Author's response to reviews

Title: Socioeconomic differences in self-rated oral health and dental care utilisation after the complimentary dental care reform in 2008 in Sweden

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Author's response to reviews: see over
Dear Editor,

Thank you for your letter and the reviewers’ comments on our manuscript (MS: 1584501498130622). The reviewers’ and associate editor’s comments were very helpful in improving and focussing the manuscript. We wish now to resubmit the manuscript for consideration for publication in BMC Oral Health. All authors have approved the revised version of the manuscript. Detailed answers to the reviewers’ and associate editor’s comments are attached. The changes made in the manuscript are marked in an attached text file. There are no financial or other relationships that might lead to a conflict of interests.

Yours sincerely,

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Reviewer’s report
Title: Do self-rated oral health and dental care utilisation depend on socioeconomic factors? Recent evidence from a large population-based study in Sweden

Version: 3 Date: 18 June 2014
Reviewer: Vanessa Muirhead

Reviewer’s report:
Discretionary Revisions
The manuscript would benefit from a proof-read to correct semantic and spelling errors.

Major Revisions
1. Abstract
1.1. The background section in the abstract does not clearly articulate the aims presented in the introduction.

The aims have now been more clearly stated in the abstract.

2. Introduction
2.1. The introduction cites previous studies that have explored the relationship between self-rated oral health and dental attendance. Unfortunately, no clear rationale is presented for this study. A clear
rationale for conducting this study is needed to avoid the criticism of “secondary data fishing” (1).

The rationale was to study socio-economic differences in self-rated oral health and dental attendance after the complementary dental care reform in 2008 in Sweden and there are several ways how this study differs from previous studies. This has now been more clearly described in the introduction (lines 94-112) and the title has been revised accordingly (see also answer to referee nr 2).

2.2. Similarly, it would be helpful if the authors provided a theoretical framework to clearly explain the posited relationships between self-rated oral health and socioeconomic factors and dental attendance. This would help the reader to identify the independent and dependent (outcome) variables and the mediators and moderators described in the results section.

The hypothesis identifying the outcome variable and independent variables as well as mediators has now been provided in the introduction (lines 110-112). The hypothesis is based on findings from other similar studies (refs. 4 and 8) as described earlier in the same paragraph (see also answer to referee nr 2).

3. Methods
3.1. The methods sections would benefit from a more detailed description about the sampling method and data collection procedures (i.e. what was the sampling frame? How many municipal were sampled? How was information about the sampling frame obtained?)

The sampling frame contains all inhabitants of the county (including all municipalities) in the age group 16-84 years. The sampling frame has now been described in the methods section (lines 120-122).

3.2. The authors do not explain why they chose to use dental attendance within three years as the indicator for regular attendance. This cut-off level was not particularly discriminating since 89% of respondents were deemed regular attenders. The three-year dental attendance did not seem to relate to the question about refraining from dental visits in the past three months.

The question was posed like this in the national survey, based on the fact that almost all adults are invited to dental care within a 1-2 years interval. Dental attendance has now been included in the logistic regression model in a post-hoc analysis (see also answer to referee nr 2).

3.3 The method sections states the “very good/fairly good” self-rated oral health categories were coded as “good oral health” while “quite poor and very poor” were categorised as “poor oral health. What happened to participants who reported neither good nor poor self-rated oral health?
We have added these results to the results section (lines 179-180).

3.4 No information about what statistical software was used to analyse the data was presented. The authors do not confirm if survey weights were included or if any adjustments were made in the analysis for the complex (stratified) sampling.

The statistical software is now given in the methods section (line 172). We did not use weights because the distribution follows approximately the distribution of the population in the county in general.

4. Results

4.1. I would suggest that the authors provide some descriptive statistics about the sample socioeconomic characteristics (numbers and percentages) in addition to the age and gender sections in Table 1 at the start of the results section. This would allow readers to assess the representativeness of the sample (external validity). The discussion alluded to the differential response rates by age group. This information should have been first included in the results section in the descriptive statistics before being alluded to in the discussion.

The numbers and percentages in each category of the socioeconomic groups have been added to Table 2. We did not, however, include response rates in the results section since they are not a result of our study but affect the generalizability of our study as discussed.

4.2. The paper provides no information about the other reasons for refraining from dental visits collected in the study (i.e., symptoms subsided, dental fear, lack of time and other reasons). These factors were not included in the logistic models. Is it possible that these factors could be stronger predictors of self-rated oral health than refraining from dental visits for financial reasons? Studies have shown that lack of perceived need (i.e., symptoms subsided) is a cogent predictor for people not visiting the dentist regularly (2). It could also be a significant mediator of the relationship between SES and self-rated oral health. The authors’ conclusion that “refraining from dental treatment thus largely explained differences in oral health status in relation to country of birth, between the employed and the unemployed or those on disability pension or on long-term sick leave” is not completely correct because these measured factors were not included in the analysis. I would suggest that the authors include these potential mediators in the modelling to fully support their conclusion.

We have now added these factors into the model in a post-hoc analysis to test whether the results are robust. We did indeed find that some of these factors (regular dental attendance and refraining from dental care due to dental fear or lack of time) were associated with poor self-rated oral health, but the major contributor to the socio-economic differences was refraining from dental care for financial reasons. These results have
now been given in the results section (lines 226-232) and the corresponding discussion (lines 309-316) has been revised.

5. Discussion
5.1. The authors acknowledge the limitations of this study. However, some of the inferences made cannot be support by the data analysis presented in this paper. For example, the statement, “This implies that if they had not refrained from treatment, their self-rated oral health would have been comparable with that of the employed” cannot be supported by this cross-sectional study. The authors themselves refer the possibility of reverse causality in the discussion.

We have rephrased this statement (lines 259-261) to be more correct.

5.2. Are the authors describing the lack of an age modification effect on the relationship between having a cash margin and self-related in the sentence “in our study, the differences in oral health between those with and without a cash margin exceeded the differences between age groups”? It would helpful for readers if this was more clearly explained.

We just meant that the differences in self-rated oral health between age groups are small, but the differences between those with and without cash margin are large and increase with increasing age. We have now revised the description (lines 280-284) and also added a reference (22) to another similar study.

Tables
Table 3 column 1 showing univariate figures is not correct since these ddds ratios were adjusted by age and gender. I would suggest that the authors remove the terms univariate and multivariate from the column headings. Including the P values in addition to the 95% confidence intervals would also be helpful or using asterisks to indicate P<0.05 or P<0.001.

We have removed these terms from the column headings. We did not, however, add p-values since the statistical significance can be seen in the confidence intervals.

References

Level of interest: An article of limited interest
Reviewer's report
Title: Do self-rated oral health and dental care utilisation depend on socioeconomic factors? Recent evidence from a large population-based study in Sweden

Version: 3
Date: 25 July 2014
Reviewer: Ekta Gupta

Reviewer's report:
Do self-rated oral health and dental care utilisation depend on socioeconomic factors? Recent evidence from a large population-based study in Sweden. The research exploring the role of socioeconomic factors on access to dental care services and on oral health is valuable. However, I am doubtful whether this study adds anything new to the existing health inequalities literature in relation to both Swedish and global context. In theory, this study is trying to explore the levels of social inequalities in self-rated oral health and dental care utilisation following the introduction of the Swedish complementary dental care reform in 2008. Thus, one of my concerns is that the title of the study is not appropriate and can be worded in terms of dental care reform, which in principal is the only novelty this study provides. Previous studies by Wamala and colleagues (2006) and Donaldson and colleagues (2008), have explored this topic quite extensively.

We have now explained in detail, both in the background (lines 102-112) and the discussion (lines 309-316), what this study adds to the existing literature and how it differs from the studies by Wamala et al. and Donaldson et al. We have also revised the title to better describe the content and aims of the study. (See also our answer to referee nr 1.)

1) Introduction
Minor points:
Second paragraph lines 71-72 mention ‘Regular dental attendance has been shown to be associated with better oral health’ can add in adults for more clarity.

Done.

Second paragraph lines 76-77 mention ‘In this context, not clear which context, need to mention Swedish context.’

Done.
Third paragraph lines 80-82 starting ‘Despite introduction……social gradients in oral health outcomes still persist in Sweden’ needs a reference.

Reference added.

2) Methods
Discretionary Revisions:
For more clarity Methods section should be divided into subsections such as ‘study population’ and ‘variables’.

Since the methods section is relatively short we did not divide it into subsections.

It is not explicitly mentioned how socio-economic status was measured. The authors mention cash margin, employment etc. but later in the results section mention good financial status, so does this refer to ‘cash margin’/employment or both. This needs more clarity.

The socio-economic groups were defined by gender, age, country of birth, family status, employment status and educational level. We have now explained that cash margin was used to measure financial security and deleted the term “financial status” to avoid confusion.

3) Results
Discretionary Revisions:
In general results need to be structured around research objectives with sub-sections. At present they are difficult to follow.

We have revised the structure so that it follows the hypothesis presented in the background and the order of tables and figures.

A demographic profile of the final study participants would be useful.

A demographic profile of the study participants has been added to table 2 with numbers and percentages.

Minor points:
Second paragraph, lines 161-162, results not clear, should be supported by statistical values.

The p-values to support these results can be seen in Table 1.

Third paragraph, line 165 ‘People with good financial status………best oral health’ what does good financial status refers to and no reference to any result tables.

Financial status has been replace by financial security (see comment above).
Fourth paragraph, lines 180-181 ‘Self-rated poor oral health……strongly associated’ needs to be supported by statistical values.

*The statistical values were given in the next sentence. We have now combined it to one sentence to be more clear.*

Last paragraph, line 195 Spell check ‘Refaining’

*Done.*

4) Discussion

Minor Points:
Opening sentence of the discussion can be better framed in lay terms rather than statistical (Line 203).

*Revised.*

Last paragraph (Line 287-288) opening line is misleading and unclear.

*We have deleted the first two sentences of this paragraph.*

Discretionary Revisions:
In general, a comparison of the findings from the previous studies (before the reform) with the present findings (after the reform) would make the discussion better.

*We have expanded the description of the results from studies before the reform and our study which is after the reform (lines 307-312).*

The recommendations based on the findings of this and previous evidence should be more explicitly stated. At present, the recommendations are not strong enough. Recommendations synthesising previous and present research findings to suggest course for future studies would be more insightful and useful.

*The recommendations have now been more clearly stated. The results suggest that refraining from dental care for financial reasons is the main explanation for socio-economic differences in self-rated oral health (lines 293-298, 357-359). Whether providing better access to dental care for low socio-economic groups will decrease social inequalities in oral health needs, however, to be tested in future studies, which we have pointed out in conclusions (lines 359-361).*

Also the authors should acknowledge that although access to dental care explains health inequalities to an extent, it is not the sole factor. It should be further considered that this study is just focusing on one factor rather than other social determinants. These arguments should be more elaborately discussed. Implications for policy and research from the study if any should be stated more definitively.
As an answer to a point raised by referee nr 1, we have now added several factors to the model in a post-hoc analysis to test whether the results are robust. As a result of this analysis we have revised the results and corresponding discussion, indicating that other factors also contributed but refraining from dental care for financial reasons was the major factor.

Final Comments:
Again, the novelty of this research is questionable; the authors should present a clear case by outlining what this study adds to the current health inequalities literature especially in relation to Sweden.

As indicated above, the novelty of this study has now been more clearly outlined in the text.

References


Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests: I declare that I have no competing interests

RH comments
Major revision of the manuscript is needed. The authors particularly need to address the introduction, aims and discussion to make their case as to how this study adds to the literature, and what is new.

At the moment a lot of the references are from Scandinavia without adequate reference to wider literature on SES differences in self-rated oral health and utilisation. Key references, such as the reference by Wamala, given by one of the reviewers is missing, as is the rationale as to why the particular variables reported were chosen for analysis.
What we need to see in this paper is how this Swedish dataset adds to what we know in this area. The discussion needs to return to these wider issues, and how the Swedish data sheds new light on the literature in this area.

We have now explained in detail the aims of this study, the hypothesis that the analysis of data follows, what is new and what this study adds to the existing literature. We have also revised the title to better describe the aims of the study. Wamala et al and Donaldson et al were referred to in the earlier version, but we have now added a detailed description how our study differs from their studies and what it adds to them. We have also added several references from other countries. We have expanded the analysis model as suggested by reviewer nr 1 and can show that even though other factors also contributed to socio-economic differences in oral health, refraining from dental care for financial reasons was the major contributor. The implications of the findings for the Swedish dental care system and needs for future research have also been addressed. (See also answers to reviewer nr 1 and 2.)