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Title	Explaining the gaps in psychological distress and suicidal behaviours between non-Indigenous and Indigenous adults living off-reserve in Canada: a cross sectional study
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Reviewer 1	Anders Hjern
Institution	Centre for Health Equity Studies, Karolinska Institutet/Stockholm University, Stockholm, Sweden
General comments (author response in bold)	<p>This article presents an analysis of psychological well-being and suicidality in the indigenous section of a Canadian household survey. Considering the high suicide rates among the Indigenous populations in Canada, the topic is important in a public health perspective. The article, however, has a narrow statistical perspective that leads to problematic conclusions.</p> <p>We would like to thank for the reviewer's comment. As the reviewer noted, the paper addresses an important public health issue considering the high suicide rates among the Indigenous populations in Canada. We are aware of the limitations of the paper. The Limitation section of the paper provide a detailed explanation of the limitations of our study.</p> <p>1. The introduction lacks important contextual information for non-Canadian readers. More contextual information is needed about the history of these indigenous populations and the way they have been assimilated into the general population in terms of housing, employment and family formation.</p> <p>We substantially revised the Introduction of the paper (see the first and second paragraphs) to provide contextual information highlighted by the reviewer.</p> <p>2. Populations living in reservation were excluded from this study. Why? What does that imply for the generalisability of the findings to all indigenous populations?</p> <p>We agree with the reviewer that we need to focus entire Indigenous population both living on- and off-reserve to provide a better understanding of inequalities in mental health faced by Indigenous peoples in Canada. We focussed on off-reserve Indigenous population in our study because, as we highlighted in the Data section of the paper, the Canadian Community Health Survey Mental Health (CCHS-MH) does not contain information on on-reserve Indigenous population in Canada. In response to this comment, we discussed the generalisability of the findings in the Limitation section of the paper.</p> <p>3. The giant in the study of psychiatric problems in the indigenous population in Canada, Lawrence Kirmayer, is included twice in the reference list, but his cross-cultural perspective on the mental health of these populations is not all integrated into the theoretical framework used to interpret the results. In studies of indigenous populations, Kirmayers perspective of the special experience of colonisation and social defeat experienced by indigenous populations is key in prevention. I suggest the authors read Wexler L, Chandler M, Gone JP, Cwik M, Kirmayer LJ, LaFromboise T, Brockie T, O'Keefe V, Walkup J, Allen J. Advancing suicide prevention research with rural American Indian and Alaska Native populations. Am J Public Health. 2015 May;105(5):891-9. to get a broader understanding of the importance of this perspective.</p>

We would like to thank for these thoughtful comments. We read the paper suggested by the reviewer and incorporated the study suggestion when we discussed the policy implications of our results in the Conclusion section of the paper.

4. In comparative studies of indigenous populations and majority populations there are special measurement challenges. Do the scales used to create the outcome variables in this study measure majority and minority population on the same scale? And does the socioeconomic position (SEP) of the individual have the same meaning in the majority and minority population? And to what extent does the collect experience of social defeat interact with the individual SEP? We don't know and the issue is not even discussed.

We agree with the reviewer that we must be cognizant about the suitability of measures developed in the general population and applying to the Indigenous populations. We used the 10-item Kessler Psychological Distress Scale (K10, see Appendix A) to identify psychological distress of individuals. As we highlighted in the Variables section, the K10 is shown to be appropriate and valid for use in Indigenous populations living on- and off-reserve in Canada (references #19-22). As the reviewer rightly mentioned, the socioeconomic position (SEP) of the individual included in our study (i.e., equivalized household income, education, employment status, household arrangement and homeownership status) may have different meanings among Indigenous and non-Indigenous population. Since the current literature has not explicitly focused on these differences, we could not discuss these differences in the paper in the context of our study. This issue needs to be highlighted in future studies.

5. The dropout rate needs to be presented and interpreted separately for the indigenous populations in focus in this study.

Potentially differential dropout (missing) observations between Indigenous and non-Indigenous populations is an important issue. For our study, we accessed confidential master file of the CCHS-MH through Statistics' Canada Atlantic Research Data Centres (ARDC). Unfortunately, the Centre has been closed for researchers due to COVID pandemic, and we are unable to release this information from the ARDC and report in the paper. As the number of dropout (missing) observations was very small in our analyses (about 3-4%), we do not think this is a major issue. If the reviewer thinks strongly that we should discuss this issue and report the numbers in the paper, we are happy to wait until the ARDC reopens for the researcher and incorporate this information in the paper.

6. The article presents the statistical analysis in a unsatisfactory way, with the presentation of too many completely uninteresting decimals in many places. Scientific writing does not only imply the good use of advanced statistical methods but also the good storytelling of these results in the tables. These tables could be much condensed, without losing any important information.

We made an effort to enhance readability of the Results and Discussion sections, so our main stories are more apparent. We followed the CMAJ style to present our results in terms of decimals and presented our results into three main tables and one Figure. The first table provide descriptive

	<p>statistics of the variables used in the study. Table 2 contains regression results. Table 3 provided a condense results of the decomposition results, with detailed results reported in the supplementary online material.</p> <p>6. Considering the validity problems of the key variables in this study, this study cannot calcualte the true importance of the SEP variables for the outcomes . In the end, this study doesn't add anything that was not already known about the role of SEP for mental health and suicidality in the indigenous populations in Canada.</p> <p>We agree with the reviewer that our study is nowhere perfect. However, there is scant literature that aims to quantitatively explain inequalities in mental health outcomes between Indigenous and non-Indigenous population Canada although the issue has been well acknowledged. In this study, for the first time, we analysed data from the recent CCHS–MH to quantify the extent and explain various demographic, socioeconomic and geographical factors that account for inequalities in psychological distress, suicidal ideation, and suicide plans between Indigenous peoples living off-reserve in Canada and non-Indigenous Canadians. We believe this is the unique contribution of our work to the existing literature.</p>
Reviewer 2	Jitender Sareen
Institution	Department of Psychiatry, University of Manitoba, Winnipeg, Man.
General comments (author response in bold)	<p>The study examines sociodemographic differences between indigenous and non-indigenous people in Canada using the National Canadian Mental Health survey. The study has several strengths: 1) Well Written 2. Important topic 3) Sophisticated analysis.</p> <p>Thank you.</p> <p>Limitations:</p> <p>-Cross-sectional data precludes causal inferences</p> <p>We highlighted this as one of the limitations of our study in the paper.</p> <p>- Mental Disorders were assessed in the survey using the CIDI- How come these variables were not included in the analysis?</p> <p>We selected psychological distress and social behaviours in our study because these variables are often used and well-validated variables in the existing literature.</p> <p>- The findings show that the differences between the populations are related to several sociodemographic factors which are not surprising or novel. Yet the conclusion, suggests - Improving socioeconomic covariates.....may reduce inequities. However, this conclusion goes beyond the data. Did the authors mean sociodemographic factors- income was not the only difference noted, lower education, age...</p> <p>As shown in Figure 1, demographic factors (age, gender and marital status) contributed to the observed inequalities in mental health outcomes between the two population. We specifically focused on factors that can be subject to public policy such as income and employment status. As we highlighted in the Conclusion section of the paper, these factors can be subject to policy implications. We specifically noted that “Our study suggested that policies designed to improve major contributing socioeconomic determinant of</p>

health such as income may help reduce inequalities in mental health outcomes between Indigenous and non-Indigenous populations.”

- The Figure is difficult to interpret

The legend of the figure was missing from the previous submission of the paper. We now included the legend of the paper. We hope the Figure is now easy to interpret.