Reviewer's report

Title: Towards a methodology: A survey of Australian child-oriented food products to monitor reformulation from 2009 to 2011

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Reviewer: Judith Buttriss

Reviewer's report:

Major compulsory revisions

This is an interesting and relevant paper that I feel could be improved by some restructuring. I am concerned that some of the methodological issues identified in the latter section of the paper (pages 22-23, e.g. top of page 23) are not reflected in the abstract and conclusion although the title refers to methodology development. Furthermore, there is a frustrating lack of detail in some sections which hinders interpretation of the data presented beyond the conclusions presented, including lack of information about the extent of the contribution of child orientated products to the overall diets of children, lack of information about the types and extent of changes in each category (with some specific examples) and lack of detail about the changes in absolute terms rather than as a percentage. At the outset, a decision has been taken to present the data in terms of % change >10% but in my view it would have been useful to see the data presented in actual (g/100g) terms for each product or at least for groups of similar products – for the reasons outlined in some of the points below.

1. I suggest that the conclusion and sections of the abstract are redrafted to take into account the impact of the methodological issues identified on pages 22-3, i.e. combine the results with the methodological issues rather than presenting them separately.

2. The abstract states that 33% of products remained unchanged but according to the criteria used in the study ‘unchanged’ relates to changes up to 9.9%, classed as ‘negligible’. Over a period of 2 years, a 9% reduction in a nutrient present in a food in relatively large amounts is probably not negligible in public health terms, particularly if the food is consumed in non-trivial amounts. Linked to this, it may be misleading to present changes as a % as this will presumably not distinguish between reductions in an already low level of a nutrient and reductions in a high level of the nutrient (perhaps in a food that also makes a substantial contribution to intake of the nutrient). By this I mean that a 5% reduction in a nutrient present in large amounts in a widely consumed food is of far greater public health significance than a 30% reduction in a nutrient present at low levels in a particular food (especially if the food is not consumed in large amounts or by large numbers).

3. The criteria set do not recognise that, in the UK at least, retailers and manufacturers report that large changes over a short period are often unsuccessful from a customer perspective – the change is too much, too quickly
and as a result the more substantial changes over time (e.g. salt in bread) have often been achieved via small steps over a period of a decade or more (indeed the authors note that a 2 year period of study may have been insufficient).

4. The lack of detail about the types of products included makes interpretation of the data challenging, especially as those outside Australia may not be familiar with some of the brands/products mentioned. An example is page 15, para 2.

5. Page 16, section on method 2 – states that only 5/85 products improved. But elsewhere it is stated that milk based and fruit based products were excluded from this analysis (and on the previous page that yogurt had been subject to the most reformulation). So it would be interesting to know the nature of the other 80 products and whether they were amenable to reformulation in the first place (eg in Europe, a directive exists about the composition of chocolate that makes reformulation very challenging).

6. It would be helpful to know what proportion of a child’s food intake is likely to be provided by the child-orientated foods – an estimate of this would provide some context for the findings?

7. It is my understanding that the initial survey captured all the foods available that met the child orientated criteria at the time, but it is not clear whether the second survey (which included fewer foods) missed out key products that had been introduced meantime, perhaps as healthier substitutes for products that had been withdrawn.

8. The authors seem surprised that in some of the products both negative and positive changes occurred but a consideration of the dynamics of food composition and the types of changes being targeted suggests to me that this is in fact not surprising, especially as results are presented as % change. If the amount of sugar in a food is reduced (and not replaced by some other ingredient), then the % contribution (i.e. g/100g) of another ingredient e.g. fat, will likely increase. The fat/sugar see-saw has been widely reported in diets, for example. This is further complicated by the potential of the methodology to group together large and small changes in absolute terms owing to the reliance on % change.

9. Discussion (para 2), I suggest that in setting benchmarks for reformulation, it is not just the % change that matters but also consideration of the contribution of a particular food too overall intake of the nutrient of concern and also the size of the change in absolute terms that can realistically be anticipated, given food safety issues in relation to shelf life in the case of salt and technological challenges in the context of fat/sugar. This is referred to briefly on page 19 but not integrated into the conclusions/abstract. The UK Food Standards Agency’s salt model is a useful reference for a more holistic approach to setting benchmarks for subcategories of food. Another approach is that adopted by the FSA for traffic light labelling that has thresholds in terms of g/100g and g/portion. The food legislation in Europe and elsewhere that requires a reduction of say 25% in the content of a nutrient to make a ‘reduced’ claim us proving to be a hurdle too-high for many food producers to attain (ref 60 cited in the paper).

10. I suggest that in light of the comments above, the conclusions in the latter
half of page 18 are too generalised and do not take account of the methodological issues acknowledged later in the paper. An approach of ‘what I would do differently if I were to repeat this work, and why, would be a useful contribution to the literature.

Discretionary revisions

1. The wording of the third para on page 6 suggests that ‘health by stealth’ is not a useful approach to improving the healthiness of products (as it hinders the monitoring of reformulation) but in practice, in the UK at least, it has proved to be a useful way of improving the profile of foods and nudging consumers in the right direction.

2. Explanation of the term home brand products’ may increase accessibility for non-Australian readers (page 9)

3. Page 13, for readers outside Australia it would be helpful to have more details and weblinks for the various schemes discussed.

4. Para 2 on page 18 compares the proportion of products that improved nutritionally or worsened over time, but this is not particularly meaningful without understanding more about the nature of the products, their ability to be successfully reformulated etc.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'