Letters to the Editor

The statistics used in a paper on orthodontic treatment need

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I read with interest an EJO article (1), which reported some significant positive correlations between a number of the subjects’ attitudes/problems and their scores on the dental aesthetic index.

It was a well-designed large study. However, I think its authors should reconsider some parts of their report. The data were analysed using a chi-square and a t-test. However, as far as I understood, there were no mention of the P values computed using these tests, and there was also no evidence of using the t-test.

Due to the missing P values and the large sample size (n = 900), which could result in relatively smaller P values (2), I could not understand whether the significant differences reported were reliable or simply caused by the large sample (false positive errors).

So I calculated the chi-square P values for Tables 3–5. My calculated P values became 0.0232 for question 4, and 0.0001 for the other six questions. Nevertheless, I see the authors have stated in the discussion (p. 533, paragraphs 4 and 5) that some associations were not significant.

Finally, the tests used in that study are designed mainly to detect the difference, not correlations (3). In such a large sample, it is quite anticipated to see significant P values even for trivial associations. In this case, what is much more important than the statistical significance is the extent and direction of correlation. These need correlation coefficients, instead of chi-square.

References


Open bite as a risk factor for orthodontic root resorption

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Sir,

I was interested to read the paper by Motokawa (1) published in the December 2013 issue of Eur J Orthod. The authors aimed to clarify the prevalence and degree of root resorption induced by orthodontic treatment in patients with and without open bite (OB). One hundred and eleven patients treated with multi-bracket appliances were retrospectively selected from the patients and divided into non-OB (NOB) and OB groups. The severity of root resorption and the root shape