

PSYC 28791

Emotional and Physical Connection During a Public Health Crisis: What Do Internet Search-Rates Tell Us?

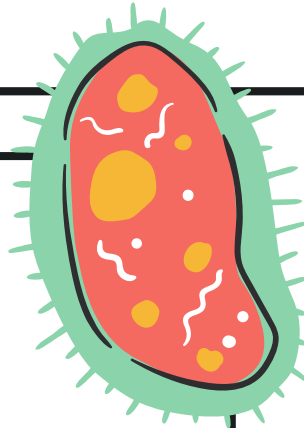
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Background

COVID-19 & Physical Distancing



- Stay at home mandates put a hold on in-person activities
- Resulted in loss of social contact, a known key contributor to health and well-being
- Social deprivation is associated with high risks of mental illness

Human Need to Physically and Emotionally Connect



- Our brains treat romantic love as a central need
- Psychologists suggest that a global pandemic likely only exacerbates this need
- In the wake of COVID-19, pop media exploded with information on how to virtually connect to satiate this human necessity
- However, surveys suggest that one in four Americans broke quarantine to engage in sexual contact

Google Trends as A Research Tool

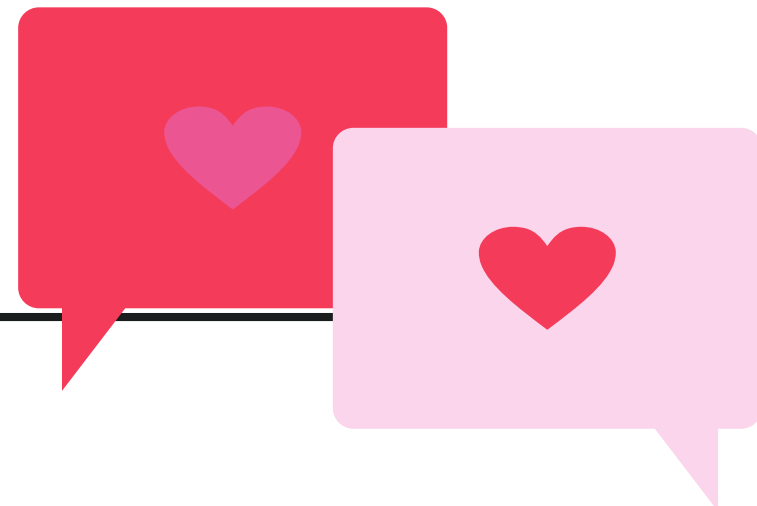


- Throughout the pandemic, researchers have begun to turn to Google search data to track attitudes and responses to public health crisis
- Commonly used in psychology to track mental health trends
- Reports relative search volume over time (as well as other data points)

Methodology

Data-driven research question:

How did individuals continue to seek romantic connections in the wake of COVID-19 stay at home mandates?



1) Qualitative research

Analyzed popular media sources & psych research to identify 17 key terms commonly used to discuss emotional and physical connection during the COVID-19 pandemic

2) Google Trends

Used googletrendR package to collect data on RSV and related search queries from 17 original terms.

3) Code

- Wrote iterative function that scrapes RSV data from google trends and conducts regression analysis over any list of terms
- Combined results of each analysis to create one big data set, as well as an additional terms' data set for further analysis

4) Data Sets

- Data set consisting of daily search-rates starting from 2017-05-21 and ending at 2022-05-15 for 17 key terms (over 4,000 data points)
- Data set consisting of 917 additional search terms collected using the "related queries" function

17 search terms relating to emotional and physical connection during COVID-19 pandemic

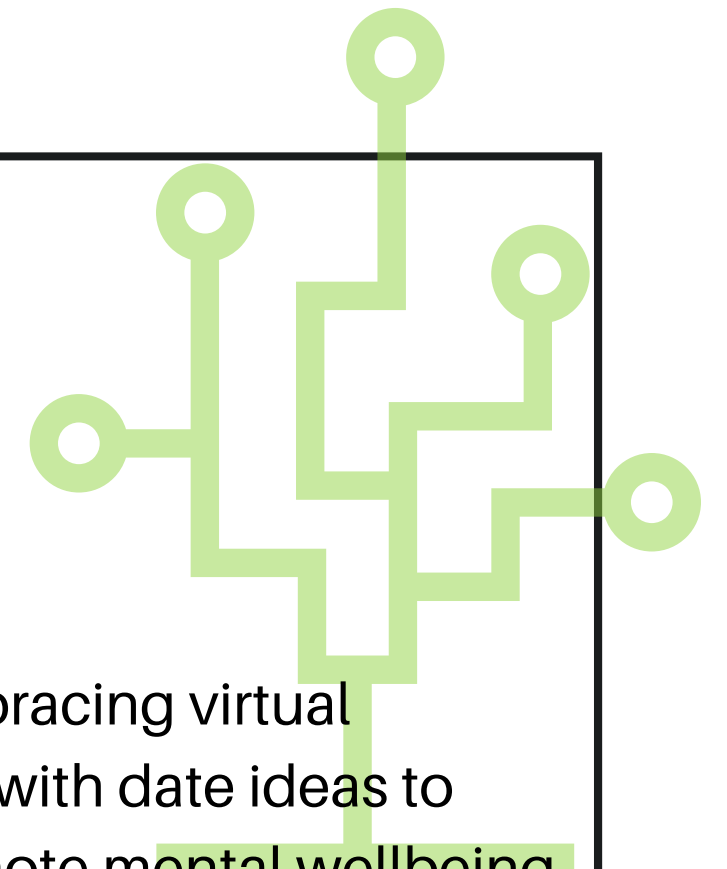
4,437
data points on relative search value over time from 17 key terms

917
data points on related queries

239,337
data points from iterating RSV data collection over new related query terms data set

Big Data & Psychological Relevance

- Psychologists recommended embracing virtual connections and getting creative with date ideas to avoid social deprivation and promote mental wellbeing during lockdown
- Internet search trends may reveal information about how individuals changed their attitudes and behavior in regards to seeking romantic connections in the wake of the global pandemic
- Harnessing big data tools, this research uses related queries to exponentially expand the size of its data set
- avoids small data limitations such as location constraints, time constraints, and budget constraints by using the gtrendsR tool that collects RSV data with high temporal sampling, high spatial resolution, and timely reporting of data



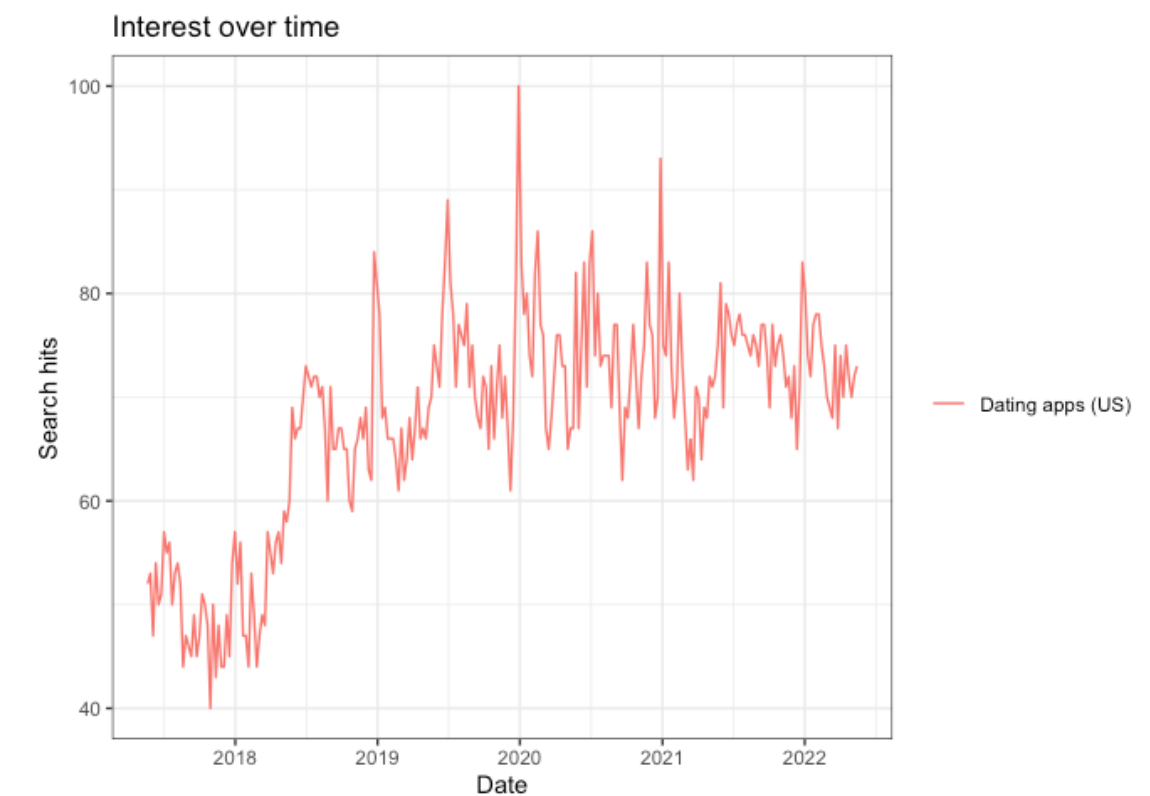
Statistical Approach

Regression Summary Table

| | <i>Online dating</i> | <i>love</i> | <i>dating apps</i> | <i>Bumble</i> | <i>Hinge</i> | <i>Date from home</i> | <i>sex</i> | <i>hugging</i> | <i>kissing</i> | <i>hookups</i> |
|--------------------------------|-----------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|-----------------------|----------------------|----------------------|-----------------------|
| Pandemic | -3.578** (1.401) | 2.081 (1.281) | 14.881*** (1.694) | 7.44*** (0.7441) | 8.644*** (1.453) | 0.537 (1.241) | -3.863*** (1.033) | -0.278 (2.099) | 8.833*** (2.995) | 20.011*** (1.955) |
| 2020 - 2019 | -18.867*** (1.992) | -4.933*** (1.247) | 25.467*** (1.649) | 1.100 (0.724) | 21.100*** (1.414) | 6.067*** (1.208) | -10.000*** (1.005) | 3.633* (2.043) | -0.267 (2.915) | -2.067 (1.903) |
| March 11 - September 11 | 5.734*** (1.992) | -2.805 (1.820) | -14.051*** (2.407) | -5.213*** (1.058) | 2.609 (2.065) | -4.770*** (1.765) | 1.835 (1.468) | 1.157 (2.984) | 0.421 (4.257) | -15.211*** (2.779) |
| No Pandemic | 84.133*** (0.965) | 78.733*** (0.881) | 47.933*** (1.166) | 27.633*** (0.512) | 48.800*** (1.0) | 1.167 (0.854) | 83.567*** (0.711) | 21.833*** (1.445) | 12.167*** (2.061) | 66.767*** (1.346) |

| | <i>kissing</i> | <i>hookups</i> | <i>relationshi p</i> | <i>video dating</i> | <i>intimacy</i> | <i>romance</i> | <i>match</i> | <i>date ideas</i> | <i>outdoor dates</i> | Combined |
|--------------------------------|----------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|--------------------|-------------------------|----------------------|-----------------------|
| Pandemic | 8.833*** (2.995) | 20.011*** (1.955) | -5.211** (2.15) | 0.430 (2.892) | -1.678 (1.673) | -1.600 (2.243) | 2.363 (1.921) | -3.33 (2.81) (2.221) | 8.563*** (3.656) | 54.244*** (11.864) |
| 2020 - 2019 | -0.267 (2.915) | -2.067 (1.903) | -1.10 (2.093) | -7.60*** (2.815) | 3.7*** (1.628) | 2.267 (2.183) | -3.667* (1.87) | 4.067 (2.221) | -4.00 (3.559) | 14.900 (11.548) |
| March 11 - September 11 | 0.421 (4.257) | -15.211*** (2.779) | 3.865 (3.057) | 16.855*** (4.111) | 1.411 (2.378) | 8.682*** (3.188) | -3.412 (2.730) | -12.490*** (3.243) | 5.845 (5.197) | -9.537 (16.864) |
| No Pandemic | 12.167*** (2.061) | 66.767*** (1.346) | 75.10*** (1.480) | 55.200*** (1.990) | 69.547*** (1.152) | 44.267*** (1.544) | 49.6*** (1.322) | 63.333*** (1.570) | 37.4*** (2.516) | 867.200*** (8.166) |

| Year Groups | Months Groups | |
|-------------------------|-------------------------------------|---|
| | August 11 - March 10 ("Control") | March 11 - September 10 ("Treatment") |
| No pandemic (2017-2018) | A | B |
| Pandemic (2019 - 2020) | C | Effect of pandemic on search rates (causal interpretation very limited) |



Findings

Significant Increase in RSV

- "Dating apps"
- "Bumble"
- "Hinge"
- "Kissing"
- "Hookups"
- "Outdoor dates"

No Significant Change in RSV

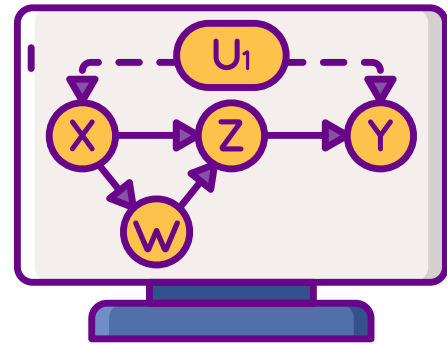
- "Love"
- "Hugging"
- "Date from home"
- "Romance"
- "Video dating"
- "Match"
- "Date ideas"
- "Intimacy"

Significant decrease in RSV

- "Sex"
- "Online dating"
- "Relationship"

Findings suggest that while individuals have begun to embrace forming new relationships online through dating apps, virtual connection likely does not satiate the human need for emotional and physical connection, as individuals continue to seek in person romantic contact.

Future Directions

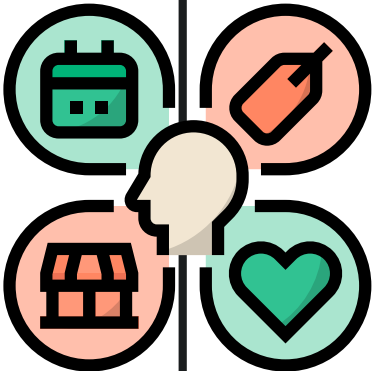


Causality Research

further research should be done to investigate causal relationship

Behavior Research

further research should explore the link between search behavior and real behavior



SBDA & Mental Health

further research should explore how swipe-based dating apps impact individual's mental health



Thank you!

Questions?

Github repository:
<https://github.com/georgiannajames/Google-Trends-Romantic-Connection-During-Pandemic>