Author's response to reviews

Title: Ethnic discrimination prevalence and associations with health outcomes: data from a nationally representative cross-sectional survey of secondary school students in New Zealand

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Author's response to reviews: see over
Crengle et al – response to reviewers and editors comments.

We thank the reviewers and associate editor for their thoughtful reviews and comments. We have indicated below in red font our responses to these comments.

Editors comments

All main comments of the two reviewers should be addressed. With regards to reviewer report 2 (27 September) compulsory revision 3 should be taken seriously. We have addressed all main comments – our actions in light of the comments are noted below in red font.

also in the light of the authors' own observation that "Due to the crosssectional design of the study we are able to report associations but not attribute causality". If causality cannot be established, what is the empirical basis for the policy recommendation that the authors give at the end of the manuscript? We have deleted the paragraph with policy recommendations and policy recommendations from the abstract.

We also need you to make the following changes:

1. Background section of abstract needs context info. Included
2. Please include an Abstract in your methods section. I have included a methods section in the abstract.

Reviewer Harris

Discretionary Revisions (recommendations for improvement but can be ignored)

Abstract
Results. Last sentence. Could delete ‘remarkably’. Deleted
Introduction
It may be useful for readers to have detail on NZ’s ethnic makeup and adolescent health inequities to provide context on how racial discrimination may contribute to such inequalities and on representativeness of participants. We have added information on ethnic makeup and adolescent health inequalities in NZ. Intro para 3 and 4
Results
I don’t think the prevalences of reporting ethnic discrimination for the total population are that important. Given that the biggest risk factor is ethnicity, the ethnic specific data are more important. This could be an area to cut back in order to address other comments. We have removed text about total population prevalences

Minor essential revisions

Overall
In general, the introduction is quite brief and could benefit from more detail, while the results could be shortened. We have expanded the introduction. Paras 3 and 4

General use of terminology
Sometimes the term ‘discrimination’ is used on its own rather than ‘ethnic discrimination’... ...the authors should be specific in their description as this can be a source of confusion in the literature. We have replaced ‘discrimination’ with ‘ethnic discrimination’ throughout the article
Other references
There are a few key references that are not cited in this paper that the authors may want to consider incorporating into the background and discussion where appropriate... these references have been incorporated into the article

Abstract
Study design. Add survey year. Added.
Study design. The second sentence starting... ‘Outcomes were the prevalence....’ Suggest starting this sentence by just saying, ‘The prevalence of.... were analysed.’, as ‘outcomes’ may get confused with health outcomes in regression analyses. In this sentence also suggest using, ‘experience of ethnic discrimination by health professionals, by police, and......’. I don’t think it should be ‘or the police..’ Amended as suggested.

Results. Sentence one. Specify ethnic discrimination. Amended as suggested.
Results. ORs are usually presented to 2 decimal places. Amended as suggested.

Introduction
The introduction was quite brief. It could benefit from more detail in some parts and breaking into paragraphs. Introduction expanded. Paras 3 and 4.
First two sentences.... it would also be useful to situate this definition in the wider construct of racism as a social system that results in power and resource inequities by ethnicity.
Sentence about racism added. Intro para 1.
Sentence beginning, ‘Among adult populations....’ In health, research is wider than UK, US and NZ e.g. Australia, Europe, South Africa, Canada etc, although still dominated by the US. A more general comment regarding experience of racism across a number of countries, including NZ, may be better. We agree with the reviewer that research is wider than UK, US, NZ. We have added Australia (and its associated reference) but have otherwise left the sentence as written as the references refer specifically to these countries.

Sentence beginning, ‘A range of adverse......’. Need to specify the link between experience of racial discrimination and adverse health outcomes in this sentence. Amended as suggested
Should also mention the link to health service utilisation measures in this summary. Sentence added.

The introduction/background should also make the link between racial discrimination and ethnic inequalities in health. Sentence added

Methods
Para 2. Specify the order of prioritization Amended as suggested.
Para 3. SEP is a broad construct. Either delete SEP and say, Three socioeconomic variables were included in the analyses: ....’ or, leave it in and say, ‘Three variables measuring aspects of SEP....’. Amended as per second suggestion
Para 3. Provide information on food security (i.e. never vs ???), housing mobility (i.e. more than x number of times vs ??) and age categories. Information provided.
Para 4. Describe the ethnic discrimination categories/response options e.g. yes, no, unsure and timeframes. Information provided.
Para 5. A bit more detail on how variables were categorised would be useful e.g. Self-rated health (poor/fair vs good/v good/excellent), etc. Information provided.
Para 6. Sentence beginning, ‘Logistic regression modeling.....’ Need to say, ‘was employed to analyse the association between ethnic discrimination and health
outcome variables. Amended as suggested.

General. Need to comment on what was done with missing variables. We have added the following sentence to methods para 6. ‘Only participants with data on discrimination variables have been included in the analyses. No imputation has been done for missing variables.’ We have also added the ‘N’s for each ethnic discrimination variable and the ‘any ethnic discrimination’ variable to table 2.

Results
Para 1. Sentence 1. ‘student’ should be ‘students’. Amended as suggested.
Para 1. An indication of age range would be useful as the categories of <=13 and >=17 suggest that the age range could be quite wide. We have added the following to para 1 of the results section ‘The median age was 14 years with approximately 99% of students aged between 13 and 18 years and about one percent aged less than 13 years or over 18 years of age (data not shown).’
Para 3 beginning, ‘In unadjusted bivariate analyses…’. Data in this para refer to Table 3. There are a number of sentences in this para that begin with, ‘A significantly higher (or lower) proportion…’. While technically correct it is quite difficult to follow. Given that the main findings are the adjusted associations between racism and health in Table 4, I don’t think these results need as much description as they have. This para could be summarized and made shorter.
Para 3. Sentence beginning, ‘A significantly higher proportion…’ Need to say higher than what. Para 3, next sentence beginning, ‘A significantly higher proportion of these participants (ie…). This was a bit confusing following the previous sentence. Clarify.
We agree with the reviewer that the main findings are the adjusted associations with racism and health. We have removed the more detailed discussion of the table 3 findings but have left a general statement that the unadjusted bivariate analyses found significant associations between experiencing ethnic discrimination and the health outcomes. Results para 3

Para 4, beginning, ‘Logistic regression analysis…’. Change ‘SEP variables’ to ‘socioeconomic variables’. Amended as suggested

Tables
It is usual convention to present percentages to 1 decimal place and odds ratios to 2 decimal places. Amended as suggested
Tables should be able to stand alone i.e. be read and interpreted without reference to the text. Some more detail in the titles, labeling and notes is therefore needed (see below).
Table 1
The title needs clarification. It does not seem to have any information on prevalence of discrimination as the title says. Delete this and clarify title. Specify the survey and year in the title. Amended as suggested
Should NZDep96 in table be NZDep2006? Yes! Amended.

**p<0.0001 in the Table note. I’m not clear which significant differences this is referring to in each category or whether it is p for trend or proportions. Suggest deleting. The confidence intervals give enough information on precision and statistical significance. Amended as suggested
Percentages should be to 1 decimal point. Amended
Table 2
Because this table contains crude prevalences (or percentages) and adjusted comparisons between ethnic groups I suggest clarifying this in the title e.g. Ethnic discrimination, crude prevalences by ethnicity and adjusted comparisons between ethnic groups, Youth survey 2007. Then put table note that ORs compare the odds of reporting racial discrimination among each ethnic group compared to NZ European adjusted for x, x, x. Amended as suggested
Should NZDep96 in table note be NZDep2006? Yes! Amended
ORs should be to 2 decimal places. Amended
Table note. The OR looks like it uses NZ European ethnic discrimination as the reference rather than ‘no discrimination’ as described. Clarify if this is the case. We have amended the table note to read ‘Odds ratios compare the odds of reporting ethnic discrimination for each ethnic group using NZ European as the reference group and are adjusted for age, sex, NZDep2006, food security, housing mobility’. (Table 2)
P<0.0001 delete. Again, the 95% CI provide enough information and I’m not sure this applies to all analyses but may apply to all logistic regression analyses. Amended as suggested
Title. Specify experience of ethnic discrimination, survey and year. Amended as suggested
Labels. Sometimes 95% CI is broken over two lines. Corrected
Table 3
Specify ethnic discrimination in title and in the table heading. Amended as suggested
Specify that results are ORs. Amended as suggested
ORs should be 2 decimal places. Amended
Should NZDep96 in table note be NZDep2006. Yes! Amended
Discussion
General
There are some quite definitive statements about this study being the first to achieve certain things. This may well be the case, but the authors need to be quite sure about this otherwise qualify these statements. A major strength of this study is that it contributes to the very limited evidence of racial discrimination and health for indigenous youth. I think this is worth mentioning in the discussion. We have revised the first paragraph so that it is less definitive and included a sentence about indigenous youth. Discussion para 1.
Para 1. Specify ethnic discrimination ie by health professionals etc Amended as suggested
Para 1. I suggest rewording this para to be less definitive about it being the first study to do the things discussed here... ...I suggest rewording this para to discuss the findings in terms of the study contributing to a very limited field of literature internationally... We have revised the first paragraph so that it is less definitive. Discussion para 1.
Para 3. Slightly repetitive of results. We have used the BMJ’s ‘structured discussion’ guidelines to write the discussion. This guideline recommends a brief summary of the major findings in the discussion. We have chosen to leave this paragraph in the discussion. We have also moved this sentence ‘The adverse associations between being ‘unsure’ about ethnic discrimination and health/wellbeing outcomes were remarkably similar to those who reported ‘yes’ to experiencing this ethnic discrimination. Our results suggest that for both ‘yes’ and ‘unsure’ groups ethnic discrimination may be an important determinant of health and wellbeing.’ to the end of para 3
Para 4. Reword, ‘Our findings found.....’ Amended as suggested
Para 5. Sentence 1. Add ‘all other ethnic groups in the current study...’ Amended as suggested
Para 5. Last sentence. Also Norwegian paper by Bals et al. has data on ethnic-related bullying This paper used a five item scale to measure perceived discrimination. One of the
items was ‘i have been teased or insulted because of my ethnic background’. However this item was not reported separately. Consequently, we have not referred to this study. Para 6. Final sentence. Specify ‘any ethnic discrimination’. Amended as suggested
Para 7. Suggest discussing findings for people who report ‘unsure’ for racial discrimination in the context of literature on ‘attributioanl ambiguity’ and ‘anticipated racism’. We have added a sentence referring to attributional ambiguity. ‘We are unable to ascertain whether students who responded they were ‘unsure’ were unsure whether they had experienced discrimination, or were unsure whether this was because of their ethnicity. ‘Unsure’ responses may reflect attributional ambiguity where the experience is ambiguous and difficult for recipients to label as discriminatory.’ Note we have moved this comment to the limitations section. This revision is in para 8.

Para 7. The authors should also comment on the limitation of the ethnic discrimination questions only capturing a limited experience i.e. ethnic discrimination can be experienced in a number of other settings and in a number of different ways. Additionally, these are measures of individual experience of racial discrimination and may not capture subtle or institutional forms of discrimination well. Sentences added to address these comments. ‘Participants were asked about their experience of ethnicity-related bullying and ethnic discrimination by health professionals and the police. There are a number of other domains where participants may have been exposed to ethnic discrimination, for example by staff at schools and in other social settings, which have not been included in the current study. Furthermore, institutional forms of discrimination are unlikely to have been captured by the measures used in the current study. As a result our findings may underestimate the overall experience of ethnic discrimination experienced by participants.’ Discussion para 8.

Major compulsory revisions
None

Reviewer Asakura

Major Compulsory Revisions
1)The authors examined the associations between health and wellbeing measures and experiences of discrimination for controlling ethnicity, so that we cannot identify the ethnic differences in these associations in this study (Table 4)...

...Although I understand the purpose of the present manuscript is a descriptive nature, I encourage that the authors should examine the association by each ethnic group, because I believe the authors accessed the quality dataset and have a chance to contribute further to the relevant scientific knowledge by doing so. We have tested for interactions between ethnicity and ethnic discrimination for each of the health outcomes. Where significant interactions were present (depression, smoking and school achievement outcomes) we have reported ethnicity stratified logistic regressions for associations between experiencing ethnic discrimination and these variables in a new table (Table 5). Where no significant interactions were identified (general health status, alcohol, feeling safe in the neighbourhood) the total sample logistic regressions for associations between ethnic discrimination and the outcomes have been reported (Table 4). We have described these findings in results para 4 and para 5.

2)Discussion section is not satisfactory to me. For example, the authors state ethnic Asians have the highest self-report of being bullied at school, but you do not explain why they are more likely to be bullied. I understand the result is consistent with the previous survey. I expect the readers will understand better
by your further interpretation on such ethnic difference. *Neither our study, nor the two references used in the discussion of this finding provide information about why Asians have the highest self-reported ethnicity-related bullying.* We have included the following ‘While the studies noted above were not designed to explore the reasons for this perception, a small pilot study of secondary school students in New Zealand suggests that inter-ethnic ‘intimidatory practices’ that are experienced commonly by visible ethnic minorities of Asian origin may reflect the considerable level of social distance (separation) between ethnic groups and prevalent misconceptions about acceptance and ethnic differences in the wider community. These issues require further exploration alongside consideration of potential intersecting issues such as the experience of being (in some cases) newer migrants.’ Discussion para 5.

3) Even if briefly, it is necessary to interpret the findings related to associations of ethnic discrimination to self-rated health, depressive symptoms, health behavior, sense of safety, and self-rated achievement. We have included a brief discussion of potential mechanisms between experiencing ethnic discrimination and adverse health outcomes. ‘Due to the cross-sectional design of the study we are able to report associations but not attribute causality. Other literature discusses hypothesised mechanisms and pathways between experiencing ethnic discrimination and adverse health outcomes. Williams and Mohammed describe three potential pathways through which experiencing ethnic discrimination may adversely affect health. They argue that exposure to stress (ethnic discrimination) results in psychological distress that adversely affects health; that behavioural coping strategies to manage stress may include unhealthy behaviours such as smoking and alcohol misuse; and that psychological and behavioural responses to stressors can lead to structural and functional alterations in physiological systems. Personal and social factors such as the strategies used to cope with stressors, social support, level of vigilance and anticipatory anxiety about ethnic discrimination, ethnic identity, and ethnic group identification may also moderate or mediate the effect of experiencing ethnic discrimination on health outcomes. Bals, Turi, Skre and Kvernmo found that ‘enculturation factors’ such as participation in cultural activities and Sami language competence were associated with decreased mental health problems among Indigenous Sami youth. However the interactions between enculturation/ cultural resilience, experiencing ethnic discrimination and health outcomes require further elucidation.’ Discussion para 7.

Minor Essential Revision
1) I don’t understand what the number below percentage means (e.g. 16, 22). I guess, “95% CI” would be necessary in Table1. ‘95% CI’ added to the table header row
2) In Table2, “95% CI” and “% 95% CI” are mixed. Please check carefully and express consistently in Table2 and Table3. Corrected