PHENOTYPES OF STIGMA EXPRESSED BY PEOPLE WHO USE DRUGS ON REDDIT

***Layla Bouzoubaa**, Elham Aghakhani, Shadi Rezapour*
Department of Information Science, Drexel University, Philadelphia, PA

MOTIVATION

The Hidden Population Problem

- 95% of people with substance use disorders receive no treatment
- Stigma is a major barrier to seeking help
- Traditional research misses those outside of clinical settings

Why Reddit?

- Pseudonymous platform enables disclosure of stigmatized experiences
- 1M+ posts from 6 drug-related subreddits (2008-2022)
- Captures naturally occurring discourse from the "hidden population"

***Research Gap**: Prior work focuses on narrow substance types, limited time periods, or specific stigma dimensions. We need comprehensive characterization across substances and stigma types using naturalistic user data.*

DATA

Dataset: 1,033,619 poss from 6 subreddits

- r/Drugs, r/opiates, r/kratom, r/LSD, r/Stims, r/benzodiazepines
- 56,446 stigma-containing posts (5.5%) identified; 37,406 unique users

Novel Classification Framework

- 4 established stigma types: internalized, enacted, structural, anticipated +
- New **"Stigma Perceptions & Commentary"** (SPC) category
- SPC captures meta-discourse about stigma beyond personal experiences

Subreddit	# Subscribers	# Processed Posts	# Stigma Posts
r/Drugs	1.1M	410,573	23,990
r/LSD	777k	236,740	2,335
r/opiates	239K	169,444	19,145
r/kratom	175k	87,744	4,420
r/benzodiazepines	167k	72,549	3,029
r/Stims	162k	56,569	3,527

METHODS

1. LLM-assisted classification (Figure 1.a)
   a. 5 stigma types + "No Stigma" with GPT-4o with human validation (F1 = .91)
2. Multidimensional annotation of 17 features (Figure 1.b)
   a. Narrativity: agency, event sequencing, world-making
   b. Stigma Experience: power dynamics, anticipation, stereotypes, sources
   c. Response & Coping: community engagement, resilience, coping mechanisms
   d. Psychological Impact: disengagement, self-esteem, loneliness, alienation
3. Unsupervised clustering
   a. K-means with k= 3 identified
   b. Post-hoc analysis per cluster with LIWC psycholinguistics, LDA topic modeling

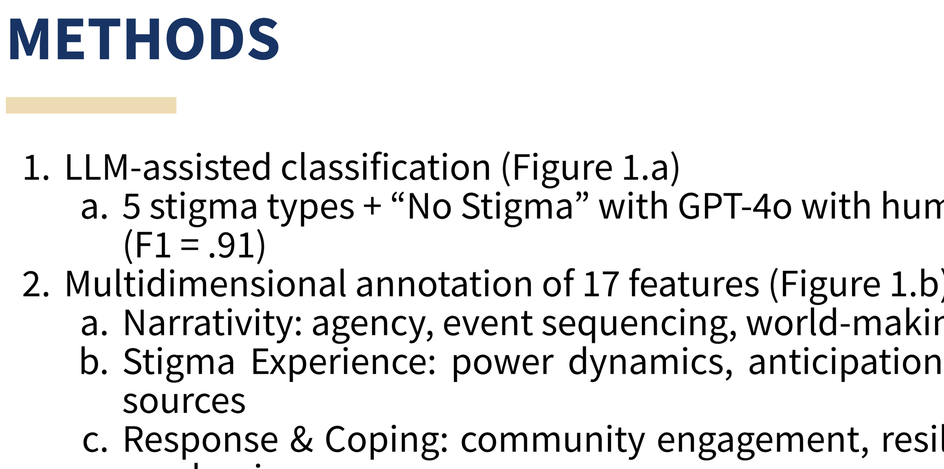
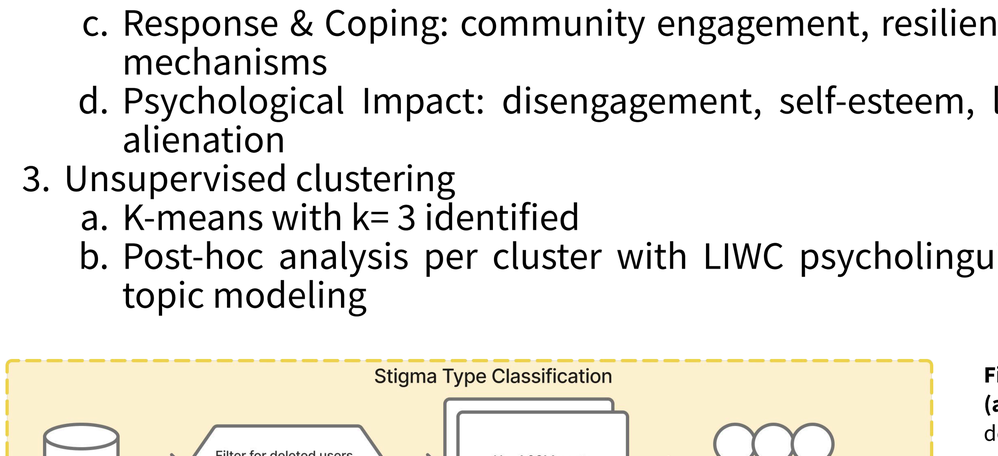


Figure 1.
(a) Overview of development of SPC and analysis dataset



(b) Overview of feature classification pipeline.

FINDINGS

Stigma Type Distribution:

- Internalized: 36%
- SPC: 25.3% (newly identified)
- Anticipated: 21.3%
- Enacted: 13.8%
- Structural: 3.5%

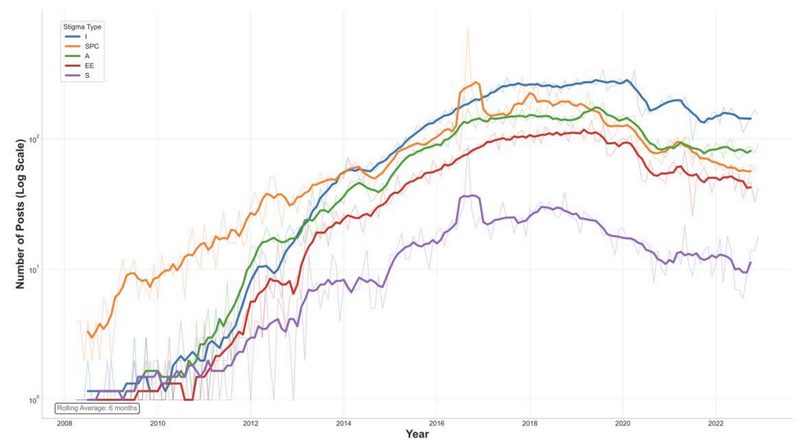


Figure 2. Temporal distribution of stigma types in substance use-related subreddits (2008-2022)

Three Distinct Stigma Phenotypes

1. Internalized: 34.5%
   a. Highest narrative agency, self-esteem impact, loneliness
   b. Dominated by self-blame and moral character stereotype endorsement
   c. Avoidant coping style (54.2%)
2. Public stigma: 38.9%
   a. High power dynamics recognition
   b. Mentions of treatment barriers (45.5%)
   c. Mixed/active coping mechanisms
   d. Sources: Healthcare (30.8%), general public (21.9%), gov't (18.7%)
3. Righteous Indignation (26.6%)
   a. Lowest on experiential dimensions
   b. Highest analytical language
   c. Active coping, challenges stigma structures
   d. Source: general public (33.1%)

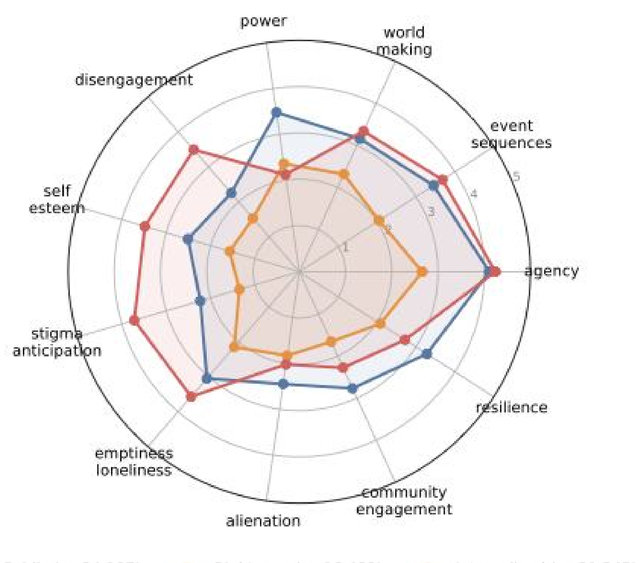


Figure 3. Radar plot displaying standardized scores for eleven continuous dimensions capturing narrative agency, psychological states, and social engagement patterns.

Intersectional Patterns (9.3% all posts)

- Internalized: health/disability (37%)
- Righteous: race or ethnicity (35%)
- Public: health/disability (31%)

Treatment Barriers Vary by Phenotype (27% all posts)

- internalized: access/availability, cost
- Righteous: regulatory/policy, access
- Public: regulatory/policy, stigma/discrimination

CONCLUSIONS

Key Contributions:

1. Novel SPC category extends stigma taxonomy
2. Three phenotypes align with theoretical models
3. Validates social media as window into "hidden population"
4. Demonstrates LLM utility for large-scale stigma research

Theoretical Alignment:

- Internalized phenotype → Corrigan and Rao (2012) "self stigma harm stage"
- Righteous phenotype → "Paradox of self-stigma" (Corrigan and Rao, 2012)
- Public phenotype → Link & Phelan's (2001) enacted/felt stigma

Future Directions:

- Examine intersectional experiences by identity
- Track phenotype evolutions evolution longitudinally
- Analyze community response patterns in threads

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