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## Letter to the Editor

## Monkeypox outbreak and global public interest in the disease



Sir,

We read with profound interest the recent letter in the *Journal of Hospital Infection* by Ortiz-Martínez *et al.* [1]. While this letter highlights the quality of online information available on monkeypox (MPX) disease, it is unclear if the general public is actually looking for information on MPX.

Within a few weeks of the first cases being reported (in May 2022), by late July 2022, more than 15,000 confirmed cases of MPX had been identified worldwide [1–4]. Despite intense scientific and media interest, little is known about the interest of the general public in this new global MPX outbreak. We conducted a rapid infodemiological study to analyse the trends of public interest in this MPX outbreak. The distinct advantage of infodemiological studies, especially during the coronavirus disease 2019 (COVID-19) pandemic, is the rapid surveillance of public health needs, health-information-seeking behaviours, and real-time analysis of data (e.g. online internet search data analysis) [5,6].

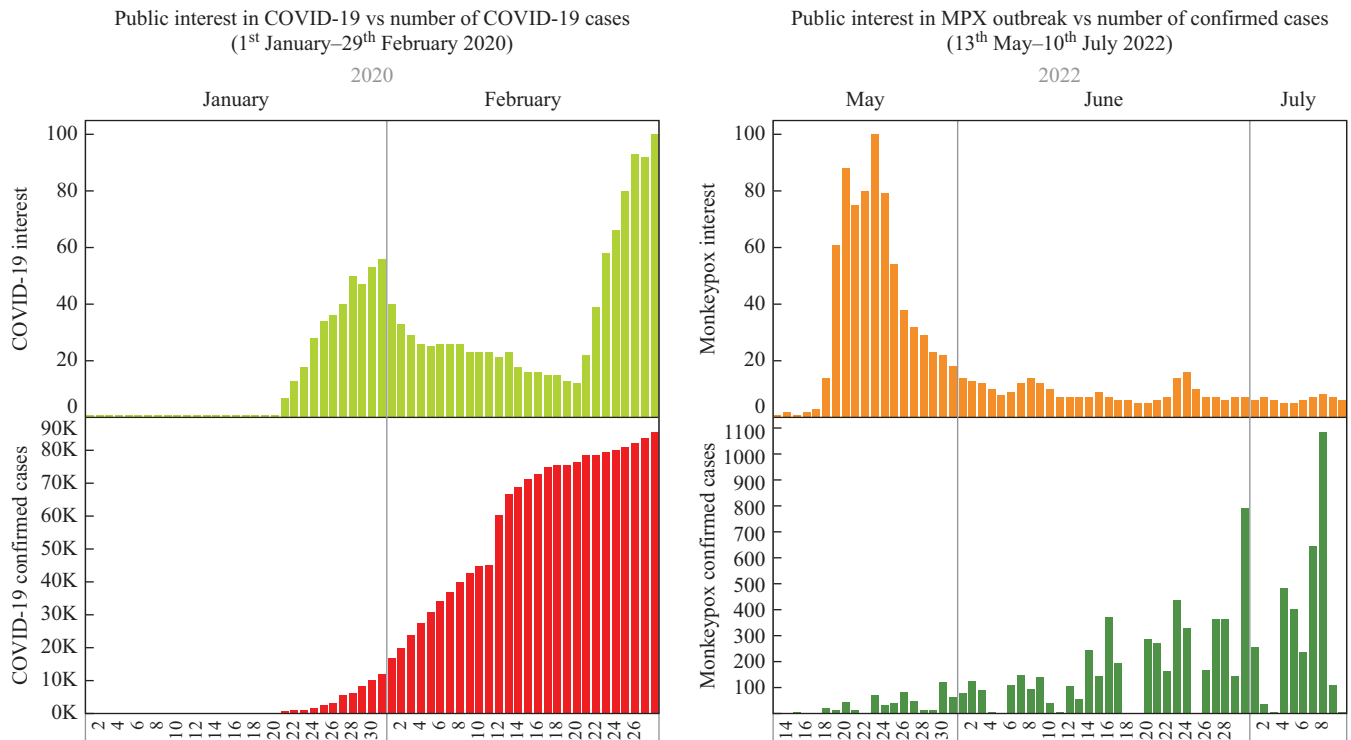
Google Trends (GT) data were analysed for this rapid MPX-related infodemiological analysis [5–7]. GT shows search data about any given term/topic as a proportion of interest over time in normalized data of relative search volumes (RSVs) based on the search popularity from 0 (low) to 100 (highly popular) [6,7]. We searched GT with the keyword ‘monkeypox’, and the location of the searches included the USA, Canada, UK, Germany, Spain and worldwide from 13<sup>th</sup> May to 10<sup>th</sup> July 2022. We compared data about the online searches that took place among the public in the USA, Canada, UK, Germany and Spain; countries where the numbers of MPX cases were noted to be very high from May to July 2022 [3,4,8]. Joinpoint regression analysis was conducted to identify trends in the GT search public interest on MPX from 13<sup>th</sup> May to 10<sup>th</sup> July 2022 as a time unit, and the magnitude of changes in public interest in each segment (i.e. the period between each time point) was estimated through the daily percentage change (DPC), with a 95% confidence interval (CI). The average DPC represents the percentage change for the whole period.

Public Google searches on MPX peaked between 16<sup>th</sup> and 24<sup>th</sup> May 2022, which was the first week of cases being reported in mass media and subsequently by the World Health Organization [1–4]. Globally, a dramatic increase in public interest in MPX was observed during the early days of the outbreak

(16<sup>th</sup>–19<sup>th</sup> May 2022), with a DPC of 196.6% (95% CI 116.0–307.1) (Table S1, see online supplementary material). A similar trend was observed at country level in Segment 2 in the USA (DPC 346.0, 95% CI 135.2–745.7), Canada (DPC 442.8, 95% CI 168.6–997.0), Germany (DPC 222.1, 95% CI 148.4–317.6) and Spain (DPC 458.4, 95% CI 229.1–847.7), but in Segment 1 in the UK (DPC 40.4, 95% CI 30.4–51.2). No significant average DPC values were found in global- and country-level RSVs. We also compared the search patterns with the number of MPX cases reported worldwide and the first 60-day cases of COVID-19 with public search interest during the COVID-19 outbreak (January–29<sup>th</sup> February 2020; Figure 1). While an increase in cases corresponded with an increase in searches for COVID-19, no such trends were observed for MPX.

Our results indicate increased initial transitory attention to MPX when a new, unusual, multi-national outbreak of MPX was reported globally. Online searches were significantly higher when the number of MPX cases was below 350 worldwide (13<sup>th</sup>–20<sup>th</sup> May 2022), but a shortfall of interest was observed later (even when the number of cases exceeded 15,000 across more than 50 countries) [2,3,8]. This is in contrast to COVID-19 searches, and it could be possible that after the initial interest in May 2022, people did not think about MPX as a serious threat. In this regard, it is important to develop risk communication and community engagement strategies for MPX based on experiences from past infectious disease outbreaks. Also, as the number of MPX cases continues to escalate, without a concomitant increase in Google searches, it remains to be seen how the general public seeks information on this emerging pandemic, or is made aware about the impending threats. Timely understanding of internet search trends and public health-seeking behaviour during an early stage of an outbreak can help to identify critical areas for improvement in public health interventions and tailor awareness campaigns [1,5]. Disseminating evidence-based health information on awareness, prevention, signs and symptoms, and detection of MPX in an electronic medium is vital to debunking digital misinformation spreading, conspiracies and myths surrounding MPX that can confuse the general public [1,5,7].

Although our results presented upward trends in public interest when the number of MPX cases was low, all the countries showed a reduction in the pace of the trend in Segments 3 and 4. Despite the recent increase in confirmed MPX cases, only the US public presents a significant upward trend in Segment 6. Although there are geographical differences in health-information-seeking behaviour, none of the countries with the highest numbers of confirmed MPX cases had significant average DPC values. This downward trend of public interest in MPX should concern policy makers, as this was a



**Figure 1.** Public Google search interests during the early stages of coronavirus disease 2019 (COVID-19) and monkeypox (MPX) outbreak.

critical time for preventive measures requiring public attention [5–7]. Also, unless the general public is getting messages creating awareness about MPX from other sources, the reduction in Google searches could relate to higher potential for continued disease transmission, delayed presentation/diagnosis or under-reporting of MPX cases.

The World Health Organization declared MPX a global public health emergency in the last week of July 2022 [8]. We analysed data before this declaration, and it remains to be seen if the WHO declaration will sensitize the public to MPX outbreaks or heighten the need for information via online searches. Based on our analysis, for the first 2 months of the outbreak, there was no major online search interest among the general public regarding MPX. Our findings provide time-sensitive information, and the data indicate complacency among the general public in the face of major impending MPX disease outbreaks. Policy makers and public health practitioners worldwide need to increase awareness and sensitize the general public about MPX.

#### Conflict of interest statement

None declared.

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None.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jhin.2022.07.033>.

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