Reviewer’s report

Title: Obesity and Caries in Four-to-Six year old English Children: A Cross-Sectional Study

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Reviewer: Santosh Kumar Tadakamadla

Reviewer’s report:

In general, this article is well-written. The strength of the article lies in that the authors have explored the impact of both individual and neighborhood-level variables on dental caries and obesity. However, there are few concerns which needs to be addressed.

INTRODUCTION

- Although it might be true that there are no studies from the UK that have explored the association between dental caries and obesity, it is not true that most of the studies have examined the impact of only individual-level factors. Literature on the impact of area-level characteristics on these conditions is abundant.

- It is necessary to write few sentences to substantiate why 6 year old children for this research. Introduction is the preferred section to write about this but authors could opt to discuss this in the 'Discussion' section.

METHODS

- Sample size calculation needs further explanation. How much the target number of children (n=352) calculated from the hypothesised odds ratio.

- It is surprising to learn that researchers have to still rely on growth references proposed almost 3 decades ago in the UK. Were any revisions done during the recent times to the 1990 growth centiles?

- Doesn't BASCD criteria require physical inspection using probe while this study only visual examination.

- It has been stated that dental examination was conducted by a single trained examiner. Authors should be reporting intra-examiner reliability, not inter-examiner. Please correct this typo.

- Were the schools public or private?
- It seems that not all the respondents answered all the questions which is quite expected in any study using questionnaires. Some information on how the missing information in questionnaires was handled needs to be provided in the methods.

- Somewhere, it would be interesting to see some information on who completed the questionnaires (percentage of fathers, mothers or other carers).

- Information provided regarding multivariate analysis is confusing. 'Generalised linear models were used to investigate the impact of neighbourhood characteristics on obesity and caries rates". Does this mean that authors have conducted logistic and poisson regression using GLM. When authors state they have used poisson and logistic regression analysis to elucidate the effect of deprivation measures on caries and obesity, it is necessary to describe what the outcome variable was. For e.g., poisson regression analysis was conducted to assess the effect of deprivation measures on caries experience (number of dmft). Why were both logistic and poisson regression conducted and why were not all the explanatory variables considered in poisson regression.

- This study did not take clustering into account. If the authors choose to not to adjust this in their statistical analysis, they need to present this as one of the limitations in the discussion.

RESULTS

- To the last sentence of the first paragraph of the results, it is better to also add the number of children who had completed questionnaires.

- Findings presented in the paragraph on page 8 (lines 36-53) is not to be seen in tables, authors needs to confirm that these findings are not presented in tables in a parenthesis.

- Auto-correct error, Dmft in table 1 needs to be corrected to 'dmft',

- No tables could be seen that describe the impact of demographic and health behaviour variables on obesity and caries.

- It is stated that ANOVA was used, but no analytical statistics related to ANOVA are presented. Further, there are few variables (e.g., Gender) which had only two categories and ANOVA is not the method of choice for these variables.

- Tables are not self-explanatory. Table legends should state the outcome variable. Footnotes have to be provided to tables 3 and 4 describing what statistical test was used and what '*' and '***' means. A p value can never be 0.0000, authors may choose to write it as <0.0001

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
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