Author’s response to reviews

Title: The Potential Oral Health Impact of Cost Barriers to Dental Care: Findings from a Canadian Population-Based Study

Authors:

Brandy Thompson (brandy.thompson@mail.utoronto.ca)
Peter Cooney (peter.cooney@hc-sc.gc.ca)
Herenia Lawrence (herenia.lawrence@dentistry.utoronto.ca)
Vahid Ravaghi (vahid.ravaghi@mcgill.ca)
Carlos Quiñonez (carlos.quinonez@utoronto.ca)

Version: 3  Date: 5 May 2014

Author’s response to reviews: see over
Dear Ms. Eloisa Nolasco,

Please accept for review our revised manuscript entitled: The Potential Oral Health Impact of Cost Barriers to Dental Care: Findings from a Canadian Population-Based Study (Manuscript 1358668225115212).

We have carefully assessed the reviewer’s comments and have revised the manuscript accordingly. The table below highlights each comment made by the reviewer, the changes made and where these changes can be found in the manuscript.

<table>
<thead>
<tr>
<th>Reviewer’s Comment</th>
<th>Change/Addition Made</th>
<th>Location in Manuscript</th>
</tr>
</thead>
<tbody>
<tr>
<td>A major concern I have is with the limited data analysis. The reliance on fairly basic data analysis techniques (chi square tests) is odd. Given the role of known and potential confounders on significant associations, I would urge that further analyses be conducted that control for these confounders. Based on the literature (or from analyses using your data), covariates for the model could be considered thoughtfully, and then logistic regression analytic techniques employed to test associations, holding these covariates constant. It is unclear why further analyses using these techniques were not used, as the sample size seems large enough to support this. Could it be related to the restrictions in accessing the dataset? Please clarify.</td>
<td>Regression analyses results have been added (Tables 3 and 4). Details pertaining to the methodology have been added to page 7: “Logistic regressions were conducted for each outcome variable to determine which factors were the strongest predictors of reporting cost barriers. The crude and adjusted odds ratios, 95 percent confidence intervals (CIs) and P-values were recorded. The significance level was set at P &lt; 0.05.” Details pertaining to the results have been added to page 11: “Tables 3 and 4 exhibit the results of the logistic regression analyses. After controlling for socioeconomic and demographic variables, respondents with untreated decay were 1.12 times more likely to report avoiding a dental professional in the last year due to cost (CI: 1.02, 1.23, P = 0.021) and 1.09 times more likely to decline recommended dental treatment in the last year due to cost (CI: 1.02, 1.17, P = 0.018). Further, individuals who reported having fair to poor oral</td>
<td>Page 7, 11, 12</td>
</tr>
</tbody>
</table>
health were 3.09 times more likely to avoid a dental professional due to cost compared to those that reported having good to excellent oral health (CI: 2.11, 4.54, P = 0.000) and 3.04 times more likely to decline recommended dental treatment due to cost compared to those reporting good to excellent oral health (CI: 2.34, 3.94, P = 0.001).” Added to page 12: “Additionally, having untreated decay was found to be predictive of reporting financial barriers to care, suggesting the likelihood of negatively progressing dental conditions related to the inability to secure treatment based on cost barriers to dental care.”

The introduction (or methods) section could be improved by providing some more background information about the CHMS survey (this does not have to be too extensive, for example, why the survey was fielded, was this the first time, or was it the first time it included oral health data, what are some other ways the data have been used to inform policy, etc.) This would help the reader who may not be familiar with these data, especially since the basis of the study (as presented by the authors) was to take advantage of the newly available CHMS data.

In page 7, you report that missing values were removed from the analysis. Please clarify if you conducted a complete case analysis. If so, how did those with missing values compare with those used for the analysis? How many observations were deleted? Did you consider imputing data?

A complete case analysis was not completed, thus imputation was not required. The data was cleaned of all missing responses prior to access. Cases that were not clinically examined were excluded from the analyses—this information has been added to the Methods section and now states: “Missing data were the result of non-response to some or all questions in the survey. These data were coded accordingly by Statistics Canada prior to analyses and were...
Page 7, the authors report that the CHMS socio-demographic characteristics are reported elsewhere. This is unacceptable. The reader should at least be given some idea of who the sample population is – the age distribution, gender, race/ethnicity, socio-economic status, what percentage have dental insurance, who are those that report having cost barriers – are they mostly insured or uninsured, etc.

Sample characteristic data has been added in the Results section now states: “Respondents aged 20 to 39 (23.7%, CI: 19.1, 29.0), female (19.2%, CI: 16.1, 22.7), without dental insurance (35.9%, CI: 30.4, 41.9) and from the lowest income category (35.2%, CI: 27.1, 44.3) report avoiding a dental professional in the last year due to cost most often. Similarly, respondents aged 20 to 39 (19.4%, CI: 16.4, 22.7), female (18.6%, CI: 16.9, 20.4), without dental insurance (27.4%, CI: 23.1, 32.1) and from the lowest income category (31.6%, CI: 24.7, 39.3) report declining recommended dental treatment in the last year due to cost. Further details, including the breakdown of socioeconomic and demographic characteristics of those reporting cost barriers to dental care are published elsewhere [9].”

It should be noted that we have published an entire article on characteristics of these sample populations. During the first round of revisions, this data was removed since duplicate data is not permitted. Thus, reference is made to the other article outlining in detail the socioeconomic and demographic characteristics of the sample populations.

Page 11, the authors stated: “Thus, in order to reduce cost barriers to care and improve oral health outcomes, there is a need to improve the quality of dental insurance coverage…” It is unclear what evidence supports this statement. I do not think it is supported by the results of this study. It is not clear if insured individuals in your sample also had cost barriers, and so expanding dental insurance coverage may not

Page 8

Page 13
fully address the issue. Also, I am not too familiar with the dental insurance system in Canada, but know that in the USA, having dental insurance does not preclude an individual from out of pockets expenditures or cost barriers to care. It may help the reader if you added some additional information on dental insurance coverage in Canada – does it cover 100% of the dental treatment? Although I understand the need to discuss policy implications of the findings, it would be important that these statements are supported by the data or by previous studies.

reported cost barriers much less often than the uninsured. Recent research shows that, even after controlling for other factors, including income, the uninsured were almost six times more likely to avoid the dentist because of cost compared with the insured [9]. The word “potentially” has been added to the sentence mentioned by the reviewer to avoid causal inference. It now states: “Thus, in order to reduce cost barriers to care and potentially improve oral health outcomes, there is a need to improve the quality of dental insurance coverage, or to ensure that cost-sharing arrangements be kept low and that important services are not excluded from insurance plans.” This inference is also followed by a referenced study [31] that demonstrated how a “reduction in cost-sharing for dental services actually improved oral health” which supports the findings in this study.

Please do not hesitate to contact me should you have any questions or further feedback.

We thank you for your time and look forward to your response,

Brandy Thompson (Corresponding Author)
brandy.thompson@mail.utoronto.ca
905-466-8813