Author’s response to reviews

Title: Less healthy breakfast cereals are promoted more frequently in large supermarket chains in Canada

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Author’s response to reviews:

We thank the reviewers for their thoughtful feedback. Below, please find our point-by-point responses to the reviewers along with the revised manuscript with changes indicated in track-changes.

Comments from Reviewer 1

1. My primary concern with the manuscript is that it does not adjust for the base rate prevalence of the various cereals. While the less healthy cereals are marketed more frequently, there are also many more less healthy cereals in the store. From this it is unclear whether the higher frequency is just a result of randomly selecting cereals to promote, or a systematic bias toward promoting less healthy cereals. I believe this would be a much more useful result.

The reviewer’s comment is targeted at Table 3 which examines total shelf facings and marketing techniques for all cereals for all four weeks for all five supermarkets. While it is an important result that less-healthy cereals are promoted more frequently in Canadian supermarkets, it is a fair comment that it is unclear as to whether this is the result of randomly selecting cereals to promote, or a systematic bias toward promoting less healthy cereals. This limitation has been added in the Discussion.

“It is unclear, given that there was a higher frequency of less healthy cereals, as to whether the differences in frequency in marketing techniques between the healthier and less healthy cereals were a result of randomly selecting cereals to promote, or a systematic bias toward promoting less healthy cereals in Canadian supermarkets. However, the fact that the ratio of healthier to less healthy cereals for shelf facings (1:5.3), end cap displays (1:4.2) and special pricing signage (1:3.3), outweighed the ratio of healthier to less healthy cereals (1:2.4), suggests that Canadian supermarkets may have a systematic bias toward promoting less healthy cereals.”
2. I believe the limitations section muddles the generalizability of the result by first stating "results are generalizable to these two provinces" and later stating that the convenience sample limits the generalizability. You need to bring these two statements closer together in the text, and reconcile them for the reader. The reader should be given an accurate understanding of these tradeoffs and what questions they leave open.

The first statement "results are generalizable to these two provinces" has been deleted. Our study generalizability is in fact limited by our convenience sample. The sentence now reads:

“Also, a convenience sample of grocery stores was used rather than a random sample which impacts the generalizability of this study. Replication with a random sample of grocery stores in Canada is warranted.”

3. It is unclear how you handle differences in store size for statistical tests. It appears you are using simple means tests. It would make sense to account for the fact that larger stores may have more facings available than smaller stores when testing for differences in frequencies. Otherwise, store base rates in larger stores may drive the results.

The supermarket chains selected for this study were the largest five supermarkets in Canada based on total sales. Exact store size was not available for 2 of the 5 stores as it is proprietary information. This prevented us from accounting for store size in the analyses. This weakness has been added in the study limitations in the Discussion section.

“We were unable to control for grocery store size as square footage was not available for all participating supermarket chains.”

In addition, Table 2 related to store outcomes and related results have been deleted from the manuscript.

Comments from Reviewer 2

4. I have only one comment to make, which pertains to the major limitation of this study understated by the authors. The study is entirely based on the perspective of suppliers, whereas no attention is paid to the consumer side. How likely a consumer is to purchase and consume less healthful cereal products vs. more healthful cereal products? Would promotion make a difference in nudging consumers towards purchasing less healthful cereal products? Answers to these questions might be more policy-relevant than a survey of supermarket shelf displays but demand measures of grocery shopping behavior and dietary intake. The authors may need to at least acknowledge this as a study limitation and warrant future studies.

This study limitation has been added in the Discussion.
“In addition, as this study focused exclusively on measuring promotions within the supermarket environment, research that considers the impact on consumers of supermarket environments that promote less healthy cereals more frequently than healthier cereals is recommended.”