Reviewer’s report

Title: Defining the gap: A systematic review of the difference in rates of diabetes-related foot complications in Aboriginal and Torres Strait Islander people and non Indigenous Australians

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Reviewer: Elizabeth Barr

Reviewer's report:

JFAR-D-17-00065: A systematic review of the prevalence of diabetes related foot complications in Aboriginal and Torres Strait Islander Australians.

Thank you for giving me with the opportunity to review this interesting systematic review on the prevalence of diabetic foot complications among Aboriginal and Torres Strait Islander Australians compared to non-Indigenous Australians. Overall, the authors have provided a thorough review of the evidence and have undertaken the difficult task of summarising rather disparate data. However, the authors could improve the paper by excluding results on incidence of complications and risk factors for complications, as this data is not related to the aim of the study, which is to report on the prevalence of complications. Specific comments are outlined below.

General comments

1. There are a few typos throughout the manuscript that need attention. At times the readability could also be improved to make it clear what comparisons are being made.

2. Should the term Aboriginal and/or Torres Strait Islander Australians be used instead of "Aboriginal Torres Strait Islander"?

3. It would be helpful to add page numbers to the manuscript.

Abstract

The abstract could be refined to reflect changes suggested below in the body of the paper.
Background

4. Some of the referencing could be modified to refer to the most recent AIHW and ABS reports/data.

a. The authors refer to 2005 AIHW report in this statement: "In 2005, the age-standardised self-reported rate of diabetes was nearly four times greater among Aboriginal and Torres Strait Islander people than among non-Indigenous Australians (3)". However, it may be better to report the findings from the more recent 2012-13 NATSIHMS survey. (Ref: Australian Institute of Health and Welfare 2015. Cardiovascular disease, diabetes and chronic kidney disease—Australian facts: Aboriginal and Torres Strait Islander people. Cardiovascular, diabetes and chronic kidney disease series no. 5. Cat. no. CDK 5. Canberra: AIHW). Furthermore, the systematic review by Karl Minges et al. (Diabetes Research and Clinical Practice 2011, 93: 139-149) also reports on diabetes prevalence in Indigenous Australians.

b. Both the 2005 (ref 3) and 2008 (ref 11) ABS reports on The Health and Welfare of Aboriginal and Torres Strait Islander Australians are referred to in the background. It would be preferable to report findings from the most recent ABS report. (ref: http://www.aihw.gov.au/indigenous-observatory/reports/health-and-welfare-2015/ Actually, the ABS survey is referenced in ref.10)

Methods

5. Could the exclusion criteria as represented in Figure 1 also be listed in the Methods?

6. Why were studies only including Indigenous Australians excluded? Prevalence estimates from one study with only Indigenous Australians can be compared to prevalence estimates from another study of non-Indigenous Australians, providing that prevalence from each study is standardized to the same population, and/or age- and sex-specific prevalence be extracted for comparison.

7. Why were longitudinal studies included when the aim of the analysis was to report on prevalence of diabetic complications? Prevalence estimates are best drawn from cross-sectional data, which could include baseline examinations of longitudinal studies. Longitudinal studies are required for extraction of incidence data and to determine risk factors for incidence.

8. Did all the studies need to report all the complications listed on page 5? Or at least one of the complications? If at least one complication then the word "and" should be changed to "or …wound infection".
9. The information on data extraction needs further explanation. Some of the items listed for data extraction do not seem to be relevant for a study on prevalence. For example: data on "intervention", "follow-up duration", and "outcome measures eligible for and not eligible inclusion". Other extraction items that would be important for a study on prevalence include: selection criteria, mean age and age range of the cohort, gender, ethnicity, geographic region (state and urban/remote setting), study types (including population based and hospital audits), method of data collection for complications (i.e. measured, hospital records, self-report), type of diabetes, and type of complication.

Results

10. The summary of study characteristics could be refined. There is a lot of information included in Table 2 that does not specifically refer to prevalence of complications. For example the "incidence of admission to hospital". Can additional sub-headings or columns be provided in Table 2 to make it easier for the reader to compare characteristics between studies? For example geographic location (state), setting (urban or remote), gender (proportion of men and women), sample size (total and for Indigenous and non-Indigenous participants), mean (SD) and/or range of age of the sample, complications reported and the crude and if available age-standardised prevalence rate for Indigenous and non-Indigenous participants etc.

11. It would be clearer to extract the proportion (%) of participants with the complication in each population group (Indigenous vs non-Indigenous) rather than reporting the odds ratios or relative risks in the table. Since the aim of the paper is to report on prevalence of complications in Indigenous and non-Indigenous Australians, and not risk factors for complications.

12. I found the information obtained from the clinical audits difficult to interpret with respect to the aims of this study, as the denominator is not clear for these studies. For example if the clinical audit is on all amputations in WA then how do we know what proportion of these amputations were among those with diabetes? It will also be important to highlight the study populations in each audit as a study based on a dialysis population will be very different to one on general admissions.

13. If the data from FDS were inconsistent between study phases why were the data pooled? How was data pulled? Could the inconsistencies be reported? Perhaps these inconsistencies reflect the small sample size of Indigenous Australians in these studies?

14. Can the results be summarized in terms of age-specific and setting or region-specific prevalence rates, as this forms much of the discussion?
15. Clarify what 'regional populations' mean in last sentence of the results section? Could the data on prevalence be reported for the study populations and the regional population? How were foot complications defined in this study, which complications are the study referring to?

16. Given that complications are reported to occur at a younger age in Indigenous Australians compared to non-Indigenous Australians it would be interesting to report age-specific prevalence rates if available.

Conclusions

17. Given that the aim of the paper is to report on the prevalence of diabetic complications, could the conclusions be modified to focus on prevalence results rather than incidence and risk factors for complications as these are different concepts? For example, there is discussion on the incidence of amputations among those with foot infections, however, this is not prevalence of complications.

18. This statement in the discussion requires further clarification: "Given that Aboriginal and Torres Strait Islanders are likely to experience diabetes related foot complications at a younger age it is expected that rates of these pathologies (including hospitalisations, surgery and amputation) in this population will increase unless concerted efforts are made to address this growing problem." I don't understand how age of experiencing foot complications leads to an increase in future rates? Perhaps the emphasis here could be on the burden of foot complications for Indigenous Australians is much greater in terms of impact of quality of life etc. because complications occur at a younger age?

References

19. The formatting of the references needs attention.

20. The full journal reference should be included as some references only refer to the web site and not the volume, issue and page number.

21. Why does reference 9 refer to a reprint of a Diabetes Care paper? Perhaps the original paper should be referenced?

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