Author’s response to reviews

Title: Dental Care Use in Ontario: the Canadian Community Health Survey (CCHS)

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Author’s response to reviews:

Dear Editor,

Thank you for your kind consideration of our paper. We would like to express our gratitude for the reviewers’ input and comments. Please find below our reply to their queries made point by point. Please note that the reviewers’ comments are indicated below in italics and the changes introduced to the manuscript are indicated in bold with their location outlined in the replies below.

Reviewer 1:

We thank you for taking the time to review our paper, and for the opportunity to re-address our work.

Note: Thank you for your feedback. Please note that the sections highlighted in bold are parts added or amended within the manuscript. Before addressing the reviewer’s specific comments, the authors would like to reiterate that the paper submitted is based on a secondary analysis of pre-existing data, namely the Canadian Community Health Survey (CCHS), previously collected by Statistics Canada. The CCHS is a geographically representative survey that collects demographic and socioeconomic information of respondents, as well as self-reported information pertaining to health status and health behaviours. Moreover, the preliminary study conceptualization, sample size calculation design and data collection has been performed by Statistics Canada. Therefore, the authors have no control over the questionnaire development, the measures used and their validity, the sampling procedure, and data collection performed since they have not been involved in the process. Furthermore, the CCHS study is a publically available dataset that has been widely used and published from by researchers across Canada.
INTRODUCTION

1. Page 0 line 24 and rest of the manuscript: Change "prevalence of dental care use" to "frequency of dental care use" or "pattern..", since dental caries use is not a pathology.

Reply: This has been amended accordingly in the manuscript.

2. Page 1 line 20: ..in improving health outcomes among the general population, " reference needed

Reply: Thank you for your observation. This has been amended with the following reference cited within the paper on P.1, and added to the reference list: Griffin SO, Jones JA, Brunson D, Griffin PM, Bailey WD. Burden of oral disease among older adults and implications for public health priorities. AmJPH. 2012;102(3):411-8.

3. Page 1 line 31 add something related that, even this usually recommended, there is no evidence showing any difference between people who attend regularly to dental checkups and who don't. See:


Reply: Thank you for this remark and for the references provided. Please note that the following paragraph was added on P.2, lines 10-17: “Conflicting and inconclusive evidence as to the oral health benefits of routinely attending dental care for checkups exists. According to systematic reviews, no high-quality evidence is available to support or refute recommending dental attendance to adults with a frequency of less than once a year or any other specific frequency [15-17]. However, some observational studies have shown that individuals who visit a dentist regularly have better clinical and perceived oral health than their counterparts [18-21]. Therefore, the recommendation to have an oral examination on a regular basis remains a key practice in preventive dentistry.”

4. Page 2 line 32, reference 15. Cited research was not aimed to the statement declared in the manuscript, aimed to assess the impact of oral health on quality of life, not the effect nor
importance of regular dental visits. In fact, there is no mention to visits or recall at all in the cited paper. Fix this. Major issue.

Reply: This has been amended accordingly in the manuscript,

with the following reference cited within the paper on P. 2, and added to the reference list: Crocombe LA, Broadbent JM, Thomson M, Brennan DS, Poulton R. Impact of dental visiting trajectory patterns on clinical oral health and oral health-related quality of life. J Public Health Dent 2012;72:36–44.

METHODS

5. The method section could be greatly improved if the manuscript follows the recommendation for the report of survey research from Kelley, K., Clark, B., Brown, V., Sitzia, J., 2003. Good practice in the conduct and reporting of survey research. Int J Qual Health Care 15, 261-266.

Reply: Thank you for this suggestion. The methods section has been revised with the recommendations of the aforementioned paper in mind.

6. Provide a brief description of the research tool.

Reply: Please note that the following was added under the Data Collection section of the paper on P.3-4: “Data collection was made using the CCHS questionnaire designed for computer assisted interviewing (CAI). The survey consisted of a 45-min interview, conducted either over the telephone or in person. Analysis was restricted to CCHS participants from the province of Ontario, as the dental visits and oral health modules was part of the CCHS 2014 cycle’s optional content. Optional content is chosen by provincial and territorial stakeholders in coordination with health regions and is only asked in provinces and territories that selected the module for that year.”

7. Include the description of the sampling design (target population (to whom these results can be extrapolated), the eligible population and source population) and the sample size calculation.

Reply: Please see note made at the beginning of the section. The CCHS covers approximately 98% of the target population. A detailed description of the CCHS methodology used, sources and instrument design can be found on the Statistics Canada website: http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3226
Moreover, information on the CCHS and the target sample has been previously provided within the methods section on P.3, lines5-20: “The CCHS is a cross-sectional survey that aims to provide health-related information at the regional and provincial levels. It contains detailed information on health status, health care utilization, and an overview of health risk factors of the Canadian population. A more detailed description of the CCHS design and sampling procedure can be found on the Statistics Canada Website. The CCHS data collection began in 2000 and was conducted every two years until 2007, when it was operated on an annual basis. The target population of the CCHS consists of individual aged 12 years and older, living in the ten provinces and three territories of Canada. However, people living on Indian reserves, residents of institutions and full-time members of Canadian Forces have been and continue to be excluded as the survey is intended to be representative of individuals residing in private households....”


Reply: Thank you for your remark. As per the reviewer’s comment, we added the following phrase on P. 2, line 3: “Ontario is Canada’s most populated province, with approximately 14 million residents, 20% of whom are visible minorities.”

9. Provide information about the ethical clearance of this research.

Reply: Please note that ethical clearance information was not added within the paper as ethical review is not a requirement. Since many universities, including York University decided that secondary analysis using Statistics Canada data, does not require an ethics review, therefore our project does not need an ethics review. Also, access to data is contingent upon security clearance by Statistics Canada, and becoming a deemed employee of Statistics Canada. As a deemed employee of Statistics Canada, the corresponding author has the right to access the data specified in the contract under the Statistics Act. For more information, please see the following: http://www.statcan.gc.ca/eng/rdc/faq#a11a

10. Define clearly "poor dental care use".

Reply: This study looks at two distinct outcomes: time of last dental visit, and reason for visiting the dentist. The first outcome, recorded as a binary variable, as last dental visit < 1 (regular or routine) year versus ≥ 1 year (irregular or non-routine). The second outcome also made binary, as reason to visit for check-ups versus emergency. This recoding was done in consistence with Muirhead et al (2009). Poor dental care use in this study is defined as irregular dental visits and/or visits only for emergencies, in order to encompass both outcomes when interpreting the results. Note that while definition is not commonly seen in the literature, it is based on the
11. Clarify which one was the dependent variable. Related to the previous issue, is not clear how was the classification, e.g. a person who attended regularly and also made an emergency visit.

Reply: Please see preceding comment regarding outcome variable definition. Regarding potential overlap between the two outcome variables, it is possible that a person who attended regularly could have also made an emergency visit, however a person who never visited the dentist would not have made an emergency visit. The same sample is being considered for both outcomes, as was also done in the study by Muirhead et al (2009) and Amarasena et al (2016) https://www.ncbi.nlm.nih.gov/labs/articles/26853201/

12. Explain the rationality of the statistical analysis. Seems more appropriate to use an ordinal logistic regression with the dependent variable ordered from regular visit/good dental care use to irregular, only emergency and no dental care use, with regular visit as the reference value.

Reply: Outcomes were both made dichotomous, ie binomial, and there was no degree/severity of use; therefore binary logistic regression was the most suitable technique used for the analysis.

RESULTS

13. Omit “almost” and any opinion or declarative statement, and provide the exact number or percentage.

Reply: This has been amended accordingly in the manuscript.

14. Check the journal style for the report of significant differences/associations: bold? asterisks?

Reply: This has been amended accordingly in the manuscript.

15. Since is not clear the output, is difficult to interpret the results: the independent variables are risk factors for poor dental care use or indicators of poor dental care use. Clarify.
Reply: The independent variables are correlates or associated factors of dental care use. They cannot be deemed risk factors as this is a cross sectional study and nor are they considered indicators since the majority of the variables are categorical, not continuous. Moreover, logistic regression provides a quantified value for the strength of the association between one factor and an outcome while adjusting for other variables. The exponential of coefficients correspond to odd ratios (a measure of association) for the given factor.

Please see recent articles that have employed similar terminology, outcomes and statistical technique used in this study:  
http://www.eurjdent.com/article.asp?issn=1305-7456;year=2017;volume=11;issue=2;spage=162;epage=167;aulast=Sistani

Reviewer 2:

We thank the reviewer for reading the paper, and for providing thoughtful insights which helped improve our work.

1. In the tables, the column "dental visit ≥ 1 year" represents only those who declared "more than once a year for check-ups"? And the column "emergency visits" represents only those who declared "only emergency care"?

So, can there be the one who went to the dentist last year, only by emergency? Or the same individual may not have used the service in the last year and did not report the emergency search? How was this usage identification made? In these cases, there may be data that are not included in the not used the service.

Reply: This study looks at two distinct outcomes that were each examined in a separate model: time of last dental visit, and reason for visiting the dentist. The first outcome, recorded as a binary variable, as last dental visit <1 (regular or routine) year versus ≥ 1 year (irregular or non-routine). The second outcome also made binary, as reason to visit for check-ups versus emergency. Regarding potential overlap between the two outcome variables, it is possible that a person who attended regularly could have also made an emergency visit, however a person who never visited the dentist would not have made an emergency visit nor a visit for checkup, and so was not included in the sample who reported emergency visits. The same participants are being considered for both outcomes, as was also done in Muirhead et al (2009), and Amarasena et al (2016) https://www.ncbi.nlm.nih.gov/labs/articles/26853201/
2. Table 1 is difficult to understand. I suggest that before each percentage is placed the n, to facilitate the understanding.

Reply: This has been amended accordingly in Table 1.

3. The authors report that the frequencies are row percentages estimated using normalized weights. If one column is the visit the dentist and the other is the emergency use, how the frequencies are row percentages?

Reply: Please note that the row percentages are distinct for each variable category within each outcome columns, as the two outcomes were examined separately and not in tandem. The percentages should add to a 100.

4. The grouping of variables for analysis was proposed in the method as: Socio-demographic factors, socio-economic status, health-related factors and other health related factors.

I suggest to remain these groupings and teeth brushing frequency be incorporated in the health behavior factors. In the other health related factors, remain the other variables, including the perception of health of teeth and mouth. Thus, the groups could present better epidemiological plausibility.

Reply: We thank the reviewer for this remark. We agree with the reviewer’s comment and have changed the variable heading within the tables to reflect this.

5. Regarding the use of alcohol, in this study, the worst situation is represented by the option "At least once per week". I don't know if this frequency could be considered risky behavior. I think we need better explanations. A hypothetical explanatory model is a fragile explanation in this case. The referenced (reference 24) study was carried out in alcohol abusive habits individuals.

Reply: The observation we found that drinkers (those who consumed an alcoholic drink at least once per week, which is considered heavy drinking) had a higher probability of using dental services regularly and not for emergencies compared with those who never consumed alcohol, does not find a lot of support in the literature, and has not been explored previous studies. So, we attempted to speculate as to the role of alcohol in dental care use and oral health as per our results. However, Hu et al (2011), using data from the 1999-2004 NHANES, found that light to moderate alcohol use was associated with more frequent dental visits and more filled teeth. This finding lends some support to the hypothetical model presented by Dasanayake et al (2010) that alcohol may enhance the release of fluoride from certain restorative materials used in dental
fillings, thereby reducing susceptibility to dental caries by reducing oral cariogenic flora. Please note that the following was added for clarification on P.9: “On the other hand, light or moderate alcohol use was found to be positively associated with frequent dental checkups and with having more filled teeth in a study by Wu et al [31] using NHANES data. Therefore, those who consumed alcohol are more likely to obtain dental fillings. A possible explanation for the relationship between heavy alcohol consumption and dental care use is that alcohol may enhance the release of fluoride from certain restorative materials, thereby reducing susceptibility to dental caries by reducing oral cariogenic flora [32], and therefore requiring those who consume it to have less dental visits.”