Letters From Our Readers

To: Editor, *The Angle Orthodontist*

Re: ''Soft Tissue Profile after Distal Molar Movement with a Pendulum K-Loop Appliance Versus Cervical Headgear: a Statistical Consideration,'' by O. Polat-Ozsoy, A. Gokcelik, A. Güngör-Acar, B.H. Kircelli. *The Angle Orthodontist* 2008;78(Mar):317–323.

We read with interest the important article published by Dr. Polat-Ozsoy et al. The authors are to be commended for their aim to conduct a prospective, randomized trial on the soft tissue profile after distal molar movement with two different orthodontic devices. Even if the statistical tests used are correct, there seems to be a statistical study design issue. Our main concern is that it does not seem that the authors had performed any sort of pre-hoc sample size calculation before enrolling patients and undertaking this experimental study. In a prospective randomized study, if statistical tests are used, their power should be determined a priori. And in order for a particular experimental result to be claimed as significant or not significant, a sufficient statistical power must be obtained and the sample size for each group should be calculated a priori. Did the authors perform a pre-hoc sample size calculation? Since we don't know if this study was sufficiently powered we don't know if these findings are really statistically correct and sufficiently powered. For example, the authors reported a claimed ''significant difference,'' in the change in Vp-Ls distance in patients in the pendulum/K-loop group and a ''significant retrusion'' in skeletal, dental and soft tissue measurements in the cervical headgear group. In fact we don't know if these ''significant differences'' are really so.

While this study is innovative, interesting and important, an accurate experimental design is the only way to draw adequate conclusion about experimental findings, tranforming good hypothesis into statistically-supported and evidence based scientific conclusions. We hope our suggestions will be useful to other authors who will be involved in similar studies in the future.

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