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LETTER TO THE EDITOR

Design and analytical issues: a response to "Long-term effects of tongue piercing—a case control study"

Chelsea Singleton · Gerald McGwin Jr.

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To the Editor:
The article entitled "Long-term effects of tongue piercing—a case control study" written by Zeibolz et al. [5] was both interesting and thought provoking. The authors have presented evidence supporting the association between tongue piercing and many adverse dental outcomes; however, there are some study design and analytical problems that need to be considered.

The authors describe their investigation as a case–control study. Participants were enrolled in the study based on whether or not they had a tongue piercing and the incidence of a number of dental problems was compared between the two groups. Because tongue piercing appears to be the main risk factor, this is not a case–control study; rather, it is a cohort study. The primary difference between two study designs comes from how participants are enrolled in the study. Selecting persons into a study contingent upon their exposure status and comparing disease incidence between the exposure groups defines a cohort study [3]. In order for this to have been a case–control study, the study participants should have been enrolled into the study based upon having any of the various dental outcomes examined.

With respect to the analysis, the methods section states that the χ^2 test and *t* test were used during analysis. Yet the exposure groups were matched 1:1 by age and gender. The matched nature of the study design requires that the analysis account for the lack of independence between the two groups—i.e., those with and without tongue piercing [1, 2]. McNemar's test and the paired *t* test would have been the more suitable choice of statistical tests [4].

References

1. Alexander MT, Kufera JA (2007) Butting heads on matched cohort analysis using SAS software. http://www.nesug.org/proceedings/nesug07/sa/sa01.pdf
2. Cummings P, McKnight B (2004) Analysis of matched cohort data. The Stata Journal 4(3):274–281
3. Szklo M, Nieto FJ (2007) Epidemiology: beyond the basics. Jones and Bartlett Publishers, Massachusetts
4. van Belle G, Fisher LD, Heagerty PJ, Lumley T (2004) Biostatistics: a methodology for the health sciences. Wiley, New Jersey
5. Ziebolz D, Hildebrand A, Proff P, Rinke S, Hornecker E, Mausberg RF (2012) Long-term effects of tongue piercing—a case control study. Clin Oral Investig 16:231–237

C. Singleton (✉) · G. McGwin Jr.
Department of Epidemiology, School of Public Health,
The University of Alabama at Birmingham,
Birmingham, AL, USA
e-mail: csingle1@uab.edu