

Community Dentistry and Oral Epidemiology - Manuscript ID CDOE-17-227

Community Dentistry and Oral Epidemiology

<onbehalf+n.brown+otago.ac.nz@manuscriptcentral.com>

Tue 30/05/2017 3:59 PM

To: Ninuk Hariyani <ninuk.hariyani@adelaide.edu.au>;ninuk_hariyani@yahoo.co.id
<ninuk_hariyani@yahoo.co.id>

30-May-2017

Dear Dr. Hariyani:

Your manuscript entitled "Time Trend and Associated Behavioural Factors of Root Caries among Australian Elders: Findings from 11 years Longitudinal Study" has been received by the editorial office of Community Dentistry and Oral Epidemiology. Review procedures will now be handled by the editor.

Your manuscript ID is CDOE-17-227.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <https://mc.manuscriptcentral.com/cdoe> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/cdoe>.

Thank you for submitting your manuscript to Community Dentistry and Oral Epidemiology.

Sincerely,

Community Dentistry and Oral Epidemiology Editorial Office

Community Dentistry and Oral Epidemiology - Decision on Manuscript ID CDOE-17-227


Community Dentistry and Oral Epidemiology

<onbehalf+murray.thomson+otago.ac.nz@manuscriptcentral.com>

Wed 2/08/2017 8:28 AM

To: Ninuk Hariyani <ninuk.hariyani@adelaide.edu.au>; ninuk_hariyani@yahoo.co.id
<ninuk_hariyani@yahoo.co.id>

Cc: n.brown@otago.ac.nz <n.brown@otago.ac.nz>

 1 attachments (488 KB)

Attached standard file: CDOE-17-227 Root caries in Australia.pdf;

01-Aug-2017

Dear Dr Hariyani:

The initial reviews for manuscript ID CDOE-17-227 entitled "Time Trend and Associated Behavioural Factors of Root Caries among Australian Elders: Findings from 11 years Longitudinal Study" which you submitted to Community Dentistry and Oral Epidemiology, have been completed. The comments of the reviewers are at the end of this letter.

You will see that the reviewers have recommended some major revisions in your manuscript.

To revise your manuscript, log into <https://mc.manuscriptcentral.com/cdoe> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Then click on "Continue Submission." Your manuscript number has automatically been amended to denote a revision.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript (other than minor editorial corrections) by using bold or colored text, though do NOT use "track changes" for your revision; the MC system doesn't like it. Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, please put your responses to the comments made by the reviewers (other than minor edits) in the space provided. You can use this space to document any changes you make to the original manuscript. Be sure to address all issues raised by the reviewers. If you disagree with a reviewer, this is where you justify your position.

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Your revised manuscript should be uploaded within three months. If this time schedule creates difficulties for you then do let me know.

Once again, thank you for submitting your manuscript to Community Dentistry and Oral Epidemiology. I look forward to receiving your revision.

Sincerely,

Professor W Murray Thomson
Editor-in-Chief, Community Dentistry and Oral Epidemiology
murray.thomson@otago.ac.nz

Comments from Editor and Associate Editor:

The title needs work - it does not really make sense - the data are not time trend data - they are longitudinal data. You need to emphasise that. Perhaps "Root surface caries among older Australians: findings from an 11-year prospective cohort study" or something like that.

Results - you cannot describe it as "the annual trend of root DS and root DFS increased..." - you are reporting increment and incidence data, are you not? Report those as such. Do not misuse the term "trend" as you have throughout this paper. We would have expected the senior co-authors to have had more of an influence here. You should ensure that all authors have seen the reviews and are involved in revising the paper. They know what the journal's expectations are for technical writing.

While the DAG depicts both the direct and indirect effects of the confounders, covariates and exposures on root caries, the multi-level models fitted only estimate the direct effects. They are not corresponding and the DAG has not been mentioned again and discussed in the manuscript.

The references are not yet in CDOE format.

We expect to see substantial improvements in the scientific writing to have occurred once this paper is resubmitted.

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

This paper is generally well-written and addresses a topic of considerable interest to oral health.

Throughout the paper the authors use DF and DFS as markers of caries activity. They do touch on the restoration of non-carious tooth loss as an issue but do not discuss this in any detail. Walls et al found that up to 55% of restorations placed by UK dentists were placed because of wear rather than decay which could have a very significant impact on these findings. Particularly when the increase in DFS was greatest in those who attended the dentist most.

Impact of treatment provision on the epidemiological recording of root caries.

Walls AW, Silver PT, Steele JG.

Eur J Oral Sci. 2000 Feb;108(1):3-8.

Root caries can only occur on teeth with exposed roots. this analysis reports trends in root caries but does not tell us the rate at which vulnerable surfaces developed disease which would be valuable. Also it would be appropriate for the authors to discuss why they chose to analyse their data using DF and DFS rather than the Root caries Index which is designed to overcome this issue.

The RCI revisited after 15 years: used, reinvented, modified, debated, and natural logged.

Katz RV.

J Public Health Dent. 1996 Winter;56(1):28-34. Review

The pattern of loss to follow-up in this study was similar to other studies with attrition among the frail and those from poorer backgrounds. whilst the sis inevitable it would be worthy of noting that these are also the groups where the greatest disease has been seen in other cross-sectional studies which may confound the results seen here.

Reviewer: 2

Comments to the Author

The paper is too long and contains many assumptions that are weakly supported.

Please see the details comments and questions I have placed in the margin of the attached document.



Department of Dental Public Health

Faculty of dental medicine
Universitas Airlangga

Ninuk Hariyani
Lecturer and Researcher

30th October 2017

Professor W Murray Thomson,
Editor-in-Chief,
Community Dentistry and Oral Epidemiology

Faculty of Dental Medicine (FKG)
Universitas Airlangga
East Java 60132
Indonesia
Telephone +62 81314343305
ninuk_hariyani@yahoo.co.id
ninuk-h@fkg.unair.ac.id
ninuk.hariyani@adelaide.edu.au

Dear Professor W Murray Thomson,

We are very grateful to you for the opportunity to revise our manuscript and we acknowledge the time spent by the editors and reviewers in commenting on this paper. We are also very grateful to the editors and reviewers for the constructive inputs to improve this manuscript. Please find below a point-by-point reply to reviewers' and editors' comments. We hope that we have now addressed the concerns and believe that the manuscript has been substantially improved.

Thanking you,

Yours sincerely,

Ninuk Hariyani (Corresponding Author)

Lecturer and researcher
Department of Dental Public Health
Faculty of dental medicine
Universitas Airlangga
East Java
Indonesia

+62 81314343305
ninuk_hariyani@yahoo.co.id
ninuk-h@fkg.unair.ac.id
ninuk.hariyani@adelaide.edu.au

Comments from Editor and Associate Editor:

Comment 1:- The title needs work - it does not really make sense - the data are not time trend data - they are longitudinal data. You need to emphasise that. Perhaps "Root surface caries among older Australians: findings from an 11-year prospective cohort study" or something like that.

Response:- We have changed the title as recommended (Page 1, lines 1)

Comment 2:- Results - you cannot describe it as "the annual trend of root DS and root DFS increased..." - you are reporting increment and incidence data, are you not? Report those as such. Do not misuse the term "trend" as you have throughout this paper. We would have expected the senior co-authors to have had more of an influence here. You should ensure that all authors have seen the reviews and are involved in revising the paper. They know what the journal's expectations are for technical writing.

Response:- In this analysis we aim to quantify the individual growth of the root caries using longitudinal data. Thus, this individual growth was different to a time trend gathered from multiple cross-sectional studies. It is longitudinal growth of root caries within individuals. We have achieved that by using the multilevel longitudinal growth model as described in its primary method paper (Singer 1998).⁽¹⁾ The primary outcome of our analysis is not dental caries increment as described in a number of method papers (Slade and Caplan 1999⁽²⁾; Broadbent and Thomson 2005⁽³⁾). Dental caries increment has been defined as "the number of new carious lesions, teeth or surfaces occurring in an individual within a stated period of time".⁽²⁾ In this analysis, we estimated the slope of time using multilevel longitudinal growth model. Time (in years) was used as a random factor in the model allowing for modelling variance between and within individuals. The intercept (baseline root caries experience) was also a random factor. Therefore, the slope is an estimated annual growth of root caries adjusting for between-individual variations in baseline caries experience and overtime changes. Even though it is possible to compare the increase of 0.07 surfaces in annual growth to an annual increment, the concepts are not really the same. Terms growth and trend are sometimes used interchangeably. However, the term trend may cause confusion with time trend generated from cross-sectional studies. Therefore, we have decided to change it to growth as used in the primary method paper (Singer 1998).⁽¹⁾

The explanation has been included in the introduction (page 3 lines 67-68) and method section (in statistical analysis in page 8, lines 219-226).

Comment 3:- While the DAG depicts both the direct and indirect effects of the confounders, covariates and exposures on root caries, the multi-level models fitted only estimate the direct effects.

Response:- It is correct that we only estimated the direct effect of all the baseline risk factors simultaneously using the multi-level growth model. The approach was suitable for this research^(1, 4) as our aims are to quantify the growth of root caries and its risk factors and not to investigate the paths of the risk factors and estimate the direct and indirect effect of mediation (which would be more suitable analysed by SEM). We cited this aims in the introduction (page 3 line 84-88) and exclude the mediation analysis in the method section (page 5 lines 129-130).

Comment 4:- The DAG has not been mentioned and discussed in the manuscript.

Response:- The authors have now addressed this concern in methods section (Page 4-5, lines 111-125)

Comment 5:- The references are not yet in CDOE format.

Response:- The authors have now addressed this concern in the reference section (Page 15-17, lines 404-513)

Comment 6:- We expect to see substantial improvements in the scientific writing to have occurred once this paper is resubmitted.

Response:- Thank you for the opportunity to revise this manuscript. We hope that the scientific writing has been better in the current revision.

Reviewer: 1

Comment 1:- This paper is generally well-written and addresses a topic of considerable interest to oral health.

Response:- Thank you very much for your positive feedback on our manuscript.

Comment 2:- Throughout the paper the authors use DF and DFS as markers of caries activity. They do touch on the restoration of non-cariou tooth as an issue but do not discuss this in any detail. Walls et al found that up to 55% of restorations placed by UK dentists were placed because of wear rather than decay which could have a very significant impact on these findings. Particularly when the increase in DFS was greatest in those who attended the dentist most.

Impact of treatment provision on the epidemiological recording of root caries.

Walls AW, Silver PT, Steele JG.

Eur J Oral Sci. 2000 Feb;108(1):3-8.

Response:- The authors have now addressed this concern in the discussion (Page 12, lines 362-363)

Comment 3:- Root caries can only occur on teeth with exposed roots. This analysis reports trends in root caries but does not tell us the rate at which vulnerable surfaces developed disease which would be valuable. Also it would be appropriate for the authors to discuss why they chose to analyse their data using DF and DFS rather than the Root caries Index which is designed to overcome this issue.

The RCI revisited after 15 years: used, reinvented, modified, debated, and natural logged.

Katz RV.

J Public Health Dent. 1996 Winter;56(1):28-34. Review

Response:- The authors have now addressed this concern in the methods section (Page 7, lines 182-185)

Comment 4:- The pattern of loss to follow-up in this study was similar to other studies with attrition among the frail and those from poorer backgrounds. Whilst this is inevitable it would be worthy of noting that these are also the groups where the greatest disease has been seen in other cross-sectional studies which may confound the results seen here.

Response:- Thank you for the comments. We have reworded our statement with more detailed comparison in the text (page 11 lines 322-324). Our attrition (60.8%) was slightly higher than the longitudinal studies of root caries in the same length conducted in Sweden (51.0),⁽⁵⁾ but much lower than that observed in Iowa (75.7%).⁽⁶⁾

Reviewer: 2

Comment 1:- The paper is too long and contains many assumptions that are weakly supported.

Response:- The authors have now addressed this concern and provide a more detailed theory in the DAG in the methods section (Page 4-5, lines 111-125)

Comment 2:- Please see the details comments and questions I have placed in the margin of the attached document.

Response:- The authors have now addressed each of the concern. Detail of the responds could be seen in the table below:

no	Previous page	Statement	Reviewer's comments	Actions taken
1	2	Where appropriate, changing these behaviors should be routinely promoted among elders.	Implies causation - not tested without controls.	This statement was intended to imply causal relationship. As cited in "Oral health in epidemiology: principles and practice", ⁽⁷⁾ studies may be classified as observational or experimental and in both the effect of causes may be assessed. In observational study such as cohort in this case, the control was the group set as the reference.
2	3	At the same time, there is a reduction in edentulism associated with increased awareness of dental health, improved access to better health services and wider availability and use of fluorides.	Grand statement but without proven substance apart from the benefits of fluoride. Sentence is unnecessary.	Accept the changes
3	3	in high, middle and low income countries	What's left? Do you mean everywhere?	Accept the changes. Rewording the sentence
4	3	Even though root caries is known to have increased over time, ^{5, 6} the time trend of root caries has not been frequently quantified. Researchers have looked at multiple cross-sectional studies and developed impressions on its' trend among different populations across time. ⁷ Among cross-sectional studies, it has been concluded that root caries increases over time by describing root caries experience by age, and showing that the number of root caries increased as age increased. ⁶ However such information does not identify the development of root caries among individuals with ageing.	Do you need this Introduction? The next sentence is the crux of the problem. Begin the paragraph here.	Accept the changes.
5	3	trend of root caries	Please define what this means. Do you mean "change" or a broader context including factors influencing root caries?	By calling it as a trend, we actually imply the growth of root caries, then we adopting the multi-level growth modelling in presenting the result. To adjust with the editors' recommendations, we changed the term "time trend" into growth, to differentiate with the common time trend analysis. Another option was by calling it as root

				caries trajectory, but we argue that growth is more suitable. See our reply to the editors' concern above.
6	3	South Australian Dental Longitudinal Study (SADLS)	A brief summary of this study would be helpful in the Introduction	Provided a brief summary of SADLS in the introduction section (page 3 line 80-81)
7	4	(tooth brushing, flossing, dental visit pattern, reason of visit and smoking)	Why not include diet, especially the frequency of sugar consumption, and medications that potentially disturb saliva? The theory of biofilm/plaque causing caries might be inadequate as an explanation of the "trend".	As this was a secondary data analysis, the analysis depends on the data that already collected. Unfortunately we do not have the variables suggested in the baseline study of SADLS.
8	4	research design	The description of DAG below is not easy to follow, and seems more appropriate for the Discussion of the limitations of the research technique. However, a more succinct description of why and how the DAG was used would be more suitable here for the Introduction	a more detailed theory in the DAG have been provided in the methods section (Page 4-5, lines 111-125)
9	4	developing a directed acyclic graph (DAG) ²²	How was this done - with existing knowledge (literature) and experts? Can you reference the literature?	The authors have now addressed this concern by adding some detailed references (Page 4-5, lines 117-125)
10	5	16	this is one piece of evidence for the DAG. Are there others?	This article was a systematic review including many articles underlying the DAG. However, some other references have been added to address this concern in each detailed statements (Page 4-5, lines 117-125).
11	6	brushing frequency, flossing frequency, dental visit pattern, reason for dental visit, and smoking.	How did you control for or manage social desirability bias (they told you what they thought was the "right" more desirable answer - floss, brush and visit dentist regularly?)	We could not control this possible bias as this was a secondary data analysis. This point now has been added in the limitation of the study (page 13 lines 389-391).
12	6	60.8%	Big loss!	We recognise this was a big loss and discuss that this finding may bias to relatively healthier older adults
13	6	simple decayed and recurrent caries	Was this by visual examination only or was a probe used?	Blunt probes were used. This was mentioned in the method section (data collection) page 5 line 145-146.
14	7	Adelaide the capital city of South Australia, had water fluoridated since 1971 while Mt Gambier's water was not fluoridated.	Did you record movement between either place or did you assume that residents remained in the same place for the duration (11years) of the study?	We recorded the movement of each participants in each waves. However, for this analysis, the risk factor used was the baseline characteristic, thus we only use the residential place at baseline.

15	7	Private dental insurance was categorized as having private insurance or not. Socioeconomic status was measured by household income	for the duration of the study?	As above
16	7	(if at least one tooth had bleeding after probing).	This seems unduly rigorous? Many (~two-third as you report below seems a bit low based on my clinical experience) people will have at least one tooth with bleeding on gingival probing. However, I would not consider this as a likely predictor of caries.	In this case, this cut might have been too rigorous. We tested different cut points. As there was no difference in the final result, we have decided to retain the variable.
17	7	count of the number of sites	Was there a cut-off to distinguish between gingival health and disease? How did you manage the analysis? Did you test the probability that caries risk increases monotonically as the number of teeth with gingivitis increases?	Recession gingiva was measured using 1 mm rule. ⁽⁸⁾ We test those probability by including the number of gingival recession into the models (page 7 line 184-185)
18	7	Bivariate analysis was conducted using the Mann-Whitney U test for the risk factors with two categories, the Kruskal-Wallis 1-way ANOVA for a risk factor with three categories and Spearman's rho correlation for continuous risk factor as all distributions were not normal.	can you give an example for when you used this and below also for the other tests?	We used Kruskal-Wallis 1-way ANOVA for income as it had three categories. We use Spearman's rho correlation for continuous risk factor (the number of sites with gingival recession), and use the Mann-Whitney U test for other risk factors with two categories.
19	8	More than 60% participants had gingivitis.	see comment above	Has been answered above
20	8	around 70% of participants reported brushing twice a day or more, while less than 30% reported flossing once a day or more. More than 70% of participants reported having a dental visit in the previous year and around 50% reported an oral problem as the reason for the last dental visit. Slightly over 50% of participants were current or previous smokers.	How does these data compare with other dental data from Australia? Do they seem representative?	The authors have now addressed this concern. The comparison has been stated in the discussion section, page 11 line 329-331.
21	9	Different factors were found to be associated with different measurement of root caries at different waves. Participants who brushed less than twice a day and had their last dental visit more than 1 year ago had higher untreated root caries at baseline	due to brushing frequency OR attending dentists?	These were results of the bivariate analysis, and both factors were significant. We have added 'in the bivariate analysis' to the sentence (page 9 line 265).

22	9	Being older, having last visited less than 1 year ago and check-up as a reason for dental visit were consistently associated with higher root DFS in all waves of oral examination.	A tendency to caries at baseline would encourage visits to dentists, and this association is likely to persist throughout the study period given the ineffectiveness of hygiene and restorations as treatments for caries.	In this analysis, we excluded baseline root caries as the risk factor as we have used it as the outcome. Baseline caries experience was used as a random intercept in the model to control for between-individual variations (page 5 line 133-134).
23	9	The null model showed that untreated root caries increased by 0.07 surfaces annually.	Did you consider the possibility that some participants were more susceptible than others to root caries; and as a consequence average/mean data do not reveal the real incidence (see MacEntee et al. Community Dent Oral Epidemiol 1990; 18: 149-52).	In the null model, we did not consider the possibility that some participants were more susceptible than others to have root caries. However, in the adjusted and final model, we consider this fact by including the number of sites with gingival recession as a covariate. We found that in the both models, number of sites with gingival recession was associated with increased root DS and the growth of an annual 0.07 surface increase was still observed
24	10	DISCUSSION	It would be interesting to mention the role and significance of the DAG in the analysis and interpretation of the Results. It seems as it is simply thrown into the Methods with little if any purpose despite the large Figure.	The authors have now addressed this concern in the discussion (Page 11-12, lines 332-337; page 13 lines 373-378)
25		the finding is robust.	what does this mean - robust from what perspective?	Evidence from a cohort study was categorized as the fourth most robust evidence after meta-analysis, systematic reviews and RCTs. ⁽⁹⁾ The authors have now addressed this concern in the page 11 line 308-310.
26	10	This result for the root caries trend is biased toward relatively young and healthy Australian elders.	How did you determine this characteristic?	In this analysis we identified that people staying in this 11 year study were relatively younger. The previous reported studies ^(10, 11) showed that people lost of follow up were those with higher root caries at baseline ⁽¹⁰⁾ and those with higher number of chronic medical conditions ⁽¹¹⁾ . Thus we conclude that this study was bias to relatively healthier elders (who were retained up to the final year of study) The authors have now addressed this concern and added the explanation in the discussion section (page 11 line 324-327).

27	10	The findings of this study emphasize our knowledge that root caries increases across time.	confirm?	Accepted the suggestion (page 10 line 314)
28	11	Longitudinal studies always face a problem with attrition of the data	participants?	Accepted the suggestion (page 10 line 319)
29	11	High attrition of samples following four waves of oral examinations over 11 years in this study could lead to the underestimation of the development of root caries	or and overestimation due to persistence in the study of people who are experiencing (and bothered by) root caries?	The bias toward younger, healthier elders would more likely lead to an underestimation
30	11	the attrition in this study was comparable to other longitudinal studies in root caries with the same length.	Is this good or bad. Were you unable to learn from the Hamasha et al. study to help retain more participants in the study?	Thank you for the comments. We have reworded our statement with a more detailed comparison in the text (page 11 lines 322-324). Our attrition (60.8%) was slightly higher than the longitudinal studies of root caries in the same length conducted in Sweden (51.0%), ⁽⁵⁾ but much lower than that observed in Iowa (75.7%). ⁽⁶⁾ All efforts to maintain the participation have been mentioned in the method section (page 4 lines 103-105)
31	11	30	why was this not referenced in the Introduction	Now has been added (reference number 9, introduction, page 3 line 71)
32	11	Plaque is a well-known etiologic agent in dental caries	Please put this in a more realistic context: see: Sheiham A, James WP. J Dent Res 2015 94:1341-7. Tinannof N (2017). J Evid Based Dent Pract 03/2017, Volume 17 (1).	The sections has been rewording to address your concern (page 12 line 338).
33	11	Tooth brushing could mechanically remove plaque and together with fluoridated tooth paste could assist in altering the balance between demineralisation and remineralisation,	probably the more important contributor.	The authors have now addressed this concern (page 12 lines 344-346)
34	12	Visiting a dentist only for a problem was found to be a risk factor for untreated root caries.	Please see my comment above about which participants might attend dentists regularly - those with more caries. The dentist might have little to do with the incidence.	Has been answered above
35	13	There were some strengths	Please discuss limitations also.	The limitations have been discussed in the Discussion (page 11 lines 319-320; page 13 lines 389-394)
36	13	Where appropriate, changing these behaviours should be routinely promoted among elders.	Inappropriate (and questionable) comment in the Conclusions.	Has been answered above

References:

1. Singer JD. Using SAS PROC MIXED To Fit Multilevel Models, Hierarchical Models, and Individual Growth Models. *J Educ Behav Stat.* 1998;23:323-355.
2. Slade GD, Caplan DJ. Methodological issues in longitudinal epidemiologic studies of dental caries. *Community Dent Oral Epidemiol.* 1999;27:236-248.
3. Broadbent JM, Thomson WM. For debate: problems with the DMF index pertinent to dental caries data analysis. *Community Dent Oral Epidemiol.* 2005;33:400-9.
4. Ha DH, Lalloo R, Jamieson LM, Do GL. Trends in caries experience and associated contextual factors among indigenous children. *J Public Health Dent.* 2016;76:184-191.
5. Fure S. Ten-year incidence of tooth loss and dental caries in elderly Swedish individuals. *Caries Res.* 2003;37:462-469.
6. Hamasha AA-H, Warren JJ, Hand JS, Levy SM. Coronal and root caries in the older Iowans: 9- to 11-year incidence. *Spec Care Dent.* 2005;25:106-110.
7. Chattopadhyay A. *Oral health epidemiology: Principles and Practice.* Massachusetts: Jones and Bartlett; 2011.
8. Ellefsen B, Holm-Pedersen P, Morse DE, Schroll M, Andersen BB, Waldemar G. Assessing caries increments in Elderly patients with and without dementia: A one-year follow-up study. *J Am Dent Assoc.* 2009;140:1392-1400.
9. Haidich AB. Meta-analysis in medical research. *Hippokratia.* 2010;p.29-37.
10. Slade GD, Gansky SA, Spencer AJ. Two-year incidence of tooth loss among South Australians aged 60+ years. *Community Dent Oral Epidemiol.* 1997;25:429-437
11. Thomson WM, Spencer AJ, Slade GD, Chalmers JM. Is medication a risk factor for dental caries among older people? *Community Dent Oral Epidemiol.* 2002;30:224-232.

Community Dentistry and Oral Epidemiology - Decision on Manuscript ID CDOE-17-227.R1

Community Dentistry and Oral Epidemiology <onbehalf@manuscriptcentral.com>

Sun 3/12/2017 1:52 PM

To: Ninuk Hariyani <ninuk.hariyani@adelaide.edu.au>;ninuk_hariyani@yahoo.co.id
<ninuk_hariyani@yahoo.co.id>

Cc: n.brown@otago.ac.nz <n.brown@otago.ac.nz>

03-Dec-2017

Dear Dr Hariyani:

The reviews for your revised manuscript ID CDOE-17-227.R1 entitled "Root surface caries among older Australians," which you submitted to Community Dentistry and Oral Epidemiology, have been completed. The comments of the reviewers are at the end of this letter.

You will see that the reviewers have recommended some further minor revisions to your manuscript, so please address the reviewers' comments and resubmit your manuscript. You are almost there!

To revise your manuscript, log into <https://mc.manuscriptcentral.com/cdoe> and enter your Author Center, where you will find your manuscript title listed under "Revised Manuscripts in Draft." Then click on "Continue Submission." Your manuscript number has automatically been amended to denote a revision.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using bold or colored text, though do not use "track changes" because the MC system doesn't like it. Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, please respond to the comments made by the reviewers in the space provided. You can use this space to document any changes you make to the original manuscript. Please be as specific as possible in your response to the reviewers, and be sure to address all issues they have raised.

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Your revised manuscript should be uploaded within the next 60 days. If you have problems with that time schedule then do let me know.

I look forward to receiving your revision.

With best wishes,
Professor W Murray Thomson
Editor-in-Chief, Community Dentistry and Oral Epidemiology
murray.thomson@otago.ac.nz

Editor comments:

Change 'the elderly' to 'older people' throughout the paper.

Intro, paragraph 2 - the first 2 sentences refer to the 'growth of root surface caries' - what do you mean? is it increment? Clarify this, please.

Reference #20 - make clear that it was a PhD thesis.

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

The paper is much improved; however, there are a few comments made on the previous draft that remain as questions that think should be addressed in the Discussion to enhance the practical relevance and interpretation of the results:

p.6; ls. 122-126: This is confusing "Further, the association of brushing frequency as an exposure and gingival recession was conflicting... including tooth brushing frequency and root caries." is confusing. I had to read a few times to get the point. Can you simplify, and check your use of commas?

p.7; ls. 206-208: Did you record movement between either place or did you assume that residents remained in the same place for the duration (11years) of the study?

p.9; l. 212: Was there a cut-off to distinguish between gingival health and disease? How did you manage the analysis? Did you test the probability that caries risk increases monotonically as the number of teeth with gingivitis increases?

p.11; l. 314: Did you consider the possibility that some participants were more susceptible than others to root caries; and as a consequence average/mean data do not reveal the real incidence?

Reviewer: 2

Comments to the Author

This paper has the potential to make a substantial contribution to the world literature on this subject. It is well generally written.

I have 1 significant concern, the sample was drawn from populations with different status in terms of fluoride in the water supply but this does not seem to have been addressed in the analyses of these data. Others have shown different levels of root caries in both adults who have lived with water fluoridation for the whole of their lives AND in those who live in communities where fluoride has been added more than 10-15 years prior to the assessment. My understanding from this report is that Adelaide has been fluoridated since 1971 so the older adult population from Adelaide would likely have been subject to fluoride in water for a considerable time prior to the start of this study and during the follow-up period.

Secondly the authors comment about attrition of the sample with time of follow-up and comment that those lost to follow up are more likely to be at higher risk from caries. This should be restated in the

conclusions so that it is emphasised for those users who only look at paper abstracts!.

I have a number of minor comments

Page 7 152 the authors are talking about when teeth were recorded as roots. I am sure that this description applies to teeth that have NOT been restored to replace the "more than 3/4 of the tooth missing" but this should be stated.

Page 12 l287 and P14 line 2369

The authors are talking about restorations that are placed by dentists and it should be made clearer that in those who attend some of the restorations are likely to have been placed because of wear / sensitivity rather than caries. Also in terms of recurrent caries that some of the restorations that subsequently go on to be damaged by recurrent caries ay have been restored because of wear / sensitivity. This adds considerable complexity to the interpretation of restored surface data.

finally is there any potential within these data to follow specific root surfaces? it would be fascinating to know what happened to the lesions identified as carious in the early examinations during follow-up.



Department of Dental Public Health

Faculty of dental medicine
Universitas Airlangga

Ninuk Hariyani
Lecturer and Researcher

5th January 2018

Professor W Murray Thomson,
Editor-in-Chief,
Community Dentistry and Oral Epidemiology

Faculty of Dental Medicine (FKG)
Universitas Airlangga
East Java 60132
Indonesia
Telephone +62 81314343305
ninuk_hariyani@yahoo.co.id
ninuk-h@fkg.unair.ac.id
ninuk.hariyani@adelaide.edu.au

Dear Professor Thomson,

We are very grateful to you for the opportunity to revise our manuscript and we acknowledge the time spent by the editors and reviewers in commenting on this paper. We are also very grateful to the editors and reviewers for the constructive inputs to improve this manuscript. Please find below a point-by-point reply to reviewers' and editors' comments. We hope that we have now addressed the concerns raised and believe that the manuscript has been substantially improved.

Thanking you.

Yours sincerely,

Ninuk Hariyani (Corresponding Author)

Lecturer and researcher
Department of Dental Public Health
Faculty of dental medicine
Universitas Airlangga
East Java
Indonesia

+62 81314343305
ninuk_hariyani@yahoo.co.id
ninuk-h@fkg.unair.ac.id
ninuk.hariyani@adelaide.edu.au

Comments from Editor and Associate Editor:

Comment 1:- Change 'the elderly' to 'older people' throughout the paper.

Response:- We have made the changes accordingly throughout the paper.

Comment 2:- Intro, paragraph 2 - the first 2 sentences refer to the 'growth of root surface caries' - what do you mean? is it increment? Clarify this, please.

Response:-

The explanation has been included in the introduction (page 3 lines 67-73).

Comment 3:- Reference #20 - make clear that it was a PhD thesis.

Response:- We have made the changes in the reference (page 15 lines 480).

Reviewer: 1

Comment 1:- The paper is much improved; however, there are a few comments made on the previous draft that remain as questions that think should be addressed in the Discussion to enhance the practical relevance and interpretation of the results:

Response:- Thank you very much for your positive feedback on our manuscript. All the feedback have been addressed accordingly.

Comment 2:- p.6; ls. 122-126: This is confusing “Further, the association of brushing frequency as an exposure and gingival recession was conflicting... including tooth brushing frequency and root caries.” is confusing. I had to read a few times to get the point. Can you simplify, and check your use of commas?

Response:- The authors have now addressed this concern (page 5 lines 131-135)

Comment 3:- p.7; ls. 206-208: Did you record movement between either place or did you assume that residents remained in the same place for the duration (11years) of the study?

Response:- We recorded the movement of each participant in each wave. However, for this analysis, the risk factor used was the baseline characteristic (page 7 lines 214), thus we only use the residential place at baseline. More explanation in this matter has been added in the data management section (page 7 lines 220-221)

Comment 4:- p.9; l. 212: Was there a cut-off to distinguish between gingival health and disease? How did you manage the analysis? Did you test the probability that caries risk increases monotonically as the number of teeth with gingivitis increases?

Response:- The cut-off used was “at least one tooth had bleeding after probing” (page 7 lines 225). For the analysis, gingival status was used as a risk factor with two categories (having normal gingiva vs gingivitis). We did not test the probability that caries risk increases monotonically as the number of teeth with gingivitis increases, but we did test the caries risk among people with normal gingiva vs gingivitis. We did not find any evidence of the relationship between gingival status and root caries. We also tested different cut points, and as there was no difference in the final result, we have decided to retain the variable.

Comment 5:- p.11; l. 314: Did you consider the possibility that some participants were more susceptible than others to root caries; and as a consequence average/mean data do not reveal the real incidence?

Response:- We considered the possibility by allowing time and intercept to be a random factor. Time (in years) was used as a random factor in the model allowing for modelling variance between- and within- individuals. The intercept (baseline root caries experience) was also used as a random factor. Therefore, the slope is an estimated annual growth of root caries adjusting for between-individual variations in baseline caries experience and overtime changes within-individual. Thus, our model has already taken into account the different possibility in the susceptibility of each individual in developing root caries both in baseline and overtime changes. The explanation has been given in the method section (in the statistical analysis in page 8 lines 238-242).

Reviewer: 2

Comment 1:- This paper has the potential to make a substantial contribution to the world literature on this subject. It is well generally written.

Response:- Thank you very much for your positive feedback on our manuscript.

Comment 2:- I have 1 significant concern, the sample was drawn from populations with different status in terms of fluoride in the water supply but this does not seem to have been addressed in the analyses of these data. Others have shown different levels of root caries in both adults who have lived with water fluoridation for the whole of their lives AND in those who live in communities

where fluoride has been added more than 10-15 years prior to the assessment. My understanding from this report is that Adelaide has been fluoridated since 1971 so the older adult population from Adelaide would likely have been subject to fluoride in water for a considerable time prior to the start of this study and during the follow-up period.

Response:- In this analysis, access to fluoridated water has been measured through residential place as a proxy. Thus, we analyse access to fluoridated water by including residential place in the analysis. As Adelaide has been fluoridated since 1971, the older adult population from Adelaide had been exposed to fluoridated water for a considerable time prior to the start of this study and during the follow-up period. We found that people who live in Adelaide had lower root DS but slightly higher root DFS than those lived in Mt Gambier whose water was not fluoridated. However, the difference was not statistically significant. These findings were not discussed specifically because water fluoridation was not included in the main risk factors (behavioural risk factors) and the results were not significantly different.

Comment 3:- Secondly the authors comment about attrition of the sample with time of follow-up and comment that those lost to follow up are more likely to be at higher risk from caries. This should be restated in the conclusions so that it is emphasised for those users who only look at paper abstracts!.

Response:- Thank you for the suggestion. The authors have now addressed this concern in the abstract's conclusion (Page 2, lines 51) and the conclusion section (Page 13, lines 428).

Comment 4:- Page 7 152 the authors are talking about when teeth were recorded as roots. I am sure that this description applies to teeth that have NOT been restored to replace the "more than 3/4 of the tooth missing" but this should be stated.

Response:- The authors have now addressed this concern (Page 6, lines 170-173)

Comment 5:- Page 12 1287 and P14 line 2369 The authors are talking about restorations that are placed by dentists and it should be made clearer that in those who attend some of the restorations are likely to have been placed because of wear / sensitivity rather than caries. Also in terms of recurrent caries that some of the restorations that subsequently go on to be damaged by recurrent caries may have been restored because of wear / sensitivity. This adds considerable complexity to the interpretation of restored surface data.

Response:- The authors have now addressed this concern (page 12 lines 385 and 387-389)

Comment 6:- finally is there any potential within these data to follow specific root surfaces? it would be fascinating to know what happened to the lesions identified as carious in the early examinations during follow-up.

Response:- We collected root caries data at the surface level. Thus it is possible to follow root caries in specific root surfaces to ascertain the growth of root caries in a specific root surface of a specific tooth.

Community Dentistry and Oral Epidemiology - Decision on Manuscript ID CDOE-17-227.R2

Community Dentistry and Oral Epidemiology <onbehalf@manuscriptcentral.com>

Fri 16/03/2018 4:49 AM

To: Ninuk Hariyani <ninuk.hariyani@adelaide.edu.au>;ninuk_hariyani@yahoo.co.id
<ninuk_hariyani@yahoo.co.id>

Cc: n.brown@otago.ac.nz <n.brown@otago.ac.nz>

15-Mar-2018

Dear Dr Hariyani:

The reviews for your revised manuscript ID CDOE-17-227.R2 entitled "Root surface caries among older Australians," which you submitted to Community Dentistry and Oral Epidemiology, have been completed. The comments of the reviewers are at the end of this letter.

You will see that the reviewers have recommended some further minor revisions to your manuscript, so please address the reviewers' comments and resubmit your manuscript. This should not take long, and I do not intend to send it out to review again.

To revise your manuscript, log into <https://mc.manuscriptcentral.com/cdoe> and enter your Author Center, where you will find your manuscript title listed under "Revised Manuscripts in Draft." Then click on "Continue Submission." Your manuscript number has automatically been amended to denote a revision.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using bold or colored text, though do not use "track changes" because the MC system doesn't like it. Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, please respond to the comments made by the reviewers in the space provided. You can use this space to document any changes you make to the original manuscript. Please be as specific as possible in your response to the reviewers, and be sure to address all issues they have raised.

If you feel that your paper could benefit from English language polishing, you may wish to consider having your paper professionally edited for English language by a service such as Wiley's at <http://wileyeditingservices.com>. Please note that while this service will greatly improve the readability of your paper, it does not guarantee acceptance of your paper by the journal.

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Your revised manuscript should be uploaded within the next 60 days. If you have problems with that time schedule then do let me know.

I look forward to receiving your revision.

With best wishes,
Professor W Murray Thomson
Editor-in-Chief, Community Dentistry and Oral Epidemiology
murray.thomson@otago.ac.nz

Editor comments:

Thank you for attending to para 2 of the Introduction, where you attempt to clarify the use of the term 'growth' in relation to root caries. However, that paragraph is still not right and in fact it needs to be completely rewritten. I want you to remove the word "growth" from both that section and the Abstract, and to substitute a more appropriate term such as increment. Involve ALL of your co-authors in rewording this, because it is a crucial part of the paper. And check the rest of the paper carefully for that too.

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author

This manuscript has been improved by the revisions. The sentence at the end of the abstract "Where appropriate changing these behaviours should be routinely promoted among older adults" is ambiguous as the messages for DS and DFS are different. It could be argued that the behaviour change in relation to DFS is getting dentists to place fewer restorations.

Currently there is no comment in this manuscript about the effect of water fluoridation on root caries development. I think this is the first study in the world to be able to look at this (and showed no difference between Gambier and Adelaide). It would be worth of comment in the discussion.



Department of Dental Public Health

Faculty of dental medicine
Universitas Airlangga

Ninuk Hariyani
Lecturer and Researcher

19th March 2018

Professor W Murray Thomson,
Editor-in-Chief,
Community Dentistry and Oral Epidemiology

Faculty of Dental Medicine (FKG)
Universitas Airlangga
East Java 60132
Indonesia
Telephone +62 81314343305
ninuk_hariyani@yahoo.co.id
ninuk-h@fkg.unair.ac.id
ninuk.hariyani@adelaide.edu.au

Dear Professor Thomson,

We are very grateful to you for the opportunity to revise our manuscript and we acknowledge the time spent by the editors and reviewers in commenting on this paper. Please find below a point-by-point reply to reviewers' and editors' comments. We hope that we have now addressed the concerns raised and believe that the manuscript has been substantially improved.

Thanking you.

Yours sincerely,

Ninuk Hariyani (Corresponding Author)

Lecturer and researcher
Department of Dental Public Health
Faculty of dental medicine
Universitas Airlangga
East Java
Indonesia

+62 81314343305
ninuk_hariyani@yahoo.co.id
ninuk-h@fkg.unair.ac.id
ninuk.hariyani@adelaide.edu.au

Comments from Editor and Associate Editor:

Comment 1:- Thank you for attending to para 2 of the Introduction, where you attempt to clarify the use of the term 'growth" in relation to root caries. However, that paragraph is still not right and in fact it needs to be completely rewritten. I want you to remove the word "growth" from both that section and the Abstract, and to substitute a more appropriate term such as increment. Involve ALL of your co-authors in rewording this, because it is a crucial part of the paper. And check the rest of the paper carefully for that too.

Response:- Thank you for the suggestion. We have made the changes accordingly in the abstract (page 2 lines 29-32), introduction (page 3 lines 66-83) and throughout the paper for the term you suggested.

Reviewer: 1

Comment 1:- This manuscript has been improved by the revisions. The sentence at the end of the abstract "Where appropriate changing these behaviours should be routinely promoted among older adults" is ambiguous as the messages for DS and DFS are different. It could be argued that the behaviour change in relation to DFS is getting dentists to place fewer restorations.

Response:- Thank you for the suggestion. The authors have now deleted the sentence from the abstract.

Comment 2:- Currently there is no comment in this manuscript about the effect of water fluoridation on root caries development. I think this is the first study in the world to be able to look at this (and showed no difference between Gambier and Adelaide). It would be worth of comment in the discussion.

Response:- In this study, we found that people who live in Adelaide (whose water was fluoridated) had lower root DS but slightly higher root DFS than those lived in Mt Gambier (whose water was not fluoridated). However, the difference was not statistically significant. These findings were not discussed specifically because water fluoridation was not included in the main risk factors. Furthermore, in a different paper addressing risk factors for root caries across generations in Adelaide and Mount Gambier that currently being submitted to the community dentistry and oral epidemiology journal, we discussed the finding of water fluoridation in more detail.

Community Dentistry and Oral Epidemiology - Decision on Manuscript ID CDOE-17-227.R3

Community Dentistry and Oral Epidemiology <onbehalf@manuscriptcentral.com>

Thu 26/04/2018 10:59 AM

To: Ninuk Hariyani <ninuk.hariyani@adelaide.edu.au>;ninuk_hariyani@yahoo.co.id
<ninuk_hariyani@yahoo.co.id>

Cc: n.brown@otago.ac.nz <n.brown@otago.ac.nz>

25-Apr-2018

Dear Dr Hariyani:

I am pleased to tell you that your manuscript entitled "Root surface caries among older Australians" is now accepted for publication in Community Dentistry and Oral Epidemiology.

As part of the journal's continued commitment to its authors, the Editorial Office and Publisher wish to keep you informed about what happens next. As the following information contains important information regarding journal publication and services for authors, you may wish to save it for future reference.

Your article cannot be published until the publisher has received the appropriate signed license agreement. Within the next few days the corresponding author will receive an email from Wiley's Author Services system which will ask them to log in and will present them with the appropriate license for completion.

Production status tracking: You can now track your article via the publisher's Author Services. Once your paper is with the Production Editor, you will receive an e-mail with a unique code that automatically adds your article to the system when you register. With Author Services you can check the status of your article online and choose to receive automated e-mails at key stages of production. Therefore, please ensure that we have your complete e-mail address. There will be a short delay whilst the article is sent to the Production Editor and logged into the production tracking system.

To minimise publication time of your manuscript it is important that all electronic artwork is supplied to the editorial office in the correct format and resolution. If you need advice on any aspect of preparing your artwork, please consult the illustration guidelines at:

<http://www.blackwellpublishing.com/bauthor/illustration.asp>

Page charges: Articles exceeding 7 pages (including figures and tables) are subject to a charge of US\$300 per additional page. One published page amounts approximately to 3 pages double-spaced (excluding figures and tables).

Proofing your manuscript: Community Dentistry and Oral Epidemiology uses an 'e-proofing' electronic service. You will receive an e-mail from the typesetter when your article is ready for proofing. When it is, you will receive instructions about how to download your paper and how to return your corrections. Your e-mail address is needed for this vital step, too. Please return promptly the corrected e-proofs to the Production Editor (not to the journal editor).

Reprints and Offprints: You will receive instructions for ordering offprints when you are notified that your proofs are ready for review.

Production queries: Please note that now your paper has been accepted, all queries related to the production of your paper may be directed to the Production Office at cdoe@wiley.com.

OnlineOpen is available to authors of primary research articles who wish to make their article available to non-subscribers on publication, or whose funding agency requires grantees to archive the final version of their article. With OnlineOpen, the author, the author's funding agency, or the author's institution pays a fee to ensure that the article is made available to non-subscribers upon publication via Wiley Online Library, as well as deposited in the funding agency's preferred archive. For the full list of terms and conditions, see http://wileyonlinelibrary.com/onlineopen#OnlineOpen_Terms. Any authors wishing to send their paper OnlineOpen will be required to complete the payment form available from our website at: https://authorservices.wiley.com/bauthor/onlineopen_order.asp

OnlineOpen is a pay-to-publish service from Wiley-Blackwell that offers authors whose papers are accepted for publication the opportunity to pay up-front for their manuscript to become open access (i.e. free for all to view and download) via the Wiley InterScience (WIS). Each OnlineOpen article will be subject to a one-off fee of £1525 (equivalent to \$3000) to be met by or on behalf of the Author in advance of publication. Upon online publication, the article (both full-text and PDF versions) will be available to all for viewing and download free of charge.

PDF offprints

You will be provided with a PDF offprint of your article once it has been published. In order to retrieve it, you will be required to register with Wiley-Blackwell's Author Services facility (<http://authorservices.wiley.com/bauthor/register.asp>). Author Services is a resource offered to authors of papers published by Wiley-Blackwell which offers you the facility to track the production of your article. If you don't wish to track production, you can still enjoy many benefits of registering with Author Services, such as having free online access to your article in perpetuity, information on how you can claim a 25% discount on books published by Wiley, and, to increase readership and citations of your article, Author Services lets you and your co-authors nominate up to 10 colleagues each to receive a publication alert and gain free access to your published article. All article accesses via Author Services count towards the article's overall online usage. We plan to develop new features in the future that will apply to all previously registered articles. News of these upcoming features will appear on the website.

With best wishes,
Professor W Murray Thomson
Editor-in-Chief, Community Dentistry and Oral Epidemiology
murray.thomson@otago.ac.nz

Reviewer(s)' Comments to Author: