

## Response to the Letter to the Editor regarding “The global prevalence of apical periodontitis: A systematic review and meta-analysis”

Dear Editor,

We appreciate the interest of Dr. Fang in our study entitled “The global prevalence of apical periodontitis: a systematic review and meta-analysis” (Tibúrcio-Machado et al., 2021), recently published in the International Endodontic Journal. We are happy with the opportunity to reply to the concerns raised by the colleague regarding the methodology of our systematic review and meta-analysis.

We strongly agree with Dr. Fang that including duplicated studies affects the reliability of the results by overestimating the number of eligible participants in the statistical analysis. In the first version of our manuscript, the eligibility criteria included the following exclusion criterion: “same data as another article (the article that provided the most complete information was included),” which was removed from the final version of the manuscript to heed the reviewer’s suggestions and corrections. During the selection process, we excluded two articles from the same research group mentioned in the letter because of having the same sample (Jiménez-Pinzón et al., 2004; Segura-Egea et al., 2004). We maintained Segura-Egea et al. (2008) because it had additional information about smokers.

However, the assumption that we deliberately included duplicated results (Segura-Egea et al., 2008, 2011) is not correct, as their demographic characteristics were different. Both articles recruited participants from the same service, but the mean age of the individuals was  $37.1 \pm 15.7$  years in the study by Segura-Egea et al. (2008) ( $N = 180$ ) and  $58.7 \pm 9.6$  years in the study by Segura-Egea et al. (2011) ( $N = 100$ ). Additionally, the gender distribution was 36.7% men and 63.3% women in the first study, in contrast to 53% men and 47% women in the second study. It is possible that the sample used in the second study was part of the one published in 2008, but we could not infer this from the available data.

In addition, if the study by Segura-Egea et al. (2011) was excluded from the analysis, the estimates of our

meta-analysis would not be significantly affected, considering the small sample size ( $N = 100$ ) of that study. For illustration purposes, we carried out a new meta-analysis without the smaller study (Segura-Egea et al., 2011), and the global prevalence of apical periodontitis remained the same: 52% (Figure 1). Furthermore, in the subgroup analysis of systemic conditions, the estimates were nearly the same (before removing the paper: 48% of healthy individuals versus 63% of individuals with systemic conditions; after removing the paper: 48% of healthy individuals versus 61% of individuals with systemic conditions; Figure 2).

We therefore respectfully disagree that including both studies affected the credibility of the results of our meta-analysis, and we thank Dr. Fang for the opportunity to discuss and clarify this methodological issue.

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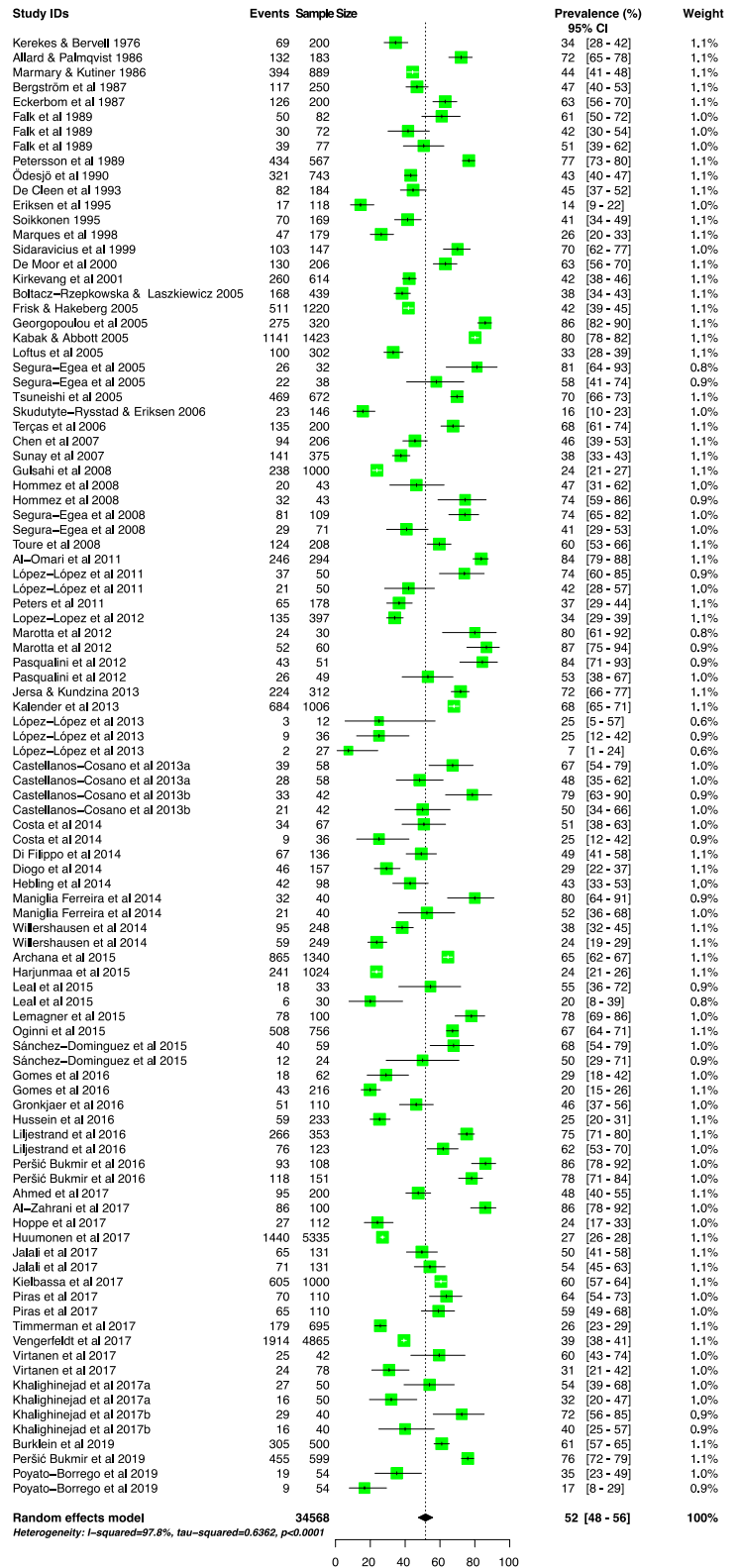
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**FIGURE 1** Prevalence of apical periodontitis in the population worldwide—removing the study by Segura-Egea et al. (2011).



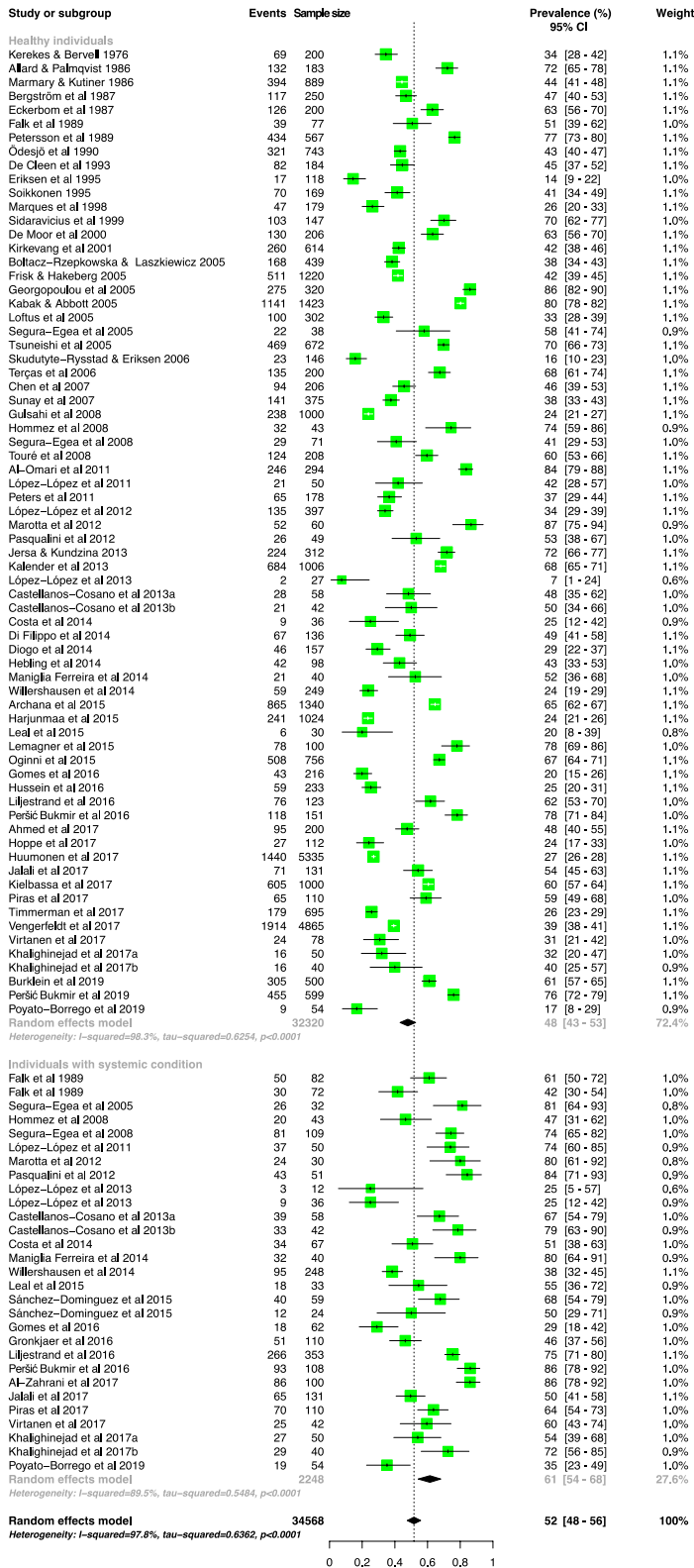


FIGURE 2 Prevalence of apical periodontitis in healthy individuals and with systemic conditions—removing the study by Segura-Egea et al. (2011).

**REFERENCES**

- Jiménez-Pinzón, A., Segura-Egea, J.J., Poyato-Ferrera, M., Velasco-Ortega, E. & Ríos-Santos, J.V. (2004) Prevalence of apical periodontitis and frequency of root-filled teeth in an adult Spanish population. *International Endodontic Journal*, 37, 167–173.
- Segura-Egea, J.J., Castellanos-Cosano, L., Velasco-Ortega, E., Ríos-Santos, J.V., Llamas-Carreras, J.M., Machuca, G. et al. (2011) Relationship between smoking and endodontic variables in hypertensive patients. *Journal of Endodontics*, 37, 764–767.
- Segura-Egea, J.J., Jiménez-Pinzón, A., Poyato-Ferrera, M., Velasco-Ortega, E. & Ríos-Santos, J.V. (2004) Periapical status and quality of root fillings and coronal restorations in an adult Spanish population. *International Endodontic Journal*, 37, 525–530.
- Segura-Egea, J.J., Jiménez-Pinzón, A., Ríos-Santos, J.V., Velasco-Ortega, E., Cisneros-Cabello, R. & Poyato-Ferrera, M.M. (2008) High prevalence of apical periodontitis amongst smokers in a sample of Spanish adults. *International Endodontic Journal*, 41, 310–316.
- Tibúrcio-Machado, C.S., Michelin, C., Zanatta, F.B., Gomes, M.S., Marin, J.A. & Bier, C.A. (2021) The global prevalence of apical periodontitis: a systematic review and meta-analysis. *International Endodontic Journal*, 54, 712–725.