Author's response to reviews

Title: Adopting and implementing nutrition guidelines in recreational facilities: Public and private sector roles. A multiple case study.

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Author's response to reviews: see over
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Dear Dr. Mota,


Thank you very much for your letter of April 11th, 2012 inviting changes to our manuscript. We appreciate the thoughtful comments from the reviewers and address their points below. In addition, in response to your query regarding table 1, we have not reproduced the table, but have used the data in the article (Greenhalgh et al., 2004) to create the table.

**Response to reviewer #1:**

**Major Compulsory Revisions**

1) I would like know if the variation intra- and inter- investigators was done in qualitative observation of adoption/implementation of ANGCY?

**Response:** We used two independent observers in order to capture multiple subjective perspectives of the food environment. Different individuals will naturally notice different things, and may also interpret similar observations differently. We did not quantify observations by enumerating their frequency and thus a formal reliability assessment was not possible, nor would it have been consistent with our aims. There were no points of disagreement between observers, and therefore observations from both observers were compiled and analysed together. It was not possible to measure intra-investigator variation as the same events could not be observed twice.

2) In table 2, I would like know what age range of children?

**Response:** We use “children” to refer to those under the age of 18 years. We have added this information to Table 2.

3) In table 3, I think that amplitude of nutrient composition (food/beverage) should be included in results section or in table.

**Response:** By amplitude of nutrient composition we assume that you mean the grams of each macronutrient. As you can see, we have indicated the grams of sugar and fibre and the proportion of fat, carbohydrate and protein within average vending machine items. Given that the Dietary Reference Intakes for macronutrients focus on the proportion of each macronutrient that should be present in the diet, rather than absolute amounts, we felt that this was the most understandable and most concise way to present the nutrient composition of vending machine items. In addition, readers can easily calculate the absolute amounts from the information provided in the table. If the editor wishes us to do so, we will gladly add these additional data to table 2. We did not add them to avoid unnecessarily increasing the length and complexity of the table.

4) How the authors explain the difference between proportions of “availability of CMO food items” and “availability of CMO beverage”?
**Response:** This is an excellent question that is already addressed on pages 13 and 28. Page 13 reads: “Beverage vending machines scored better than food machines on all measures. Comments from managers revealed why this was the case, as bottled water was a top selling item, and therefore it was in the financial interests of food vendors to place this healthy item in machines.” Page 28 reads: “The availability of “choose most often” items was low within all of the facilities and was not consistently higher in adopter compared to non-adopter facilities. This outcome was partially a reflection of the low availability of such items in the marketplace, as for example, there are few “choose most often” food items suitable for sale within unrefrigerated vending machines.”

5) The results section is described in length, which difficult the reading of the study. It should be shortened?

**Response:** Thank you for this comment. We fully agree that the results section is lengthy and for this reason we have presented as much data as possible in tables. We felt it was essential, however, to describe the factors that differed between adopters and non-adopters in the text, as it was these factors that compelled or dissuaded adoption and/or implementation. The length of the results section is mainly due to the extensive and comprehensive nature of the theoretical framework. As you can see, we have limited discussion of each point to 1-2 paragraphs. Although the comprehensive nature of the theoretical framework makes the results long, its comprehensiveness is also an important strength of the study. We can attest that we spent many hours condensing the results section prior to submission. However, if there are specific sections that you feel are not essential we will gladly reconsider whether they might be omitted.

**Minor Essential Revisions**

1) Figure 1 was not attached.

**Response:** Thank you for noticing this. We have replaced “Figure 1” on page 6 with “Table 1”. We apologize for this error.

**Response to Reviewer #2**

8. Do the title and abstract accurately convey what has been found?

No - this could use a bit of a tweak as it focuses more on the adoption/implementation of the policy and critical factors that influence it rather than the roles of the private sector

**Response:** We agree with the reviewer that the study does focus on the critical factors that influence policy adoption/implementation, and believe that this is conveyed in the title which suggests to readers that these factors are found within the public and private spheres. We could have entitled the paper: “Factors that influence adoption and implementation of nutrition guidelines in recreational facilities”, however this would not have emphasized the novel and unique findings of this study, namely that recreation facility managers and schools (public sector) played important roles in the adoption and implementation of nutrition guidelines, and that recreation facility managers had to work collaboratively with industry (private sector) to achieve change in the recreational facility food environment. The reviewers’ point is well-taken, however and therefore we have changed the title so that “public” appears before “private” to emphasize the primacy of the public role, as in “Adopting and implementing nutrition guidelines in recreational facilities: Public and private sector roles. A multiple case study.”

**Minor Revisions**
1) Page 5 last sentence of background - this sentence is out of place and should be moved into the conclusions. End the paragraph with the research questions and definitions.

Response: Thank you for this comment, we have moved this sentence to page 32.

2) page 6 Adopter, versus partial adopter - please enhance the definition with some specificity so people can relate to what it means to be an ANGCY full adopter e.g. to be a full adopter all products had to comply with the guideline be 50% choose most?

Response: This is an excellent point. As indicated in the paper, however, the ANGCY lack specificity in that they do not state what proportion of items must be “choose most often”, they merely recommend that healthier options be available, competitively priced, etc. Thus, a formal definition of “ANGCY adoption” does not exist. Indeed, one of the purposes of the study was to examine whether the food environment differed between facilities that claimed to be adhering to the guidelines and those that did not. We found few substantial, measurable differences in the overall food environment between adopters and non-adopters. In many cases the proportion of “choose most often” items was similar among facilities.

3) Methods - this section and the paper would benefit from being in the order of the research questions. e.g. To describe the nature of the food environment and implementation of the ANGCY within adopter and non-adopter facilities (research question one) we audited the vending and food services using the and implementation using and we also asked for sales data. e.g. To explore the factors that influence adoption we used qualitative methods guided by responses to an initial survey instrument. These methods included: (this change also aligns your methods with the order of your results.

Response: Although the reviewer is correct in stating that only qualitative methods were used to assess the second research question, a combination of quantitative and qualitative methods were used to assess food environment quality (ie the first research question). For this reason we have not made the suggested change.

4) Then you talk about data transformation. You need to move sales from page 11 back into the data collection section and the adoption question under long term follow-up - p. 11 back into data collection which will make the data transformation and analysis section more clear.

Response: There appears to be some confusion regarding section headings. On page 7 the section entitled: “Data generation and analysis” begins. This section contains several subsections. One subsection is called “Quantitative assessment of the food environment.” In this subsection we describe data transformation, as only quantitative data were transformed. Later subsections include “sales, long-term follow-up, within case report and cross case analysis.” The reviewer refers to a section entitled “data transformation and analysis”, however there is no such section within our paper.

5) Results Context p. 12 Please add a sentence or two into the context about the broader context of the school nutrition policy and that producers, suppliers and distributors had made strides to meet this guideline and that the ANGCY was rolled out in that context.

Response: Thank you for this comment. The ANGCY encompass recommendations for recreational facilities, schools and childcare. Thus, the ANGCY were not rolled out in a context where school
nutrition guidelines already existed, rather the ANGCY are in fact the only provincial school nutrition guidelines that exist in Alberta. Thus, nutrition recommendations for schools and recreational facilities were introduced simultaneously. Many school districts in Alberta have actually only recently begun to adhere to the ANGCY, many of them after the full and semi-adopters in our study began to do so. Furthermore, as indicated on page 28, recreational facility managers in our study complained of major difficulties locating foods that met the ANGCY’s strict nutritional standards. For these reasons we do not feel that the statement suggested by the reviewer is justified, as the ANGCY were rolled out in a largely unsupportive context.

6) I am not convinced that the long-term follow-up is a valuable addition to the paper or contributes to answering the research question. I suggest if you leave it in that you write it as one sentence in the description section or context about adopter status (that the adoption status was stable over time). This is an opportunity to improve the clarity of the paper because it is already complex and the key messages are getting lost in the volume of the information.

Response: Thank you for this suggestion, we have reduced discussion of this result to a single sentence on page 27 “Six to 18 months following completion of each case study all facilities confirmed that their adoption status was stable, and that no major nutrition-related changes had occurred within their food services.”

7) Discussion The paper would be strengthened with a great emphasis on the role of secular trends in food production and the influence of the school policy. You may not pick up a difference between adopters because distributors have started to include some of the 'newer' healthy products in their vending mix as a result of increased access and emphasis related to school nutrition guidelines and product innovation that is ongoing in response to the great public awareness of the obesity crisis and demand for healthier options.

Response: As noted on page 12 there were differences in the quality of items present within vending machines among facilities that had and had not adopted the ANGCY. Thus the comment about not being able to pick up differences between adopters and non-adopters due to inclusion of newer healthy products in their vending mix is not relevant, as there were in fact clear differences. In addition, we personally observed the contents of all vending machines and interviewed food vendors. We can confirm that food vending machines in non-adopter facilities did not contain any healthier items nor did food vendors attempt to place any healthier items in these machines. Similarly, beverage machines in non-adopter facilities contained noticeably fewer healthy beverages compared to those in adopter facilities.

8) Food environment quality - P. 28 last line of paragraph one - I think this sentence is better at the end of the section because paragraph one and two are very related - access to healthy products is a substantive issue, holding the vendor accountable for stocking on a regular basis. I don’t know if the funding model is the reason you see little difference between adopter and non-adopter. It is the reason the non-adopter is the non-adopter but not the reason that it is difficult to show a measurable gain in food quality. This has to do with the above.

Response: As indicated in the results on page 20, adopter facilities were willing to adopt the ANGCY in areas where the financial repercussions were minor, but not where they were large because funding models made them financially dependent on revenue from sales of unhealthy foods. Managers indicated that this was one of the most important reasons why they were not willing to reduce the
proportion of unhealthy items and increase the proportion of healthy items to a greater extent. Thus, the funding model is a key reason why facilities were reluctant to significantly improve food environment quality.

9) Conclusions - I think these could be strengthened and should include your key messages see some examples of sentences to modify to strengthen this. I like the paragraph on page 31 our study showed that "voluntary initiatives such as the ANGCY may have limited effectiveness to counteract the pervasive influence of (something like this at the start of the conclusion would be good). However when a voluntary model is in place the keys are in the managers hands.

Response: Thank you for the suggestion. We have added the phrase “when a voluntary model is in place” on page 34.

10) 1st paragraph. First sentence "the keys... are in the managers hands" (rather than relate to the manager). Within a voluntary model the keys are in the managers hands and relate to their knowledge, values and beliefs and perceptions about the importance of healthy eating and the role of food in maintaining the budget. I think it is stronger if you emphasize the voluntary model early. Perhaps suggest that policy dissemination strategies should target their knowledge and beliefs.

Response: As requested, we have emphasized the voluntary model earlier in the paragraph (see previous response). We have also indicated on page 34 that “the keys to adoption and implementation of nutrition guidelines in recreational facilities relate to the manager’s nutrition-related knowledge, beliefs and perceptions, as these shape his decisions and actions.” We have also added this to the abstract on page 2. We have also added on page 34 that "Policy dissemination strategies could therefore target these areas.”

11) Line 6. I think you need to separate the concept of voluntary action and meaningful gains. I think that the adopters have taken meaningful action but have they made meaningful gains. Line 7 you should add/ emphasize the role of contracts (supported by Vanderwekken et al) in this sentence- specify what you mean by funding model "a funding model that has included raising funding from selling unhealthy food" Suggestion: Voluntary action and meaningful gains may not be realized in an environment of long term contracts, funding models that depend on selling unhealthy food for profit, lack of accountability for change and relatively few palatable healthy products to substitute. Stronger guidelines and accountability mechanisms may be needed and more government support for innovation by producers.

Response: We thank the reviewer for this suggestion and have added the requested phrases with slight modifications on page 34: “Voluntary action and meaningful gains may, however, not be realized in an environment of long term food service contracts, limited support for change, funding models that depend on selling unhealthy food for profit, and relatively few palatable healthy products to substitute. Stronger nutrition guidelines and government support for product innovation may be needed.”

12) Change Line 4 paragraph 2 of conclusions: This data contributes to (remove will).

Response: Thank you, we have made this change.
Thank you again for the helpful comments. Please do not hesitate to contact us if you have any further queries or concerns.

Sincerely,
Linda McCargar
Dana Lee Olstad
Kim Raine