

A Cross-Modal Study of Pain Across Communities in the United States



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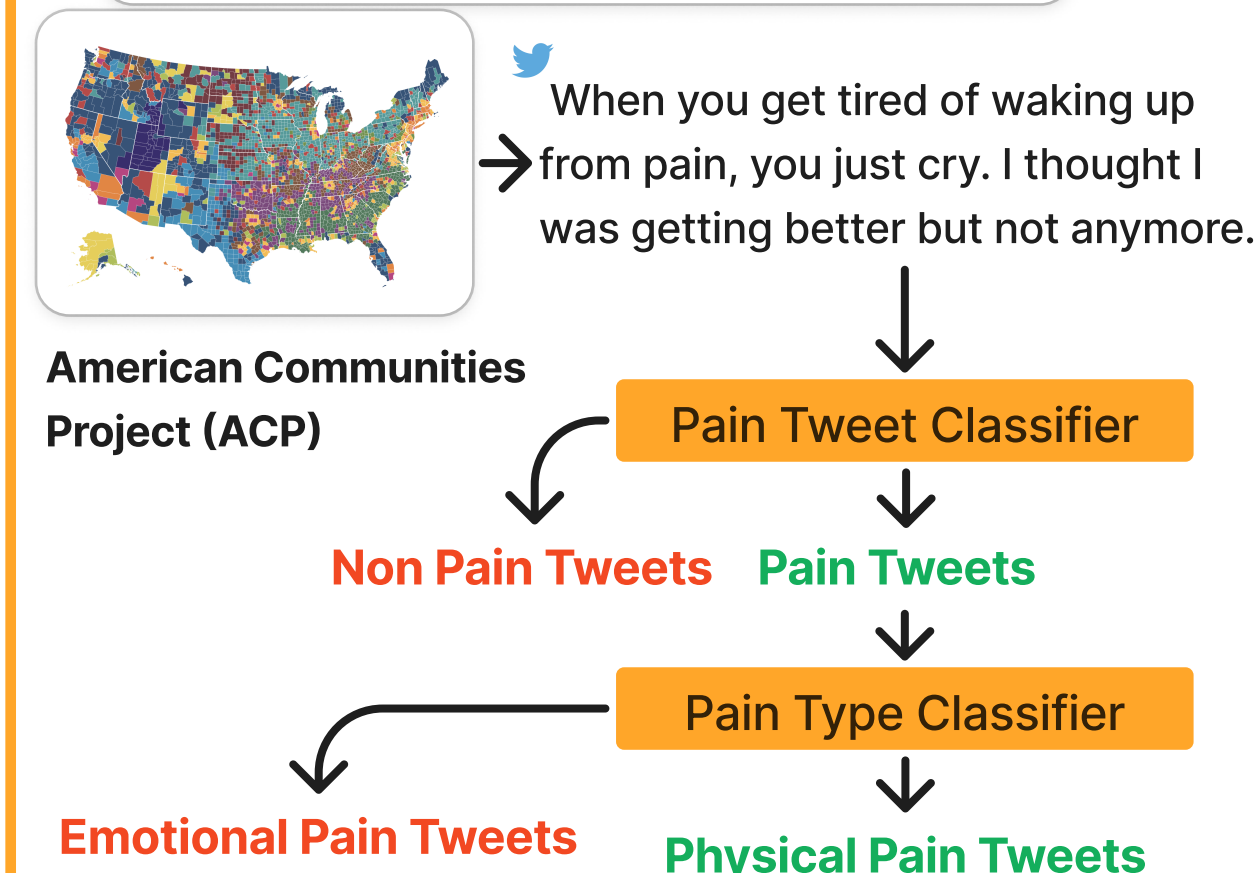
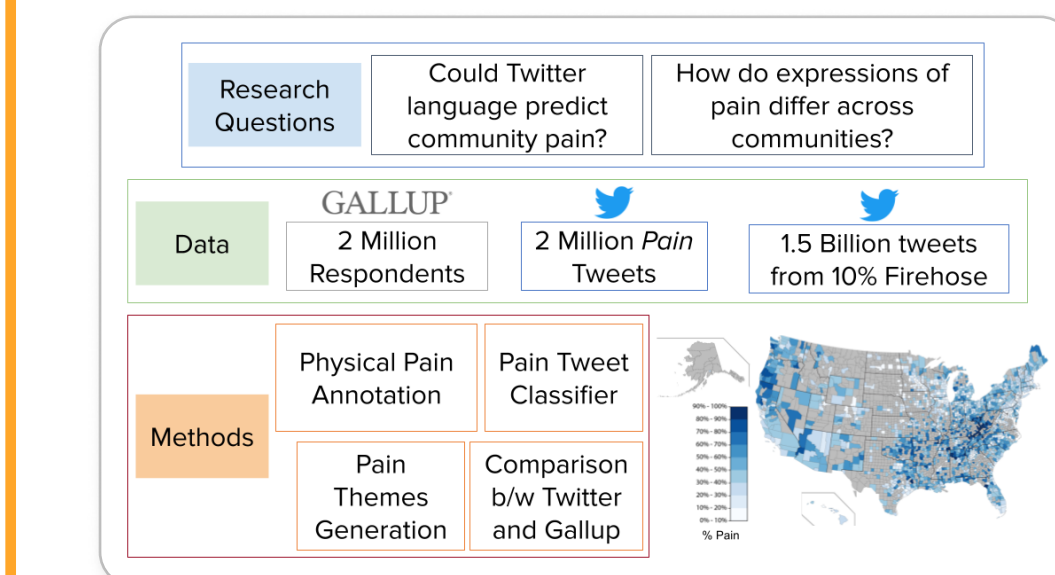
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Problem Statement

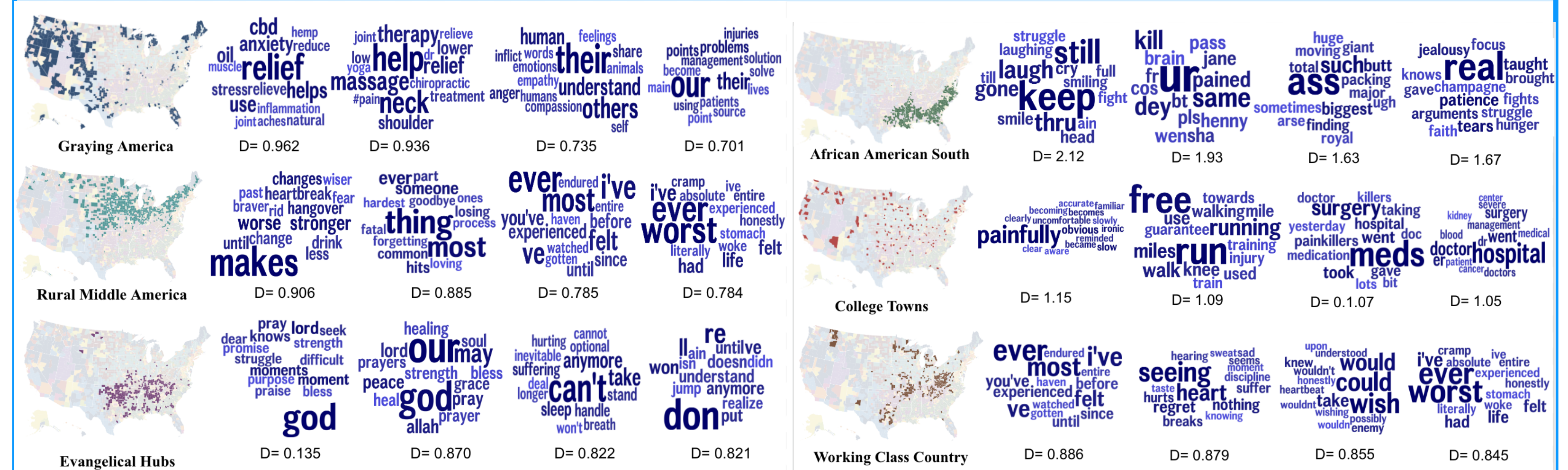
- **1 in 5 adults** in America experience chronic pain. **Can social media be used to forecast community pain?**
- High **subjectivity** in pain expressions
- Healthcare providers' **Bias and skepticism** on physical pain vs psychological pain[1]

Approach



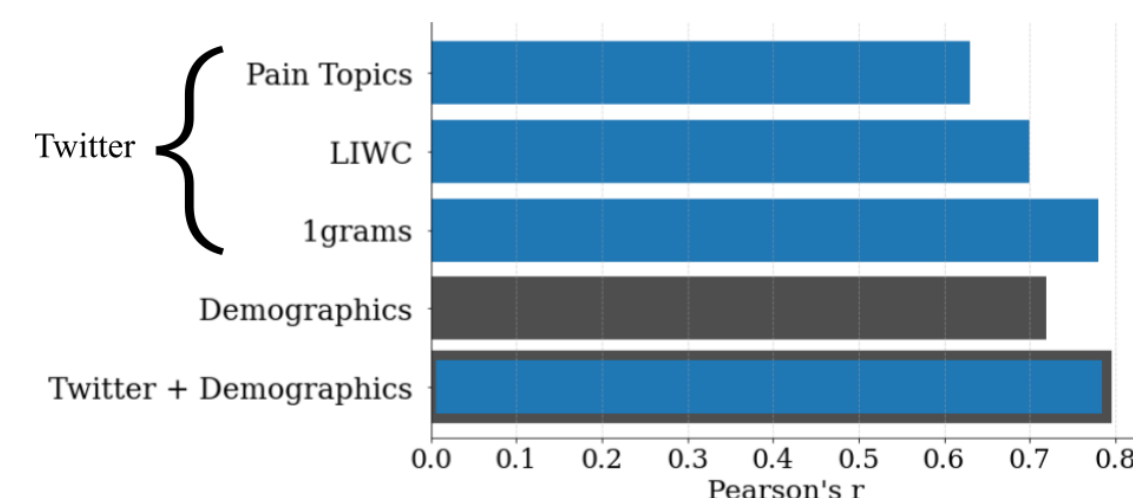
Results

How do expressions of physical pain differ across communities in ACP?



Top 4 pain topics positively correlated with each ACP. Effect sizes reported are Cohen's D (i.e., normalized mean differences) and 95% confidence intervals. Topics are significant at $p < 0.01$ after Benjimini-Hochberg correction.

Can Twitter Language predict Community Physical Pain?

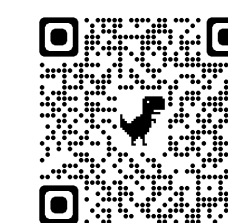


Prediction performance reported as Pearson r in estimating physical pain using different features. Twitter alone outperforms Demographics at $p < 0.001$.

Conclusion

Self-disclosures on social media are a promising source to understand experiences of pain and enable inclusive precision pain management.

[1] <https://www.healthline.com/health-news/america-is-losing-the-war-on-chronic-pain#The-drivers-behind-the-opioid-epidemic>



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