Author's response to reviews

Title: Watch Me Grow: A garden-based pilot intervention to increase vegetable and fruit intake in preschoolers

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Author's response to reviews: see over
March 16, 2013

Dear Dr. Khan,

To: Dr. Jimar Dizon
Biomedical Central Public Health

Re: Response to reviewers comments for “Watch Me Grow: A garden-based pilot Intervention to increase vegetable and fruit intake in preschoolers” MS: 1006664108538079

We appreciate the thoughtful reviews of our manuscript entitled “Watch Me Grow: A garden-based pilot intervention to increase vegetable and fruit intake in preschoolers”. Responses to the reviewers’ concerns are provided below and changes are incorporated in “track changes” in the attached manuscript.

Reviewer # 1

Minor Essential Revisions:

Line 32: How were the 6 centers selected?

We have indicated in the manuscript that all licensed centers invited to participate in the intervention were located in a small, nearby community. Of those, five agreed to participate, but due to a limited budget, only the first four were included in the study. We have now clarified this in the manuscript on page 4, line 41-46.

Line 77: How were the four activities spaced throughout the month? Did all activities get implemented? How was this measured/ensured? Who implemented the activities – center staff or the health educator?

We appreciate the opportunity to clarify this information in the manuscript. We now better described the intervention activities and how they were implemented. Although we did not formally evaluate the implementation of each activity, we did ask centers each month to report on their success with the previous month’s module. This evaluation took place during each monthly on-site visit to the intervention centers. This information has been updated in the manuscript on page 7, lines 94-97.
Line 78: How did you encourage staff to serve as positive role models?

The curriculum encouraged positive role modeling through individual communication between the interventionist and the providers (teachers). The monthly modules also included information to help encourage providers to serve as positive role models throughout various activities. For example, providers were encouraged to taste the garden produce during taste tests and to say positive things about the vegetable or fruit. This information is now included on page 7, lines 97-101.

Discretionary Revisions:

Do the researchers have any thoughts as to why the amount of fruits and vegetables served to the children changed from pre to post?

Given the small sample size of this pilot, we were unable to conduct formal hypothesis testing to evaluate the effects of the intervention. However, we did observe some positive changes in behavior related to vegetable consumption. We have added some additional information on potential reasons for change in vegetable and fruit intake on page 11, lines 187-192 of the manuscript.

Did all of the intervention activities prove to be age-appropriate? For example, were the children able to graph and chart? These activities seem possible for 5-year olds but difficult for 3-year olds. This information will be useful to other pursuing this type of intervention.

This is an important point and we appreciate the opportunity to respond to this question. While this pilot study was not designed to investigate the impact of individual intervention components, we did find that children engaged in activities to a greater or lesser degree based on age. We discovered, through conversations with center staff, that each monthly module contained at least one activity appropriate to younger children and another appropriate to older children within the center. We now include some additional information on page 12, lines 220-226.

Why were 3 different children observed at each time point versus observing for change in the same children over time? This seems difficult as it does not allow for control over individual dietary preferences, level of food neophobia, etc. With a small sample size, this could explain why the intervention did not prove to have more of an impact. Perhaps 3 “adventurous” eaters were observed at baseline and 3 “picky” eaters as post-intervention.

We appreciate this comment and agree that a cross-sectional sample of children observed at baseline and follow up was not ideal. However, we followed the protocol developed by Ball et al. for dietary observation within child care (Ball SC, Benjamin SE, Ward DS. Development and reliability of an observation method to assess food intake of young children in child care. J Am Diet Assoc. Apr 2007;107(4):656-661). Per protocol, the same children were not necessarily observed pre- to post-intervention, although there were some children observed at both time points due to the small number of children enrolled in the centers in our study. The reason for this approach is that many children age out of child care over the course of an intervention study—especially those of longer duration. Thus, mutiple cross-
sectional assessments may be better than a longitudinal assessment with substantial attrition from baseline to follow up due to a large percentage of children leaving the center. This information is now reflected on page 8, lines 118-123.

Reviewer # 2

Minor Essential Revisions:

Include statistical significance in Abstract and results.

We truly appreciate the reviewer’s request for statistical testing in the paper. We consulted numerous statisticians who have cautioned the authors against formal statistical testing. Based on our sample size, however, we lack to power to test the null hypothesis. In order to detect a group difference of .5 servings of fruits and vegetables from pre- to post-intervention with 98% power, 63 centers would be needed, with 4 children per center. With 20 centers per group (6 children per center) we could achieve 89% power to detect a mean difference of 1.0 additional servings of fruit/vegetables post-intervention between the 2 groups with a standard deviation of 1.5 [and an ICC of 0.25, for a two-sided t-test at the alpha=0.05 significance level (NCSS Statistical Software, Kaysville, Utah, 2011).]

In this revised paper, we therefor respectfully present means and standard deviations for change, as we are underpowered to detect any group differences. This paper is intended to present findings from a small pilot study and show proof of concept. While we recognize the lack of statistical testing may detract from the manuscript, we feel that the paper adds value to the field, as no other studies have been published in this area.

The introduction lacks depth. Vegetable and fruit consumption are driven by different determinants, and are integrated into diets in different ways – they should be dealt with separately in the introduction (as they are in the methods, results and discussion). For example, Rheinharts has published on this.

We have updated our introduction to touch on various determinants of food preference and how this food preference can be shaped in early childhood. While we were unable to find literature the author suggested by the reviewer (Rheinharts), we were able to find evidence from several other authors. This additional information can be found on page 3, lines 7-18.

Since vegetable consumption is more consistently inferior to recommendations, consider using the term “vegetable and fruit” rather than “fruit and vegetable”.

Thank you for this suggestion. We have updated the manuscript, including the title, to reflect this suggestion.
Methods – Please explain exactly how randomization (between and within schools) was conducted.

After baseline data collection, we randomized the four centers in our sample via a simple randomization scheme (randomization without restriction) to either the intervention (n=2) or control (n=2) condition on a 1:1 ratio, using the Research Randomizer (http://www.randomizer.org/form.htm). Once schools were randomized, we employed a similar technique to randomly select a classroom within each school for dietary observation. This information is now included in the body of the methods. This information is presented on page 5, lines 56-59.

Thank you in advance for reconsidering this manuscript for publication in BMC Public Health. If you have further questions, please let me know.

Regards,

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