Author's response to reviews

**Title:** Estimating the prevalence of obesity in Canadian preschool children using WHO, IOTF and CDC growth references

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**Version:** 2 **Date:** 7 January 2011

**Author's response to reviews:** see over
January 7th 2011

Dear Dr. Norton,

Thank you for accepting our paper for review. We have reviewed the reviewers’ comments and found them to be very thoughtful and appropriate. As a result we have made changes, additions and clarifications that improve the quality of our paper. We have responded to the reviewers’ comments individually in order below and made any necessary changes to the manuscript using track changes as suggested.

**Reviewer I Comments:**
"The abstract is too long, but not informative".

*Response: We have shortened the abstract and made it more informative.*

The abstract's conclusion is too vague, it should be re-written according to the study findings.

*Response: The abstract conclusion has been re-written to reflect the study findings.*

The main difference of the WHO definition with the two other cut-points should be addressed. Including breast-fed children of various nationalities is the main property of the WHO definition, thus the related values would be lower than the other two definitions.

*Response: The three growth references are defined in the Methods section. Both the IOTF and the WHO references were based on children from various nationalities, the main difference being that those followed by the WHO were exclusively breastfed whereas the IOTF does not make this distinction. Changes were made to the text in the Methods section to emphasize this point.*

The results section is difficult to follow, and there are many duplicate information in the results' text, tables and figures.

*Response: The duplicate data in Table 1 has been removed. The information in the Results section has been shortened and the repetitive text related to the figures was removed.*
The discussion section begins with a general and vague sentence.

*Response:* *Agreed, this sentence was removed.*

Overall, the discussion section is a repetition of various studies without any interpretation of the findings of the current study.

*Response:* *Changes have been made to the Discussion section making it more relevant to the content including improved interpretation.*

The study limitations are not clearly stated.

*Response:* *Study limitations are now included in the Discussion section.*

The conclusion provides facts related to public health issues related to childhood obesity; it should be re-written in a more concise and precise form

*Response:* *The Conclusion has been re-written.*

**Reviewer II Comments:**

This study could not be a descriptive one showing the prevalence of overweight/obesity in Canadian children. Having a limited sample size and focusing on only two regions could not be a statically acceptable and the study population is not a representative sample of Canadian children.

*Response:* The text in the both the title and introduction have been changed to better reflect the sample studied. In the Discussion we have made reference to a larger provincial study that reported similar prevalence estimates of overweight and obesity to the current regional study. This provides confidence that our study findings are representative of our provincial population. (Canning et al. *CMAJ* 2004, 171(3):240-2)

The sampling was not a random one and it is a great pitfall, however, the authors could have said that they were only to compare three growth references regarding defining overweight and obesity in group of Canadian preschool children. This means that the title and introduction of this manuscript should be changed to address the issue of inconsistency of data in this field.

*Response:* The title and introduction have been changed to better reflect the sample studied and the inconsistency between growth references in this field. Study limitations have been addressed in the Discussion section including the non random sample. The strength of a random sample is in its ability to allow generalizability of results to a larger population. The objective of the current study is to compare the prevalence estimates of childhood obesity using three different methods.

Discussion only focused on comparing of these standards and how they differ in their estimation and not the problem of obesity in Canadian children and how big the problem might be. The authors are asked to suggest that one these standards may be more justified to use regarding ethnicity and race of the
study population e.g. CDC might be one is expect to be used for Canadian population.

Response: We have included a statement at the beginning of the Discussion addressing the magnitude of the problem.

As researchers we feel there needs to be consistency in the use of these standards for comparisons purposes across countries and populations. Our study highlights how the prevalence estimates can significantly differ depending on the growth reference used.

Although several Canadian organizations (e.g., Canadian Pediatric Society, Society of Dieticians of Canada) have recently endorsed the use of the WHO growth references primarily for clinical purposes, there is no consensus within the research community as demonstrated by the Clinical Practice Guidelines recently published in Canada that endorse the use of CDC charts for clinical purposes and IOTF for research purposes.

I suggest part of the data analysis showing the prevalence of overweight/obesity be removed and authors focus on those data showing the difference of these standards. In this regards figures clearly showed the differences.

Response: The duplicate data in Table 1 has been removed. The information in the Results section has been shortened and repetitive text related to the figures was removed.

We would also like to thank the reviewers for the time they spent in providing insightful comments and detailed suggestions to improve our paper. I hope we have addressed their concerns in a satisfactory manner. If you have any further questions or concerns please feel free to contact me. I look forward to hearing from you.

Yours sincerely,
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