

Comment on methodological problems in Hansson et al.: Oral microflora and dietary intake in infants with congenital heart disease: a case control study

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Dear Editor,

I read with interest the article written by Hansson et al. (2012) entitled “oral microflora and dietary intake in infants with congenital heart disease: a case control study”; however, problems with the study design and analytic methods should be considered when interpreting the results.

The authors identify their research design as a prospective case–control study. A case–control study selects participants by outcome status (i.e. dental caries development) and compares the exposure status (i.e. severe heart disease) based on outcome status (Breslow 1982). However, in this study participants were enrolled based upon having severe heart disease. Since severe heart disease is presented as the main exposure under investigation, this is a cohort study not a case–control study. A cohort study selects participants by exposure status (i.e. severe heart disease) and compares the outcome status (i.e. dental caries development) between exposure groups (Breslow 1982).

Regarding the analysis, the abstract states that the cases and controls (truly exposed and unexposed) were matched on age, implying dependence between the groups (Van Belle and Fisher 2004). For this cohort study, since the severe heart disease exposure is dichotomous and if the development of dental caries is also a dichotomous variable, conditional logistic regression, McNemar’s Chi

square test, or a risk ratio, such as Cox proportional hazards or Poisson regression each stratified by matched-pairs (Cummings et al. 2003; Arvid Sjölander et al. 2012), could have been used to account for the dependency between groups. For the continuous outcomes (i.e. dietary intake consumption or meal patterns), a statistical test that accounts for the lack of independence between the two groups, such as a paired *t* test, would have been more appropriate (Van Belle and Fisher 2004).

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