, clarify.

"Reformulation to reduce sugar intake targeted SSBs alone"

Comment: Please, define abbreviations when first use. What are SSBs, SFA or TFA?

DISCUSSION
"Reformulation can alter the sensory attributes of food products and influence consumer liking. This in turn may trigger unattended behaviors including the consumption of more public health sensitive nutrients, or simply more calories."

Comment: Please can you provide a reference/s for these statements?

"Almost 40% of the studies did not explicitly model the effects of the interventions over time and focused on simulating how cross-sectional nutrient intake data would change if foods were reformulated. Although consistent with their declared research questions, these studies are poorly informative about how the modelled interventions will dynamically affect intake and ultimately health outcomes. In the remaining studies, time horizons were highly heterogeneous, varying from 5 years to a life-time perspective. This again limits study comparability, with studies with shorter time horizons potentially underestimating the policies effect on health outcomes"

Comment: Please, provide a reference/s for these statements?

"Overall, there is enough evidence on the existence of different effective strategies to improve population diet quality [60]. However, to allow a full comparison among possible alternatives, more studies comparing reformulation policies to larger sets of other interventions (e.g. food taxes, or "sinking lid" to target nutrients) are needed"

Comment: As this statement was not based on any meta-analysis and the studies included are highly variable, I suggest that the first part of the sentence needs to be revised thus:

"Overall, there is moderate evidence on the existence of different effective strategies to improve population diet quality"

Comment: There is also a need for the authors to discuss the implications of their studies for the control of non-communicable diseases and for different regions of the world where there are clear variations in the consumption of these nutrients.

"To the authors' best knowledge, this is the first review to report a detailed description of modelling studies focusing on the reformulation of food products. It is also the first study to assess the study quality based on an ad-hoc assessment tool."

Comment: Please, it is generally safer to avoid these statements as a group has performed studies covering most of the objectives and data sources used for this study. Please see:


In addition, there was no external validation of the ad-hoc assessment tool.

ADDITIONAL REQUESTS/SUGGESTIONS:
As stated in the commentary above, please.

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

No

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

No

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

No

**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.

Not relevant to this manuscript

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

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3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

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5. Do you have any other financial competing interests?
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