

Commentary

## Commentary on: Data-Driven Insights on the Effects of COVID-19 (Parts I and II)

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In the face of so much change and uncertainty related to COVID-19, all of us who run an organization, whether small or large, would like to better understand the potential impact of the pandemic on our practices. Having objective data, in order to bring some structure and order to the decision-making required to keep a practice running effectively, is essential, but hard to obtain. The authors have used a novel approach to help us sort out this complex topic, using the Google Trends tool to evaluate what the American public has been viewing online during the early portion of the COVID-19 pandemic, as related to aesthetic surgery. In the first part of their research, they have looked at the search traffic patterns.<sup>1</sup> In the second part, they administered a survey, trying to sort out the reasons behind their findings of increased or diminished web traffic.<sup>2</sup> They are to be congratulated for this thought-provoking work.

Because most people are unfamiliar with Google Trends, let us start with a brief primer. Google dominates the world's search engines, with 92.2% of all online searches in 2019 to 2020.<sup>3</sup> Thus, looking at search term popularity in Google is a viable method of research for the analysis of web traffic patterns. The Google Trends tool has the advantages of being free of charge, rapid, easily available, and repeatable. One simply navigates their browser to the "Trends.Google.com" site and begins exploring. The user can specify all the search terms, geographic zones, and time periods, and the system quickly generates a graph of interest in the term by time and geography, and a list of related searches. Boolean searches are also possible, using a "+" to represent "or" and "-" to represent "not."<sup>4</sup> The data, however, tend to "noisy," with a lot of jitter, and

Google Trends does not have many onboard tools to sort the results or to analyze their significance.

Note that Google Trends only shows the relative magnitude of traffic—it does not help to sort out the *reasons* why a term is more or less popular. A term such as "breast implants" could change in search term volume because of an FDA edict, a news report about an implant manufacturer, a celebrity's story, or multiple other reasons unrelated to general patient interest. The rankings are then automatically normalized on a 1 to 100 scale, with the highest search volume of the term in the date range and geographic area getting set at 100, and all other values compared to that, in a relative manner. Google Trends does not specify the actual search numbers, and this is a significant limitation of the system. Every Google Trends report for a single term will show 100 for the highest value, whether there are millions of searches for that term, or just hundreds.

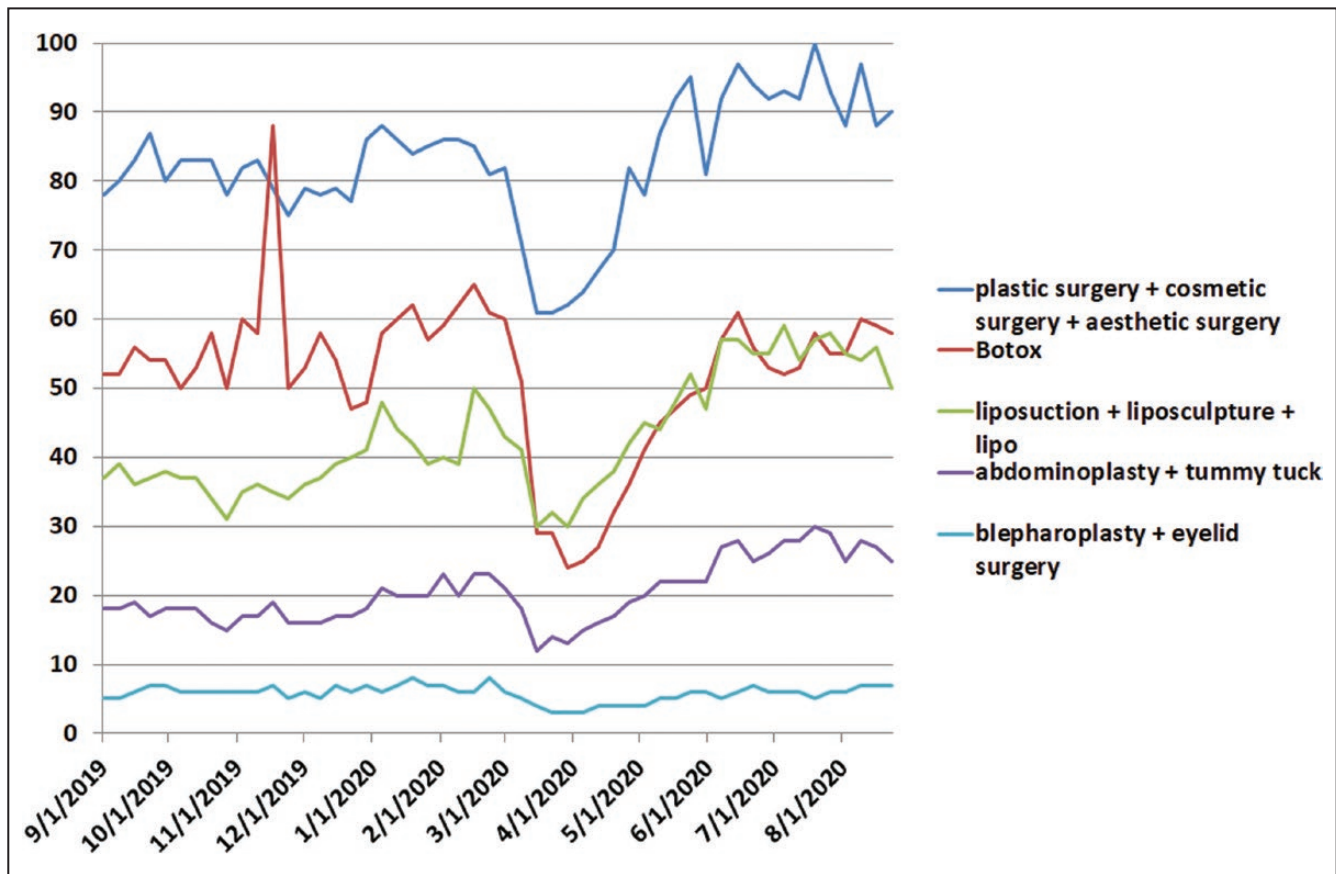
The authors looked at percentage change from baseline for each of their key terms, but did not try to sort out the relative magnitude of each of these changes; and this is one of my few criticisms of the paper. Although one can use the "compare" feature of Google Trends to sort out stronger effects from weaker ones, it becomes unmanageable when more than a few terms are used.

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**Figure 1.** Google Trends data, United States only, September 2019 to 2020, for terms related to plastic surgery, Botox, liposuction, abdominoplasty, blepharoplasty.

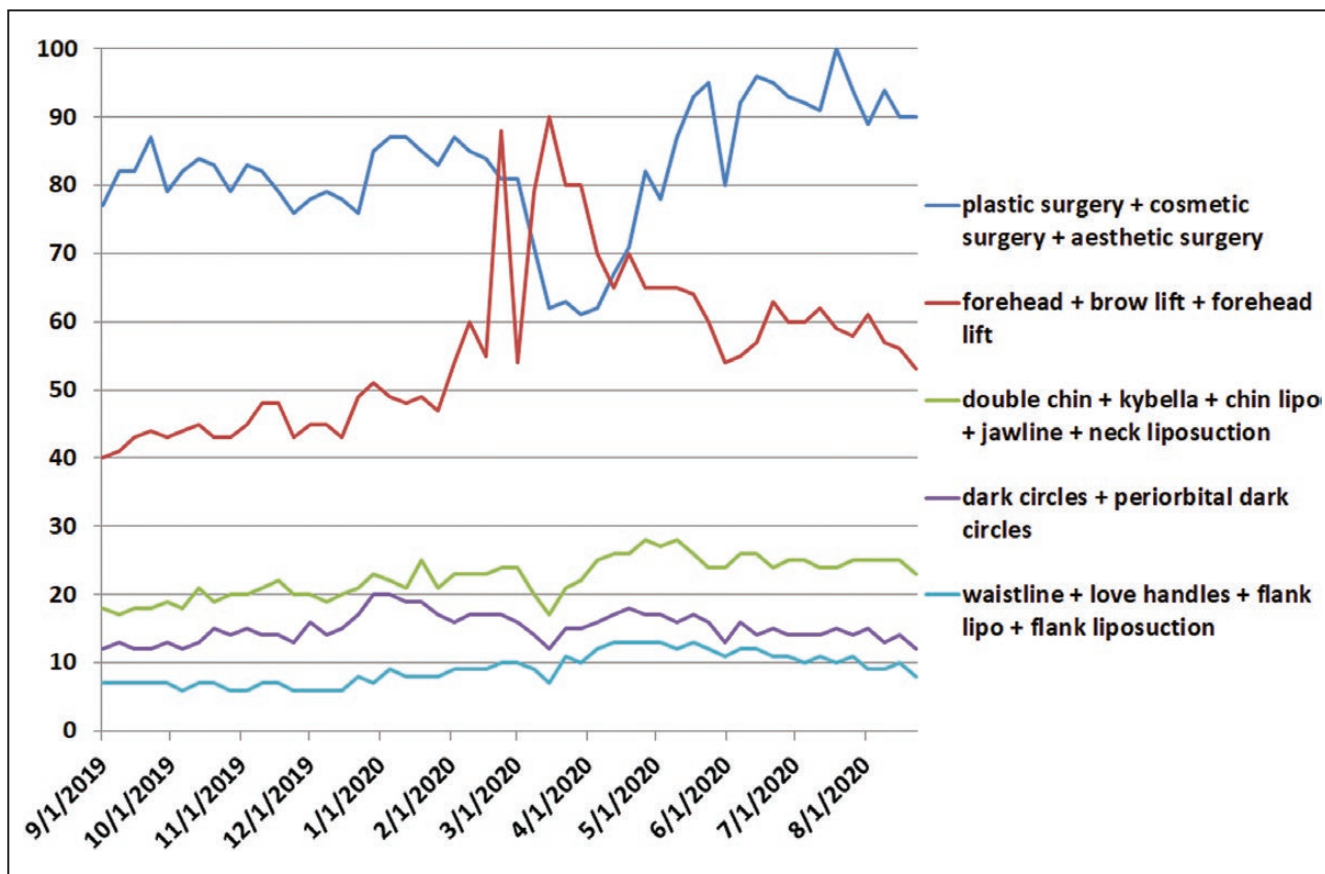
I used a few of the key terms listed in Figure 6 of the paper,<sup>1</sup> and, like the authors, generated some Google Trends data, which were then exported to Microsoft Excel for graphing. (Unlike the authors, I did not perform any deseasonalizing of the data by looking at prior years.) By keeping a small number of terms on the same graph, we can now really see which trends are larger and which ones are less important. This gives some additional perspective to the authors' findings.

For example, in Figure 1, it is easy to see a wide, but temporary, drop off in search term volume for "plastic surgery + cosmetic surgery + aesthetic surgery" between the end of January 2020 and the end of April 2020, with a mild rise above baseline thereafter. Search interest for "Botox" has a similar size swing over the same time period, before returning to baseline levels. These two are the most important fluctuations of the ones I queried. The drop off for "liposuction + liposculpture + lipo" is about two-thirds the relative size, and the declines in "abdominoplasty + tummy tuck" and "blepharoplasty + eyelid surgery" are the smallest of that group. In Figure 2, I purposely kept the combined plastic surgery search term on the list of terms, to act as a reference for the magnitudes of search term

changes and to act as an "anchor" for the graph. Here, we see a large transient rise in the search terms of "forehead + browlift" over the same time period, but fairly minor fluctuations with terms for "double chin + kybella + chin lipo + jawline + neck liposuction," "dark circles," or "waistline + love handles + flank lipo."

So, while the percentage changes listed in Figure 6 of the authors' paper<sup>1</sup> are quite interesting, I wish the authors had taken the extra step and done some sort of preliminary Pareto analysis. Otherwise, as a practice owner or business manager, it is hard to know which findings are truly most important and actionable. The relativistic, automatically scaling nature of a single Google Trends search term can be somewhat misleading without a stable reference, making minor changes look more impressive than they are.

Finally, Google Trends data—everything it generates—are based on a sample processed by Google. To rapidly generate the results, Google does not refer to the millions and millions of actual searches it does. In their own words, users get "a random sample of Google search data from as far back as 2004 and up to 36 hours before your search," rather than the raw data.<sup>4</sup> This smaller sample allows it to



**Figure 2.** Google Trends data, United States only, September 2019 to 2020, for terms related to plastic surgery, forehead, double chin, periorbital dark circles, flank liposuction.

generate results in fractions of a second. Unfortunately, Google does not tell us how it processes or selects the data it presents to us, or whether that changes with updates to the Google search engine algorithms. That is a transparency issue with Google, and certainly not any fault of the authors.

In Part II,<sup>2</sup> the authors sent out an ad hoc survey to try to understand the reasons behind these changes, using the Amazon Mechanical Turk to query US residents over age 18. The study population had a median age group of 25 to 34 years. A total of 704 respondents were included. Looking at age data from the 2019 Aesthetic Plastic Surgery National Databank statistics,<sup>5</sup> only 17.5% of the patient population was this age, with the median age being 35 to 50, accounting for 38.6% of all procedures. The study population is therefore younger than the typical aesthetic patient seen by members of The Aesthetic Society. This may well influence the answers received.

The authors also used an equal portion of men and women, which is a different distribution to that found in the Aesthetic Plastic Surgery National Databank statistics from 2019, where the mix was 93% female to 7% male for surgical procedures, and 90.3% female and 9.7% male

for nonsurgical procedures. Thus, males are considerably overrepresented in this study population, compared with the typical aesthetic patient population, which may skew the responses. This may explain the authors’ finding that 3 out of 4 respondents had no change in interest in plastic surgery during the pandemic. As one might expect, changes in spending priorities was the most common reason given for the 15% to 20% of respondents who had a decreased interest in aesthetic interventions.

What is particularly striking are the findings the authors noted when categorizing the data into patients with prior plastic surgery experiences and those without. Looking at the patients who had no prior aesthetic experience, the response really varied quite little from question to question. The patients who had experienced prior aesthetic procedures were associated with a much more favorable viewpoint and increased interest in procedures during the pandemic. This finding was found to be statistically significant for injectables, and for facial, breast, and body aesthetic surgery.

Market communications aimed at your existing patient list, therefore, are likely to still be very effective during the pandemic. Keep in touch with your patients,

especially your “practice ambassadors”—the patients who refer new patients to you frequently. It is a marketing maxim that it is easier to convince a happy customer to repurchase than it is to convince a new one to buy: this is likely more true than ever. In the era of COVID-19, however, the message must be highly authentic, and create a strong connection with your customer/patient. Review and update your marketing messages to meet the changing marketplace. Ford Motors, for example, changed their planned ad campaign to one featuring COVID-19 car payment relief programs, and reminded customers about how the company has responded to past disasters. Listen carefully to what your patients are telling you. Make sure your communications are not tone-deaf or insensitive.

In general, what else can we learn from the disruption in consumer purchasing caused by the COVID-19 pandemic? A report by McKinsey<sup>6</sup> estimates a 40% to 50% decline in discretionary consumer spending, which correlates to approximately a 10% reduction in GDP, and up to one-third of US jobs vulnerable to pay cuts and layoffs. To put this impact into perspective, this type of economic shock has not been seen in the United States since World War II.

Everyday examples of recent changes in consumer behavior have included: hoarding of items (ie, toilet paper and bleach), improvisation (homemade masks and face shields, wedding ceremonies on Zoom), rapid embrace of digital technologies, and anything that minimizes contact, ranging from contactless digital payments, to home delivery of groceries, to remote work, remote learning, and dramatically increased use of online shopping. People are spending more time at home, and more time online than ever before, whereas consumption of travel, traditional entertainment, dining, and other luxury items has dropped off precipitously. In general, consumers are focused on personal health and safety, financial security, and the health of family and friends—basic needs found at the base of Maslow’s hierarchy. Self-fulfillment needs, such as personal accomplishment and job satisfaction, are currently taking more of a back seat.

Market segmentation is another useful tool to look at buying behavior. A recent report by Accenture divides consumers into 5 psychographic segments or stereotypical behavior types, based on their response to the pandemic.<sup>7</sup>

1. The Worrier (21%): fearful and anxious, the worrier is highly aware of pandemic-related news and is typically a male senior citizen.
2. The Individualist (22%): this type of consumer looks out for himself or herself, stockpiles essentials, and tries to maintain their status quo. Typically an 18- to 24-year-old female.
3. The Rationalist (39%): has a “keep calm and carry on” approach. Very aware of news, has increased purchase of advised products, such as hygiene, cleaning, and staples. Typically a 25- to 31-year-old female.
4. The Activist (8%): helps in her community, buys what they need, as needed. Is 59% more likely to be shopping more for people beyond their immediate household.
5. The Indifferent (11%): nonchalant and carrying on “as usual.” Is the least informed of all consumer types, and least likely to comply with governmental rules. Is less likely to feel stressed or anxious than the other consumer types. Typically a 40- to 55-year-old female.

The proportion of people in each of these 5 groups varies with the state of the pandemic. According to this analysis, “Worriers” are more common earlier in the development phase, while “Individualists” and “Indifferents” increase in number as the pandemic stabilizes, and the number of newly diagnosed COVID cases declines. Think about how you would try to appeal to each group, as they will require different approaches and messaging.

“Worriers” and “Rationalists,” for example, may particularly appreciate:

- communication about enhanced cleaning of the facility, and enhanced patient and staff screening for COVID;
- performing preoperative electrocardiograms and lab work in the office, so the patient does not need to go to an outside testing center;
- adjusting scheduling of patient visits, to stagger entry and exit;
- adjusting workspace for social distancing;
- adopting contactless payments; and
- curbside pick-up of skincare products.

“Activists” might appreciate communication about any outreach that the practice or its members have taken to help the local community, or any efforts of medical volunteerism that the practice physician has performed in local hospitals, in addition to the steps listed above.

“Indifferents” may need more education and explanations, about why it is so important to avoid operating on COVID-positive patients and how to prepare for surgery in the new era. Consider what can be done to further improve postoperative directions and teaching methods.

All patients will be hyperfocused on financial issues, and the practice should have:

- clear pricing information online; and
- clear and fair policies about procedure postponement in the event of COVID-19.

Further suggestions for general practice preparation can also be found in COVID-specific materials from both The Aesthetic Society<sup>8</sup> and the American Society of Plastic Surgeons.<sup>9</sup>

I look forward to further writings from the authors on this subject, and again thank them for 2 enjoyable and thought-provoking papers.

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