Characterizing Awareness of Schizophrenia Among Facebook Users
By Leveraging Facebook Advertisement Estimates

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BACKGROUND

- Schizophrenia:
  - Affects 1% of the world’s population
  - 2% of the U.S. healthcare expenditure

- Major impediment to Healthcare: Lack of Public Awareness

- Assessing awareness: Limited in scale & robustness in terms of temporal & demographic granularity
OBJECTIVES

• Construct a Schizophrenia Awareness Index (SAI)
• Understand how:
  • SAI varies across demographic groups
  • SAI correlates with offline variables about population well-being
Targeted and Custom audience.

<table>
<thead>
<tr>
<th>Target Interests</th>
<th>Psychosis, Schizophrenia Awareness, Schizoaffective Disorder, Paranoid Schizophrenia, and Hallucination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male and Female</td>
</tr>
<tr>
<td>State</td>
<td>50 states of U.S.</td>
</tr>
<tr>
<td>Age Groups</td>
<td>13-17, 18-24, 25-44, 45-64, 65+</td>
</tr>
<tr>
<td>Education Levels</td>
<td>&lt;HS, &lt;BA, &lt;MA, MA/PhD</td>
</tr>
<tr>
<td>Ethnic Affinities</td>
<td>African American, Asian American, Hispanic, Others</td>
</tr>
</tbody>
</table>
DATA: OFFLINE

• For each state:
  • Population Estimates (Source: United States Census Bureau)
  • # Mental Health Institutions (Source: Substance Abuse and Mental Health Services Administration (SAMHSA))
  • American Human Development Index (HDI*) (Source: Measure of America, Social Science Research Council)
  • # Mental Health Issues (Source: Henry J. Kaiser Family Foundation Health Database)

* HDI is a composite index of life expectancy, education and per capita income indicators. Intuitively, the HDI quantitatively summarizes the three dimensions of (i) health and well-being, (ii) knowledge and (iii) standard of living
METHODS

**Schizophrenia Awareness Index (SAI)** = \[ \frac{n_s(d)}{n(d)} \times 100 \]

- \( n_s(d) \): # FB users with demographic attributes d and interested in Schizophrenia
- \( n(d) \): Total # of FB users with the same demographic attributes d

Linear regression models to fit SAI for given demographic groups
Mean SAI across states = 1.11
TO SUM UP

- Assessing differences between fine-grained demographic groups and geographical locations
- Passively collected data for monitoring awareness of stigmatized health conditions
- SAI Tool: koustuv.com/computeSAI.html
Select a combination of attributes to compute the Schizophrenia Awareness Index (SAI) for a given group.

- Gender: All, Male, Female
- Age Groups: All, 25-44, 45-64, 65+
- Education: All, Not (yet) High School, Have Master's/PhD Degree, Not (yet) Bachelor's Degree
- Ethnic Affinity: All, Hispanic, African American, Asian American

This tool uses data collected from Facebook’s marketing API to compute the fraction of monthly active Facebook users in the US who have at least one interest related to schizophrenia (“Psychosis”, “Schizophrenia Awareness”, “Hallucination”, “Schizophrenic Disorder” or “Paranoid Schizophrenia”). Across all 194M users, 1.1% have at least one such interest.
QUESTIONs?

THANK YOU

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