Stimulants

- Stimulants: treatment for attention-deficit/hyperactivity disorder (ADHD), narcolepsy (ADHD; Julien, 1998)
- Increase alertness and attention by altering chemical levels in the body
- Dramatic rise in prescriptions and use with introduction of new stimulants
  - Adderall (1996)
  - Concerta (2000)
  - Dexedrine (1937)
  - Vyvanse (2007)
  - Evekeo (2014)
- Stimulant use disorder can occur (Gould et al., 2009; National Institute on Drug Abuse, 2018)

Stimulant Use Among Adolescents and Young Adults

- High school and college students use stimulants not prescribed to them or prescribed to others to improve academic and social performance (Dussault & Weyandt, 2013)
- Monitoring the Future Study: 5% of 8th, 10th, 12th graders use amphetamines other than as prescribed (Johnston et al., 2017)
- Young adults search online for information about stimulants, and may be purchasing stimulants online without a prescription (Schepis, Marlowe, & Forman, 2008)
- How can we track stimulant use beyond surveys, which can be infrequent and expensive?

Research Questions

- We mine Google search queries to determine
  - What is the relative interest in different stimulants?
  - How has interest changed over time?
  - How does information seeking vary by season?
- Primary finding:
  - Adderall most searched, notable 2010 increase
  - Searches for stimulants spike annually around the end of school semesters.

Data and Methods

- Tracked seven popular stimulants
- Google Trends (trends.google.com)
  - Aggregated search queries over time
  - Data accessed through trends Application Programming Interface (API)
  - Cannot limit population beyond geography
- Example:

Results

- Search Rates by Year (Long-term Trend)
  - Adderall most searched each year (same as in Monitoring the Future Study, but it did not track as many stimulants as our study)
  - Ritalin second most searched 2004-2009, eclipsed by Vyvanse in 2010
  - Remaining order: Concerta, Focalin, Dexedrine, and Evekeo

Google Searches for Stimulants (by Year) Sorted by Prevalence in 2018

- Search Rates by Week (Seasonal Trend)
  - Spikes in seasonal trends come at the end of academic semesters

References


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