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Research Letter

Increased burden of cracked teeth in US and UK during the COVID-19 pandemic: Evidence from an infodemiological analysis



Cracked tooth, defined as partial or complete fracture starting from the crown and extending subgingivally, is a relatively rare but important condition, whose symptoms range between simple discomfort up to frank pain.¹ Although evidence published by Lee et al. suggests that the incidence of this condition may have considerably decreased between the 2009 and 2019,² a recent observational study by Nosrat et al. concluded instead that the tooth injuries may have considerably increased during the coronavirus disease 2019 (COVID-19) pandemic compared to the period before.³ We hence planned an infodemiological analysis to provide further insights on this both clinically and socially important aspect.

To corroborate these intriguing findings on a nationwide scale, we conducted an electronic search in Google Trends (Google Inc. Mountain View, CA, US), using the search term “Cracked Teeth”, with the geographical area set to either “US” or “UK” and the search period comprised between July 2017 and July 2022. The weekly Google Trends score for “Cracked Teeth”, which mirrors the popularity of this search term in the countries, was downloaded into a Microsoft Excel file (Microsoft, Redmond, WA, United States). The whole search period was then divided as “pre-COVID-19” (from July 2017 to January 2020) and “COVID-19” (From February 2020 to July 2022), and the difference in the volume Google searches for “Cracked Teeth” in both countries were compared between pre-COVID-19 and COVID-19 periods using Mann–Whitney test (Analyse-it Software Ltd, Leeds, UK). The study was conducted in accordance with the Declaration of Helsinki, under the terms of relevant local legislation. This analysis was based on electronic searches in an open and publicly repository (Google Trends), and thus no informed consent or Ethical Committee approvals were required.

Abbreviation: COVID-19, Coronavirus Disease 2019.

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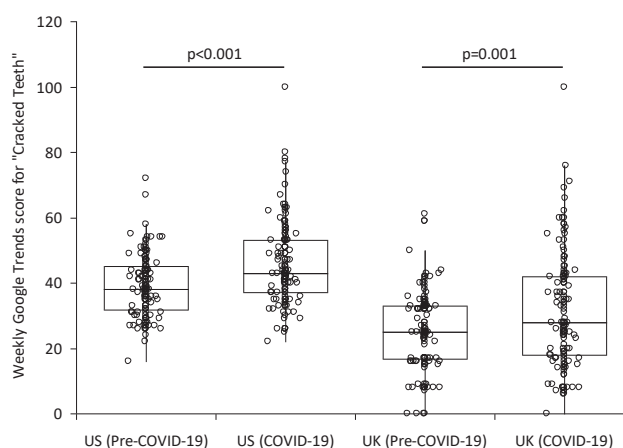


Figure 1 Weekly google trend score for “cracked teeth” in the US and UK during and before the coronavirus disease 2019 (COVID-19) pandemic.

The main results of our analysis are summarized in Fig. 1. The median value of weekly Google Trends score for “Cracked Teeth” was found to be significantly increased during the COVID-19 pandemic both in the US (43 with interquartile range [IQR] 37–53 vs. 38 with IQR 32–45; +13% and $P < 0.001$) and UK (28 with IQR 18–42 vs. 25 with IQR 17–33; +12% and $P = 0.001$), compared to the homologous period before.

Although we acknowledge that predicting the burden of a particular oral phenomena just through an infodemiological approach may not be straightforward, the results of our analysis provide a strong support to data earlier published,³ suggesting that the burden of cracked teeth may have significantly increased both in the US and UK during the COVID-19 pandemic. Some reasonable explanations can be found for justifying such an increased incidence of

fractured teeth observed after the spread of the COVID-19 pandemic, encompassing a variety of direct or indirect causal factors. The more likely of such potential determinants include enhanced COVID-19 related anxiety and sleep disturbances,⁴ which are then accompanied by detrimental oral behaviours such as bruxism,⁵ increased consumption of hard foods such as popcorn during lockdown or quarantine periods,⁶ and increased burden of physical violence, especially in the domestic environment, also attributable to prolonged isolation for lockdowns, quarantines or isolations.⁷ Symptoms exacerbation of temporomandibular joint disorders along with longer time spent on leisure time during the pandemic may be additionally important determinants of our observation.⁸ Based on these findings, we suggest that more investments shall be made in preventing root fractures and potentiating dentists and endodontists activities, to face the enhanced burden of endodontic diseases caused by this COVID-19 worldwide outbreak ongoing and by future potential pandemics which may trigger similar problems.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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Riccardo Nocini

Department of Surgery, Dentistry, Paediatrics and Gynaecology-Unit of Otorhinolaryngology, University of Verona, Italy

Giuseppe Lippi*

Section of Clinical Biochemistry and School of Medicine, University of Verona, Italy

Camilla Mattiuzzi

Service of Clinical Governance, Provincial Agency for Social and Sanitary Services (APSS), Trento, Italy

*Corresponding author. Section of Clinical Biochemistry University Hospital of Verona, Piazzale L.A. Scuro, 10, Verona, 37134, Italy.

E-mail address: giuseppe.lippi@univr.it (G. Lippi)

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