



Investigating the Impact of Self-Help Groups on Treatment Completion for Adolescents

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Abstract

Motivation: The Opioid epidemic remains a pressing healthcare crisis in the USA, with a staggering number of overdose-related deaths -over 90%-involving opioids

Objectives: Study the effectiveness of participation in self-help groups for Opioid Use Disorder (OUD) treatment completion in adolescents

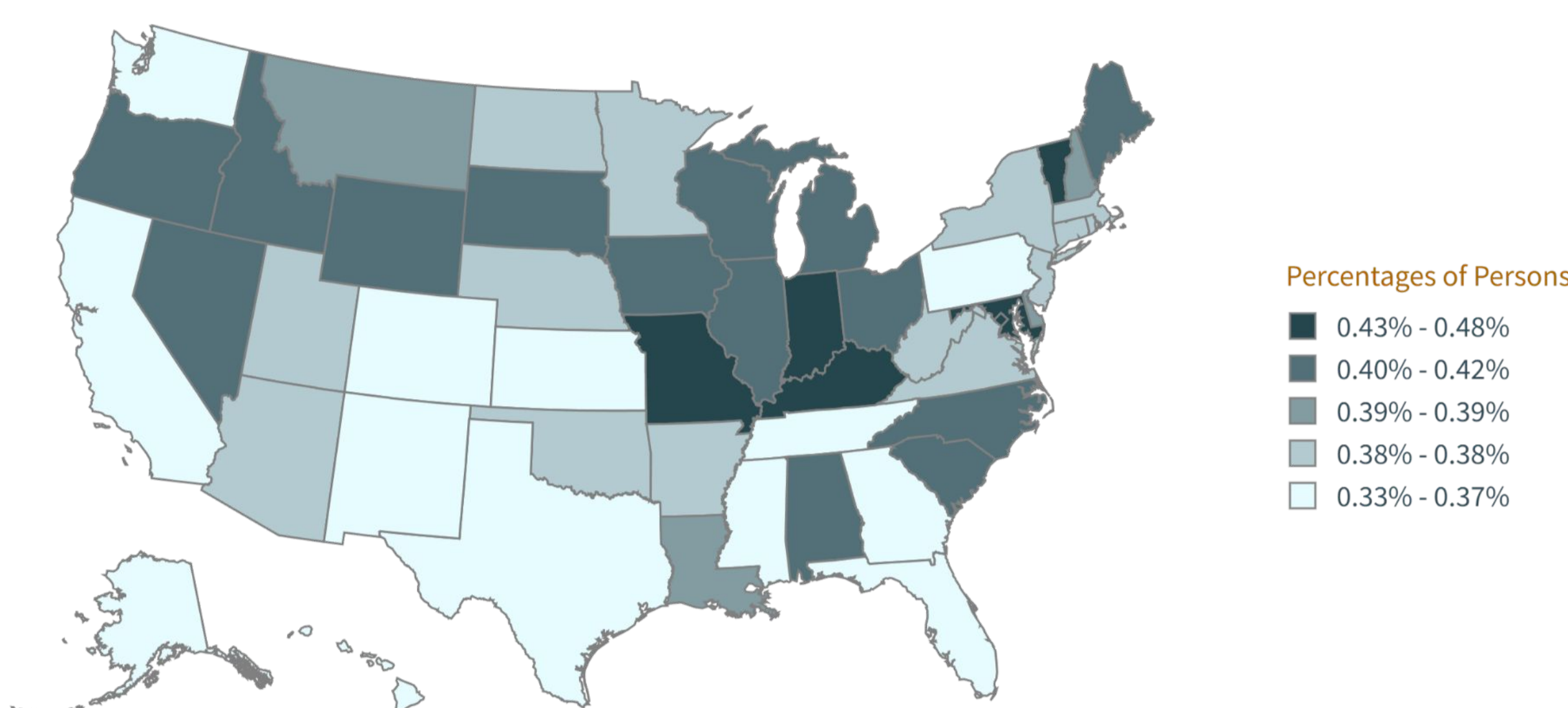
Results: Participation in self-help groups has a positive causal relation with treatment completion

Background

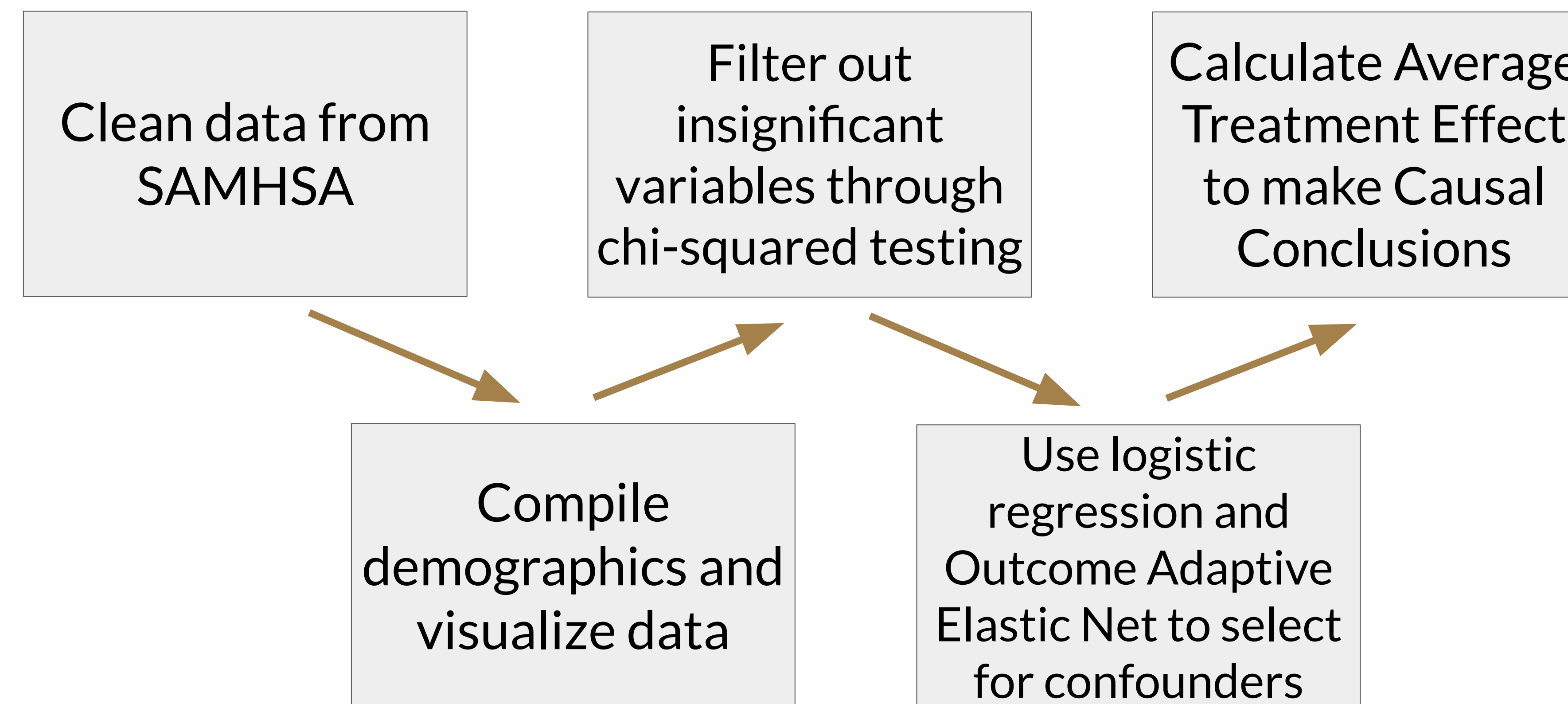
Opioid Use Disorder (OUD) in America

- The prevalence of the opioid epidemic has been rising in the USA since 1999 for all ages
- Deaths from overdose increased 94% from 2019-20 in 14-18-year-olds
- A high percentage of Adolescents use Opioids countrywide as shown below

Pain Reliever Use Disorder in the Past Year among Youths Aged 12 to 17, by State: 2018-2019



Workflow Chart



Conclusion and Future Steps

- Our study provides valuable insights for policymakers to take necessary action to promote the utilization of self-help groups for OUD patients
- Future research can focus on the effectiveness of the involvement of medication and self-help groups in holistic treatment plans

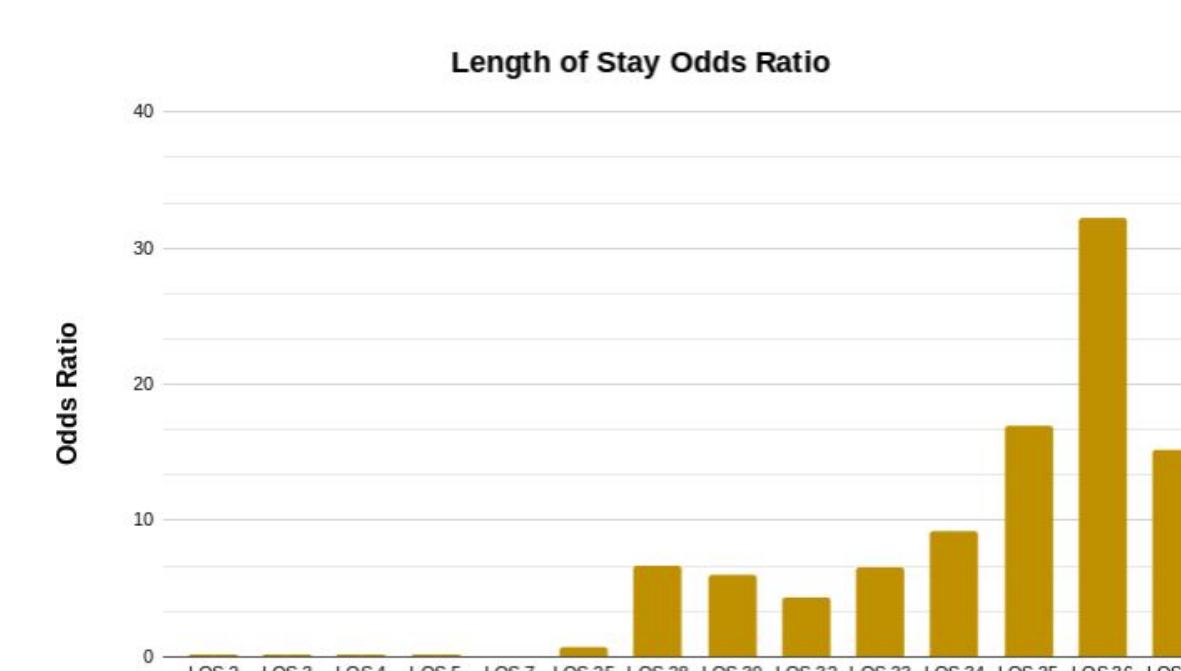
Results

Chi-Squared Testing:

- Found 16 statistically significant variables from the original 55
- Significant variables included: *education, services, LOS, Living arrangement, and region*

Logistic Regression:

- Calculate the odds ratio (OR) for the variables
- Notable variables were Division 15 with an OR of 15.618 and Heroin with an OR of .17



Outcome Adaptive Elastic Net (OAENET):

- Identified confounding variables for self-help group participation and treatment completion
- Confounders: Education and Services
- Average treatment effect on Treated (ATT) = 0.135

Overall Findings:

- The result suggests that involvement in self-help groups can lead to a considerable 13.5% improvement in treatment completion rates

References

- Borodovsky, J. T., Levy, S., Fishman, M., & Marsch, L. A. (2018). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5970018/#R119>
- SAMHSA. (2019). TEDS-D-2019-DS0001 (TEDS-D-2017-DS0001) | SAMHDA. Substance Abuse and Mental Health Services Administration. <https://www.datafiles.samhsa.gov/dataset/teds-d-2017-ds0001-teds-d-2017-ds0001>

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