Author’s response to reviews

Title: A pilot study of Aboriginal health promotion from an ecological perspective

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Author’s response to reviews: see over
Dear Editors,

RE: Manuscript ID 1159265156511302: 
A pilot study of Aboriginal health promotion from an ecological perspective

We appreciate the opportunity to submit this revised manuscript. We thank the reviewers for their comments, which we have acted upon. Please find our detailed responses to each comment below.

Response to Reviewers’ Comments:

1. Gerjo Kok

Major Revisions

1. That [the store-turnover] method is not explained when mentioned the first time on the tops of page 4, while later the way that it is performed in practice is not completely clear.
The method is no longer mentioned in the introduction. Instead, it is now described in more detail in the methods section (p.7), following a clearer description of the project aims (p.5), which justify its use.

Moreover, one of the strategies, fruit-share, involves providing fruit and other activities. Is that fruit part of the store-turnover? Then the outcome is not surprising. I would also like more justification of the store turnover to be the appropriate measure for all activities for the community: “a cross-section of the community”.
The store-turnover was not intended to be ‘the appropriate measure for all activities for the community’. Rather it was applied to all food bought and provided to those accessing the Rumbalara Football Netball Club. This included the canteen, fruit-share program, meals for players and the breakfast program for juniors. Whilst the success and popularity of the fruit-share program explains some of the change over the year, there were also changes in other food groups that are of interest. We acknowledge that the description of the application and scope of the method was too vague. A number of changes have been made to rectify this: p. 5: Additional information has been provided under Setting (paragraph 1) to provide a better sense of the context of the project as a whole, and of particular relevance to the store-turnover, the reach and significance of the Rumbalara Football Netball Club (RFNC). On page 6, paragraph 2, approximate numbers of community members accessing the club are provided.

2. Table 1 presents the coding of activities. Category 1 is not self-explaining. However, I don’t see why this table is there because the results are presented qualitatively, which is fine, but the coding is not relevant here.
We agree that the coding of category 1 is not self-explaining but disagree that the coding is not relevant as the analytic procedure has been used to derive an ecological ‘score’ as outlined by Richard et al. (1996). We would argue that the table provides useful information for the reader. The table is mentioned for the first time in the preceding paragraph and therefore this would be the most appropriate place in the paper to insert it. We have added a reference to the table at the end of the ecological analysis (p.15).

3. Top of page 6: ‘Individuals intakes were not of interest’ needs a little elaboration.
This is addressed in the more detailed description of the method now appearing under Store Turnover on p.7. To paraphrase, individual intakes were not of interest because the store turnover method is a measure of the overall nutrition environment of the RFNC. To the discussion, paragraph 1, we have added: “This is significant because the RFNC is accessed by a large number of community members of varying ages, gender and socio-economic status who gather to participate in community activities (including but not limited to sport). The RFNC is therefore a vehicle for changing community norms relating to nutrition.”

4. Page 6: I always found the distinction between categories, settings and targets confusing. Why is interpersonal not a setting (families)? How can we have community as a setting but not a target? I understand that the authors follow the system of Richard et al. but some reflection in the discussion would be helpful.

Whilst a detailed critique of the coding procedure is beyond the scope of this paper, we have added a couple of sentences to the discussion to acknowledge that since the Richard et al. (1996) paper was published, subsequent work has sought to simplify and adapt the procedure, and that further adaptation could be beneficial to its continued use in the Aboriginal community context. See p. 19, Discussion, final paragraph: “Since Richard et al. [31] developed their analytical procedure, subsequent work has sought to simplify the procedure by discarding the somewhat confusing category of ‘settings’ and focusing on levels and agents of change [41]. Further work is required to better adapt the method for use in the community context and to incorporate indicators of health and its determinants specific to Aboriginal communities.”

Minor Revisions

5. Sometimes the notation is HP → ORG, sometimes HP → ORG → IND. I assume all activities are supposed to finally influence IND?

We have reviewed the coding and agree that the ultimate target for all activities is IND. We have now clearly stated this at the beginning of the presentation of the coding. See p. 12, under Ecological Analysis: “In each case HP refers to the health promotion program and the ultimate target is ‘IND’ referring to all individuals who are part of the target population, the Goulburn Murray Aboriginal Community.”

This required one change to the coding- the 10-week body challenge, targeting changes to workplace is now coded as HP → ORG → IND. (Table 4) and p. 13 line 6.

6. Page 7, reference 4 is not about Canada but the USA and the Netherlands.

This reference is about a diabetes prevention program in Montreal, Canada.

7. The Health Summer School is interesting in terms of ecology. On page 5 it is mentioned that the summer course targets health promotion practitioners. On page 11 that is presented as HP → IND and HP → ORG → IND. The first one is questionable as I would assume that IND always stands for the final target individuals. The second one is interesting because it describes a health promoter (probably from an organisation) targeting a health promotion organisation.

We agree that this is an interesting activity in terms of ecology. The justification for this coding is partly provided by the definition of ‘IND’ provided above (point 5). Since the participants in the summer school were members of the Aboriginal community, and the
course acted to increase their nutritional knowledge, this direct effect is coded as HP → IND. The course also acted to increase health promotion program development capacity within the organisations by educating the practitioners to implement programs back in the community. This strategy is coded as HP → ORG → IND. The description on p.13 has been re-phrased for clarity.

2. Lucie Levesque

Major Revisions

1. CONCLUSIONS

The sentence ‘...success of such integration relies on the inclusion of Aboriginal culture...’ does not flow from the results since Aboriginal culture and its impact were not assessed. This statement flows from the results of the second part of the ecological analysis questionnaire as described in the original submitted manuscript on page 7, paragraph 2. The second part of the questionnaire asked facilitators to identify barriers and facilitators to implementation, including the role of culture. However, this section of the analysis has now been omitted from the paper as it fall outside the original analytic procedure of Richard et al. 1996 being applied, as explained below (4. Results, Ecological Analysis, Facilitators and Barriers... )

2. BACKGROUND

-What is an Aboriginal model of health? A brief definition would be helpful given that readers may not be familiar with this model.
See p. 3, Background, paragraph 2.
-Which determinants of health exactly are ‘unique to this population’? For which Indigenous health determinants is there a gap in knowledge on how to evaluate the extent to which activities have addressed them? It is difficult to gauge the relevance of using ecological analysis without knowing what determinants are being addressed by the intervention program.
The background section has been re-worked to more clearly address these questions and to describe the rationale of the study. See in particular p. 3, paragraph 2, and paragraph 3.

Despite the emphasis of program activities on changing the food environment, no rationale is presented in the background to explain why the majority of program activities focus on eating. This section should be revised and re-shaped in a way that builds the study rationale.
As stated above, the Background section has been re-shaped. Background, paragraph 1, Line 6, now reads: “Dietary quality is widely recognised as a contributor to Aboriginal ill-health, including in this location”
The health promotion program had an overall focus on nutrition and physical activity, as and described under Aims (p.4-5) and Program development and activities (p.6). In fact the only two of the six activities focused solely on eating - focus groups and fruit share – and the latter took place in the context of a sporting club where physical activity is a central focus. The Hungry for Victory program explicitly targeted nutritional knowledge in the context of sporting performance. This has now been more clearly stated where the coding of this program is presented on p.13.
The study purpose is unclear. Is the goal to assess pre-post change in canteen offerings (the bulk of the paper reports on this)? Is the aim to assess integration of ecological principles in the intervention program? Is the aim to determine how the program was nested with the social environment of the community? If all of these aims are sought, then how do they fit together?
The aims are now clearly stated under ‘Aims’ following the background section.

3. METHODS

A more detailed description of the setting would be helpful. Is the program set in one circumscribed community or does it involve several communities? Why are interventions occurring in these specific locations?
More demographic detail has been provided under Setting, p.5 to clarify this. The role of the organisations in region is also described and provides some justification for these organisations as appropriate settings for health promotion. We have used the term ‘community’ throughout the paper to refer to Aboriginal people residing in the geographical region of the Goulburn Murray. We acknowledge that the term is difficult to define and prefer to instead to describing the setting as we have done on page 6.

Given that the focus is on the food environment, it would be useful to include geographic information, type of food regularly available at the sports club and description of the population that attends the club.
A description of the population attending the club and some geographic information has been included under Setting, p.6.
The types of foods regularly available at the sports club (that is, in 2005 prior to intervention) are described in the results of the store turnover analysis.

Population
Who is the intended population of this intervention? What is the size and make-up of the intervention/study population? What percentage of the community access the services of the 3 key organisations? What are their demographics (SES, age, gender, etc.)? This information would be useful to clarify and understand the context and relevance of the study.
The program targets the Aboriginal population of the Goulburn Murray region. Specific groups within this population targeted by the activities are described on p. 6, Program development and activities. This section now includes numbers of participants in each of the activities (these were previously presented in the results section of the ecological analysis), and an estimate of numbers accessing the RFNC. General information regarding the SES, age and gender of the target population are provided, however, in line with previous ecological analytic research, specific demographic details are not provided as they are not relevant to the analysis.

Program
How were the program activities delineated from regular activities conducted by the three organisations? What were the inclusion/exclusion criteria for considering activities as belonging to the program?
As stated on page 6, the program was developed by community practitioners and university researchers on the basis of prior research. All activities developed under the State-funded program were included in the analysis. This is now clearly stated on p.6 under Program development... line 3-4.
Store Turnover Analysis

What is the store turnover analysis? What research question is it answering?
The research question is now clearly stated under Aims, p. 5.
A more detailed description of the store turnover analysis is included under Methods, Store Turnover, p. 7.

The authors make the case for evaluating programs that are cultural acceptable using methodologies that might reveal aspects of the program that are culturally relevant in order to make the programs more appropriate for Aboriginal communities. Given that, from a cultural perspective, people eat food and not nutrients, it seems that a more relevant analysis would focus on types of foods, their meaning and acceptability, rather than on density and macronutrients.
The store turnover analysis does indeed focus on nutrients rather than food, and this is useful because it allows a comparison between the nutrition environment and CVD risk which is part of the research question being addressed.
We acknowledge, however, that the analysis has limitations. The following paragraph has been added to the Discussion (p.18, paragraph 2).
“We acknowledge that a focus on nutrients has limitations – people eat foods not nutrients – but this was necessary for comparison with national guidelines. An examination of the social and cultural meanings of the foods supplied, while of relevance, was beyond the scope of the present study. We note however that ethnographic research in an urban setting emphasised the ways in which food, eating and exercise can act to connect or disconnect Aboriginal people from family and community [7]. Importantly, the current changes were made in a manner and setting that supported social connectedness, not disrupting this cultural imperative as individual dietary plans can do.”

Ecological Analysis

HP should be defined. This is now defined under Ecological Analysis, sentence 3 (p.13)
The illustrative example of networking is wrong: a self-help group relying on interaction between clients (p.7) should be depicted as HP \rightarrow [IND-IND].
This discrepancy in coding was made consistently. We are happy to defer to the reviewers expertise in this area and have changed all instances where a HP relied on interaction as [IND-IND] rather than INT, apart from the mentoring program, which we understand to be targeting IND through the interpersonal relationship and is therefore correctly coded as INT. This does not change the overall result.

4. RESULTS

Store Turnover
Table 2 presents ‘trends’ in food groups, is that part of a statistical analysis and if so, what was that analysis? It is not appropriate to talk about trends with only two time points, at least three time points are needed to be able to see a trend.
We have changed ‘trend’ to ‘change’.

Moreover were there significant differences between 2005 and 2006? It is difficult to gauge program effects without this information.
Table 3 presents the contribution to energy from macronutrients in 2005 and 2006. Again if the purpose was to examine meaningful changes due to the program a statistical test
(eg. t-test or ANCOVA if co-variates are present) would be needed for examining significant differences over time and relate these to the intervention.

We have analysed nutrition data on the basis of the total food supply for the duration of the winter sports season for 2005 and 2006 (i.e. before and during intervention) at a single site. As such the data are not suitable for statistical tests of difference in means, and we have presented descriptive analyses only. While an argument could be made for analysing data on the basis of food supplied by weekly or monthly time periods in each year, this is a somewhat contrived analytical strategy and is subject to imprecision because perishable and non-perishable food items can be stored for different periods of time and are hence purchased on a different cycle. As indicated in the revised manuscript, store turnover data analysed in this manner are known to vary with biological markers of nutrition at the population level (last paragraph of page 7).

Ecological analysis

Under Hungry for Victory we are told that the “activity comprised four different activity (sic)” – how exactly was the unit of analysis determined? It is not clear how activity is being defined.

Apologies for this typing error, it now reads, the “activity comprised four different parts”. The unit of analysis (each activity) was determined by program facilitators, according to its objectives and targets.

Why are motivation and intention (eg. foster team spirit) coded separately? These are coded separately because they represent different strategies. To address any confusion, a little more detail has been added to this description of the coding (p.13) “This aimed to motivate participants to engage in the program (HP → IND) and foster team spirit, that is, promote a sense of connectedness and belonging within participants (HP → [IND-IND] → IND).”

Is it not the activity (eg. program launch) that should be coded? The program launch is coded as one of the parts of the activity. It could be coded as a separate activity, which would not change the outcome, but would not be consistent with the rest of the analysis.

Shouldn’t “foster team spirit” be coded as HP → [IND-IND]...? Coding issues have been addressed earlier (see above 3. – Ecological analysis).

Facilitators and barriers are presented in the results section yet there yet there is no mention which type of analysis was used. How were the reported labels generated? How many barriers and facilitators were found? Which were most mentioned? Not enough details are mentioned to justify these findings.

We agree that the analysis of the second section of the ecological analysis questionnaire was not given enough attention in the submitted manuscript. While this part of the evaluation did provide useful information, it falls outside of the specific focus of this paper and is not derived from Richard et al. (1996). As such, we decided that omitting this information from the revised manuscript would improve its focus and flow.

The following text was deleted:
- The questionnaire was in two parts. (p.7- original manuscript)
- The second part assisted in the interpretation of the above data. This included questions identifying environmental barriers and facilitators of implementation including available resources and the role of culture in design of the activity. (p.7- original manuscript)
- Facilitators and Barriers to Implementation
That the activity reflected culture and made use of local capacity was an important factor enabling the successful implementation of the majority of activities. Facilitators indicated that activities were mostly ‘designed within a cultural framework with some western influence’, two were ‘driven by culture’ (the Health Summer School and Cummeragunja Women’s Wellbeing Group) and two were ‘designed within a western framework with some cultural influence’ (the nutrition workshops and focus groups). Implementation was facilitated by community participation and a cultural way of organising. A detailed discussion of the meaning of culture is beyond the scope of this paper. Relatively few barriers to implementation were identified. A lack of human resources was the barrier singled out most frequently and some activities were deemed to be restricted by a lack of time (i.e. for program facilitators to run or complete the activity). (p.14- original manuscript)

This also required a re-working of the conclusion- this text was deleted or re-worked:

- The Aboriginal health promotion initiatives described here were consistent with an ecological model of health promotion, in that they addressed multiple settings, targets and strategies. The program was thereby effective in influencing the health environment of community members. The explicit inclusion of ecological principles in the planning of future activities is likely to lead to greater integration and/or coordination with other programs across the different community settings and to improve the efficiency of programs. This could potentially reduce the influence of barriers identified such as a lack of time and human resources. However, the data indicate that the success of such integration relies on the inclusion of culture and the use of local capacity in the design and implementation of activities. Further work is required to develop other indicators of health and its determinants specific to Aboriginal communities.

How do the store turnover and ecological analysis fit together? The added value of presenting these methods together is not addressed.
A number of changes made in response to earlier points address this issue.
- A clear statement of the aims of the study (p.5).
- The conclusion summarises the value of assessing environmental aspects of the program implementation, rather than focusing on individual outcomes (p.19). Since both these evaluation methods offer a way of doing this, we would argue that it will be useful for a reader interested in this type of evaluation to read about these together.

5. DISCUSSION

The study findings were not contrasted with those of similar studies. How do the present results fit with other program analyses using the Richard et al. tool?
The limitations of the study should also be mentioned here, what are they?
In addition to the limitations of the store turnover, mentioned above (3. Store Turnover Analysis), the following paragraph has been added to the discussion to address both of the above points (p.18, final paragraph):
“This was a pilot study limited by its small scale and relatively short time-frame. To the best of our knowledge, this is the first attempt to extend the use of either store-turnover or ecological analysis to a semi-urban Australian Aboriginal community context. We acknowledge that the application of Richard et al.’s [34] analytical procedure to one program comprising a number of activities departs somewhat from the studies assessing multiple programs for which the method has typically been applied [39, 43]. However, we would argue that this is a legitimate and useful application of the method as it allows practitioners to use the information to improve their own practice more directly by
incorporating the findings into the reflection and planning phases of participatory action research cycles, identifying leverage points for change and monitoring change in ecological ‘score’ over time. We note that since Richard et al. [34] developed their analytical procedure, subsequent work has sought to simplify the procedure by discarding the category of ‘settings’ and focusing on levels and agents of change [43]. Further work is required to better adapt the method for use in the community context and to incorporate indicators of health and its determinants specific to Aboriginal communities.”

Discussion topics do not flow from the results: on p.15, the authors state that “an important enabler of the work arose from the participatory nature of the project by drawing on local Indigenous cultural expertise...” This did not come out in the findings from the present analysis.

This discussion point arose from the qualitative data derived from the second part of the ecological analysis questionnaire, which have now been omitted from this paper.

6. CONCLUSION

It is not appropriate to conclude that the program was effective for influencing the health environment of community members when only the food / nutrition environment was assessed (and not the food environment).

As per the response above (4. RESULTS- second to last point), the conclusion has been revised. This has included deleting the reference to the health environment.

No statistical analyses were conducted

Please refer above to 4. METHODS, point 2 where the issue of statistical analysis has been addressed.

Nor is there any evidence in this paper to suggest that “the explicit inclusion of ecological principles in the planning of future activities is likely to lead to greater integration...and improve the efficiency of programs. Nor do the data indicate that the success of such integration relies on the inclusion of culture.”

Whilst we stand by all of these comments, we re-affirm our acknowledgement that the inclusion of the qualitative data from the second part of the ecological analysis questionnaire fell outside the primary aim of this paper which was to present the findings of the store-turnover and ecological analysis. Without this extra layer of analysis and interpretation, we believe that the aims and study rationale are more clearly expressed.

Minor Essential Revisions

1. TITLE

   The title of the paper is misleading since the social environment is not the main focus of the paper. Consider revising.

   The paper is now entitled:

   A pilot study of Aboriginal health promotion evaluation from an ecological perspective

2. BACKGROUND

   Sometimes the work Aboriginal is used and at other times the work Indigenous. It is recommended to use one term consistently throughout the paper.

   The term Aboriginal is used consistently throughout the paper.

   Rather than mentioning which ecological analysis method was used (ie Richard et al) and the “store turnover method” it would be preferable to present the rationale for using
these approaches in this section. More details about these tools could be provided in the methods section.
The background has been re-worked to more clearly describe the rationale of the study (as explained above) and the description of the specific methods is now confined to the methods section.

3. METHODS

Setting
‘The store turnover analysis concerns...’ is now in the methods section under Store Turnover (p.8)

Program Development and Activities
‘Relevant citations have been included after ‘participatory framework’; (p.8)


Store Turnover
The statement, “for context, observed nutrient densities...” has been moved to the results section (p.11)

Discretionary Revisions
All suggested discretionary revisions have been incorporated. These are:

1. The reference to chronic disease prevention has been replaced with health promotion. To specify the role of chronic disease prevention, the following sentence has been edited in the Background section: “The need for community owned and directed, culturally appropriate interventions that promote nutrition and physical exercise to minimise risk of chronic disease has been identified within this community” (p.4, paragraph 1).

2. The program description previously found in the Background section has been moved to the methods section.

3. We are satisfied that we have corrected those instances when ‘that’ was used to introduce a non-restrictive clause.

Many thanks,

Rachel Reilly, Marion Cincotta, Joyce Doyle, Bradley Firebrace, Margaret Cargo, Gemma Van den Tol, Denise Bulled-Morgan and Kevin Rowley for the Heart Health Project Steering committee.