**Introduction**

COVID-19 has affected birthing practices on a global scale. Partners and doulas have been excluded from hospital birthing rooms, and patients have avoided hospital-based care.

Simultaneously, home birth practitioners have reported increased interest in their services. In this analysis, we used online search data to assess changes in home birth information-seeking behaviors across the United States and United Kingdom during the COVID-19 pandemic.

**Methods**

This cross-sectional study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline. Google Trends is a public search volume database and has been used to understand changes in public interest in various health-related contexts.

Because the tool is anonymized and publicly available, the University of California San Francisco did not require institutional review. Data in the tool are reported as weekly relative search volumes (RSVs), which reflect the query share of a search term relative to the total number of queries during a specified period, scaled from 0 to 100, with a higher score indicating a greater query share. Data were extracted for the following search terms, selected via the tool's related queries database: home birth, homebirth, birth at home, at home birth, and giving birth at home. Queries from March 3, 2019, to November 1, 2020, in the United States and United Kingdom were extracted.

Interrupted time-series single-group analysis was performed to assess whether search frequency differed in the pre- and post–COVID-19 periods, using March 1, 2020, as the start of the COVID-19 period. We constructed segmented linear and nonlinear models to assess differences in RSV trends between periods (2-tailed $\alpha = .05$), while accounting for the slope of the underlying trend (Table). Models 1 and 2 were linear, while models 3 and 4 were nonlinear. Models 2 and 4 included terms accounting for the interaction between time and the pre- and post–COVID-19 indicator. Final model selection was based on mean squared error. Data were analyzed in R version 3.6.1 (R Project for Statistical Computing).

**Table. Interrupted Time Series Model Selection**

<table>
<thead>
<tr>
<th>Model</th>
<th>United States</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relative risk (95% CI)</td>
<td>$P$ value</td>
</tr>
<tr>
<td>1$^a$</td>
<td>1.70 (1.51-1.93)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>2$^b$</td>
<td>3.39 (2.48-4.64)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>3$^c$</td>
<td>1.82 (1.61-2.06)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>4$^d$</td>
<td>7.17 (0.77-67.12)</td>
<td>.08</td>
</tr>
</tbody>
</table>

$^a$ $\beta_0 + \beta_1(COVID) + \beta_2(Week)$.
$^b$ Final model, selected based on mean squared error: $\beta_0 + \beta_1(COVID) + \beta_2(Week) + \beta_3(Week \times COVID)$.
$^c$ $\beta_0 + \beta_1(COVID) + \beta_2(Week) + \beta_3(Week^2)$.
$^d$ $\beta_0 + \beta_1(COVID) + \beta_2(Week) + \beta_3(Week^2) + \beta_4(Week \times COVID) + \beta_5(Week^2 \times COVID)$.

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Results

Mean (SD) RSV scores during the COVID-19 era were 53.5 (12.4) in the United States and 39.0 (10.9) in the United Kingdom, compared with pre-COVID-19 scores of 40.6 (14.3) and 31.2 (10.9), respectively. We found a 239% increase in home birth-related RSVs in the United States (relative risk [RR], 3.39; 95% CI, 2.48-2.64; \( P < .001 \)) and a 53% increase in the United Kingdom (RR, 1.53; 95% CI, 1.06-2.21; \( P = .02 \)) (Figure). Higher RSVs were noted in the earlier months of the pandemic, and 8 of 9 (89%) and 6 of 9 (67%) of the weeks with the highest volume of searches (ie, >90th percentile RSV score) in the United States and the United Kingdom, respectively, occurred between March and May 2020.

Discussion

In this study, we identified increased public interest in home birth during the COVID-19 pandemic in the United States and the United Kingdom, most prominently during the early months of the outbreak. This increased information-seeking parallels media coverage and anecdotal reports from home birth practitioners, who have noted heightened demand for home birth services. While the largest spike in searches for home birth information occurred early in the pandemic, RSVs have persisted at levels greater than prepandemic trends. The association was more prominent in the

Figure. Relative Search Volume for Home Birth–Related Queries by Week in the United States and United Kingdom, March 2019 to November 2020

Circles represent weekly relative search volume scores; solid lines, actual RSV trend lines; dashed lines, estimated relative search volume trend lines in the absence of COVID-19; gray area, the COVID-19 period.
United States than in the United Kingdom, which may reflect the United Kingdom’s higher baseline rate of home births and more integrated home birth system prior to the pandemic. These results have important implications for birth workers as they consider shifts in patient birthing preferences. Close collaboration between patients, home birth practitioners, and hospital-based practitioners is vital to promote resource sharing and optimize patient care.

As individuals increasingly rely on digital sources of health-related information, tools like the one used in this study are important for understanding information-seeking behaviors. In the context of an evolving pandemic, these tools allow for real-time analysis of rapidly changing trends at a population level. A limitation of this data set is that it only captures data from a single search engine. The population sample may be biased toward those with higher internet usage, including those who are literate and have internet access. In addition, search volume data may not necessarily correlate with utilization of services. Future research will be needed to understand the long-term association of increased public information seeking with the rates of home births.

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Corresponding Author: Christina N. Schmidt, BS, School of Medicine, University of California, San Francisco, 513 Parnassus Ave, S-221, San Francisco, CA (christina.schmidt@ucsf.edu).

Author Affiliations: School of Medicine, University of California, San Francisco (Schmidt, Cornejo); Department of Obstetrics and Gynecology, University of California, San Francisco (Rubashkin).

Author Contributions: Ms Schmidt had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Schmidt, Cornejo.

Acquisition, analysis, or interpretation of data: Schmidt, Rubashkin.

Drafting of the manuscript: Schmidt, Cornejo.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Schmidt.

Administrative, technical, or material support: Cornejo.

Supervision: Rubashkin.

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REFERENCES