

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Parent-led or Baby-led? Associations between complementary feeding practices and health-related behaviours in a survey of New Zealand families
<b>AUTHORS</b>	Cameron, Sonya; Taylor, Rachael; Heath, Anne-Louise

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Harvey, Kate University of Reading, Psychology
<b>REVIEW RETURNED</b>	01-Oct-2013

<b>GENERAL COMMENTS</b>	<p>This paper is a well-written and thorough report of a well-designed and timely study. As the authors themselves acknowledge, it is limited by small sample sizes. However, given that statistically significant differences have been demonstrated despite this small sample size, it is not a weakness that should impact on the publication of the paper.</p> <p>The discussion would benefit from more explicit articulation and examination of the problem of causality in the relationship between adherent BLW and related health behaviours. The tables would benefit from having the test statistics added rather than just the p-values.</p>
-------------------------	--

<b>REVIEWER</b>	Brown, Amy
<b>REVIEW RETURNED</b>	10-Oct-2013

<b>GENERAL COMMENTS</b>	<p>This is an interesting and well written paper that adds to the literature. It is novel in that it explores baby-led weaning within a population based sample and offers some insight into the popularity of its use. Examination of associated behaviours supports previous research and starts to offer insight into how the method may have a positive impact upon eating behavior and weight.</p> <p>I have some suggestions mainly around discussion of the approach itself and some of the limitations.</p> <p>Background As a minor point, the first sentence doesn't seem to quite flow. I think a clear and slightly more detailed definition of blw is needed.</p> <p>Methodology</p>
-------------------------	---

I think the categorization using the two elements of whether the parent identified themselves as baby-led or not and then their behavior is very interesting. I think this needs further consideration in the discussion section though and is a critical point for future research.

There must be some parents in the sample (or in the general population currently weaning their babies) who display similar behaviours but label themselves as baby-led or not. So they have the same amount of spoon feeding, but one considers themselves to be baby-led, the other has never heard of it. Is this important? Might this affect outcomes for the child?

You raise the point in the discussion that parents want to do a mix of blw and spoon feeding – but how is that different to normal weaning practices? In the UK it is recommended that babies are given finger foods alongside purees from six months. Does this matter? Does the label of baby-led matter? Is it a way of thinking?

This leads me to my second point. Essentially, what is baby-led weaning? Is it about what foods the baby is given? How they are fed/feed themselves? Whether they join in mealtimes? Or is it more about letting the baby control their intake or even just a way of thinking about weaning and child feeding in general? When does someone become classed as blw? I know a key debate on blw forums is whether someone classes themselves as blw or not. Some believe you have to be very adherent, others are more relaxed and occasionally give purees. Does spoon feeding matter? Or is it more about how they are spoon fed if they are – responsively?

I think a key question for future research is 'what is important about the method'. Evidence is starting to emerge that the method may have a positive impact upon child eating behavior and weight but WHY does this occur? What is 'special' about the method? Or is it just something different about the mothers who choose to follow it? Finally can those elements ever be applied to standard weaning for those who don't want to follow blw?

#### Limitations

I think there needs to be some further emphasis on the limitations of the sample. You do use methods of recruitment that reduce bias and indeed led to a lower proportion of those following BLW which would be expected.

However, there are very high rates of exclusive breastfeeding in your sample which I presume are far exceeding population norms for NZ. This limitation needs to be considered.

Also, the numbers in the sample of those who are adherent to blw are very low. This is natural due to the recruitment methods used but does offer a small group for comparison.

Also, even within this adherent group, many report behaviours that are at odds with definitions of adherent BLW. For example a proportion gave baby rice as their first food. Many use commercial foods to some extent. Others don't eat as a family with their baby. I think any definition of BLW needs to allow some variation – but I think this could possibly be a further discussion point. Again, what is BLW, do you have to follow it strictly and what elements are most

	important?
--	------------

<b>REVIEWER</b>	Pitchford, Nicola
<b>REVIEW RETURNED</b>	13-Oct-2013

<b>GENERAL COMMENTS</b>	<p>The paper is well written and describes the study well. My main concern is that one of the claims of the paper is that it is a population-based study but the authors acknowledge that their sample might not be representative of the population at large on several variables. I feel more could be done in the ms to show how representative of the population this sample was. I feel information should be divided by the four main regions sampled. So, for example, how many children were eligible to be included in this study from health records, and how many were actually recruited? How did this vary across key demographic groups (such as maternal age)? The authors touch on this, but I feel more could and should be done to support the initial claim.</p> <p>My other concern is that I'm not too sure what the key message is that the authors wish to communicate. Is it that health professionals should be more willing to promote BLW because parents are open to this approach when given information about it, and that it doesn't seem to be associated with a higher incidence of the types of behaviours parents are concerned with the approach, such as choking? I feel the key messages could be pulled out more explicitly through carefully rewriting some sections of text.</p> <p>Comments were made in the discussion about picky eating but the ms does not report data on this. Other studies have looked at this though, so maybe some reference to these studies would be appropriate.</p> <p>When discussing the intake of iron rich foods was there any evidence that the A-BLW group were deficient in iron? If this wasn't studied perhaps indicate this as a limitation to the study, as without objective data we cannot tell if there is a difference in iron deficiency between the two groups so the discussion might be somewhat redundant.</p>
-------------------------	---

### VERSION 1 – AUTHOR RESPONSE

Reviewer #1 (Remarks to the Author):

1. The discussion would benefit from more explicit articulation and examination of the problem of causality in the relationship between adherent BLW and related health behaviours.

Additional discussion regarding causality has been added to the Discussion (page 22, lines 445-451).

2. The tables would benefit from having the test statistics added rather than just the p-values.

We used the Pearson's chi-squared test to determine whether there were statistically significant differences between the complementary feeding groups because this enabled us to compare proportions. This approach does not produce a meaningful test statistic. To clarify this we have replaced "chi square test" with "Pearson's chi-squared test" in the statistical methods section (page

11, line 188).

Reviewer #2 (Remarks to the Author):

1. As a minor point, the first sentence doesn't seem to quite flow. I think a clear and slightly more detailed definition of blw is needed.

Further detail about BLW has been added as requested (page 4, lines 87- 95).

2. I think the categorization using the two elements of whether the parent identified themselves as baby-led or not and then their behavior is very interesting. I think this needs further consideration in the discussion section though and is a critical point for future research. There must be some parents in the sample (or in the general population currently weaning their babies) who display similar behaviours but label themselves as baby-led or not. So they have the same amount of spoon feeding, but one considers themselves to be baby-led, the other has never heard of it. Is this important? Might this affect outcomes for the child?

This is a very interesting point and certainly warrants further investigation. We have revised Figure 1 to better reflect the nature of the groups, i.e., participants were classified first by whether they were self-feeding, and then by whether or not they considered that they were following BLW. We had not included a group for participants who were self-feeding but did not identify themselves as following BLW because there were no cases of this in the study sample. For completeness, and clarity, Figure 1 now includes a group who were "unclassified", and we have specifically stated in the Results (page 11, lines 200-201) that no cases of the "unclassified" method were found. We agree that it would be very interesting to see a study in which the elements of responsive feeding were considered alongside those of BLW, because it is possible that any health benefits of BLW are mediated by responsive feeding.

3. You raise the point in the discussion that parents want to do a mix of blw and spoon feeding – but how is that different to normal weaning practices? In the UK it is recommended that babies are given finger foods alongside purees from six months. Does this matter? Does the label of baby-led matter? Is it a way of thinking?

In New Zealand BLW is not compatible with the New Zealand Ministry of Health (MOH) guidelines and, indeed, is not supported by the Ministry of Health (at least as a population approach) due to a lack of evidence regarding its use (<http://www.health.govt.nz/our-work/preventative-health-wellness/nutrition/baby-led-weaning-ministry-position-statement> ). The conventional method of infant feeding currently advised and supported by the MOH and NZ healthcare professionals is to spoon-feed purées from 6 months and not to introduce finger foods until at least 7-8 months, at which time they would generally only represent a small proportion of the diet. Therefore, mothers following BLW are seen as following an alternative method in NZ, at least at this point in time. Although infants in the UK are recommended to have finger-foods from 6 months of age we would assume that only a small proportion would be making these the main component of their diet. It would be interesting to see a similar study from the UK in which spoon-feeding and self-feeding rates are compared in parents who identify as doing BLW, and parents following the traditional method of feeding. Certainly studies to date (including the present one) suggest that the mothers who follow BLW are demographically different and have different levels of control around feeding. This suggests that BLW may be a group of behaviours, perhaps including a more responsive feeding style, and not just a single behaviour working in isolation.

4. This leads me to my second point. Essentially, what is baby-led weaning? Is it about what foods the baby is given? How they are fed/feed themselves? Whether they join in mealtimes? Or is it more

about letting the baby control their intake or even just a way of thinking about weaning and child feeding in general? When does someone become classed as blw? I know a key debate on blw forums is whether someone classes themselves as blw or not. Some believe you have to be very adherent, others are more relaxed and occasionally give purees. Does spoon feeding matter? Or is it more about how they are spoon fed if they are – responsively? I think a key question for future research is ‘what is important about the method’. Evidence is starting to emerge that the method may have a positive impact upon child eating behavior and weight but WHY does this occur? What is ‘special’ about the method? Or is it just something different about the mothers who choose to follow it? Finally can those elements ever be applied to standard weaning for those who don’t want to follow blw?

Please see response to point 3.

5. There are very high rates of exclusive breastfeeding in your sample which I presume are far exceeding population norms for NZ. This limitation needs to be considered.

We acknowledge the reviewer’s point and agree that it is uncommon for mothers to exclusively breastfeed to 6 months in New Zealand (current national rate of exclusive breastfeeding at 6 months is 16%). We have added a sentence to the Discussion (page 22, lines 443-445).

6. The numbers in the sample of those who are adherent to blw are very low. This is natural due to the recruitment methods used but does offer a small group for comparison.

We acknowledge the reviewer’s comment. It is reassuring that although the number of parents who were adherent to BLW was small, it did still provide sufficient power to demonstrate small, but statistically significant, associations between this group and health related outcomes. However, it would be important to examine the non-significant variables such as choking and gagging in a larger sample before coming to any conclusions about their presence or absence in infants following BLW (a comment to this effect has been added to the Discussion page 18 lines 334-337).

7. Also, even within this adherent group, many report behaviours that are at odds with definitions of adherent BLW. For example a proportion gave baby rice as their first food. Many use commercial foods to some extent. Others don’t eat as a family with their baby. I think any definition of BLW needs to allow some variation – but I think this could possibly be a further discussion point. Again, what is BLW, do you have to follow it strictly and what elements are most important?

This is a very interesting point. As our previous work (Cameron, Heath and Taylor BMJ Open 2012) had suggested that purées could be offered to the self-feeding infant (for instance puréed mince on toast) the definition used here related only to the method of feeding (i.e., self-feeding vs. spoon-feeding) and not to the form of food (i.e., purée, mashed, or whole). Therefore we classified ‘adherent BLW’ as meeting a minimum and specific criterion (i.e., infant always or mostly self-feeds). Only a longitudinal study could determine what are the important aspects of BLW and presumably this would depend on the desired outcome.

Reviewer #3 (Remarks to the Author):

1. More could be done in the ms to show how representative of the population this sample was. I feel information should be divided by the four main regions sampled. So, for example, how many children were eligible to be included in this study from health records, and how many were actually recruited? How did this vary across key demographic groups (such as maternal age)? The authors touch on this, but I feel more could and should be done to support the initial claim.

We acknowledge the reviewer's comment about the representativeness of the sample and have added detail to the Results (page 12, lines 210-214). However, we do not feel it is appropriate to present the data by region because (a) this would substantially reduce the sample size for comparisons, and (b) we do not know how many children were eligible in each region. Unlike other BLW studies where participants have been recruited from health records, the participants in the current study were recruited from the general population via advertisement in local newspapers. Thus, no response rate can be calculated.

2. Is it that health professionals should be more willing to promote BLW because parents are open to this approach when given information about it, and that it doesn't seem to be associated with a higher incidence of the types of behaviours parents are concerned with the approach, such as choking? I feel the key messages could be pulled out more explicitly through carefully rewriting some sections of text.

The main message of this study was that although parents may identify themselves as following BLW, it is important that healthcare professionals delve deeper into what BLW means for each family. We found that different levels of adherence to BLW were associated with different health related behaviours. We have re-written sections of the manuscript to make this more apparent.

3. Comments were made in the discussion about picky eating but the ms does not report data on this. Other studies have looked at this though, so maybe some reference to these studies would be appropriate.

We agree with the authors and have removed these comments from the Discussion.

4. When discussing the intake of iron rich foods was there any evidence that the A-BLW group were deficient in iron? If this wasn't studied perhaps indicate this as a limitation to the study, as without objective data we cannot tell if there is a difference in iron deficiency between the two groups so the discussion might be somewhat redundant.

We agree and have added this cautionary note on page 20, lines 378-380.

#### **VERSION 2 – REVIEW**

<b>REVIEWER</b>	Brown, Amy
<b>REVIEW RETURNED</b>	04-Nov-2013

The reviewer completed the checklist but made no further comments.