

# Multi-level effects of environment and neighborhood factors on sober living house resident 12-month outcomes

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## BACKGROUND

- Sober living houses (SLHs) are abstinence-based residences designed for individuals in recovery to live with others in recovery.
- Research shows that SLHs help some individuals maintain recovery, and that certain SLH-related factors may be particularly protective.
- Here we assess how SLH housing and neighborhood characteristics are related to abstinence and psychiatric symptoms over time.

## METHODS

- Baseline, 6-month, and 12-month data collected from 557 SLH residents.
- Participants recruited from 48 SLHs located in 44 neighborhoods in Los Angeles County, California. SLH selection purposively maximized diversity of SES in neighborhoods in which SLHs are located.
- Multilevel mixed models tested associations between house and neighborhood characteristics and individual-level percent days abstinent (PDA) and the number of psychiatric symptoms (measured with the Psychiatric Diagnostic Screening Questionnaire, PDSQ) as outcomes.
- Final models adjusted for sex, age, and race/ethnicity; ratings of house characteristics; and objective measurements of neighborhood-level exposures.

## RESULTS

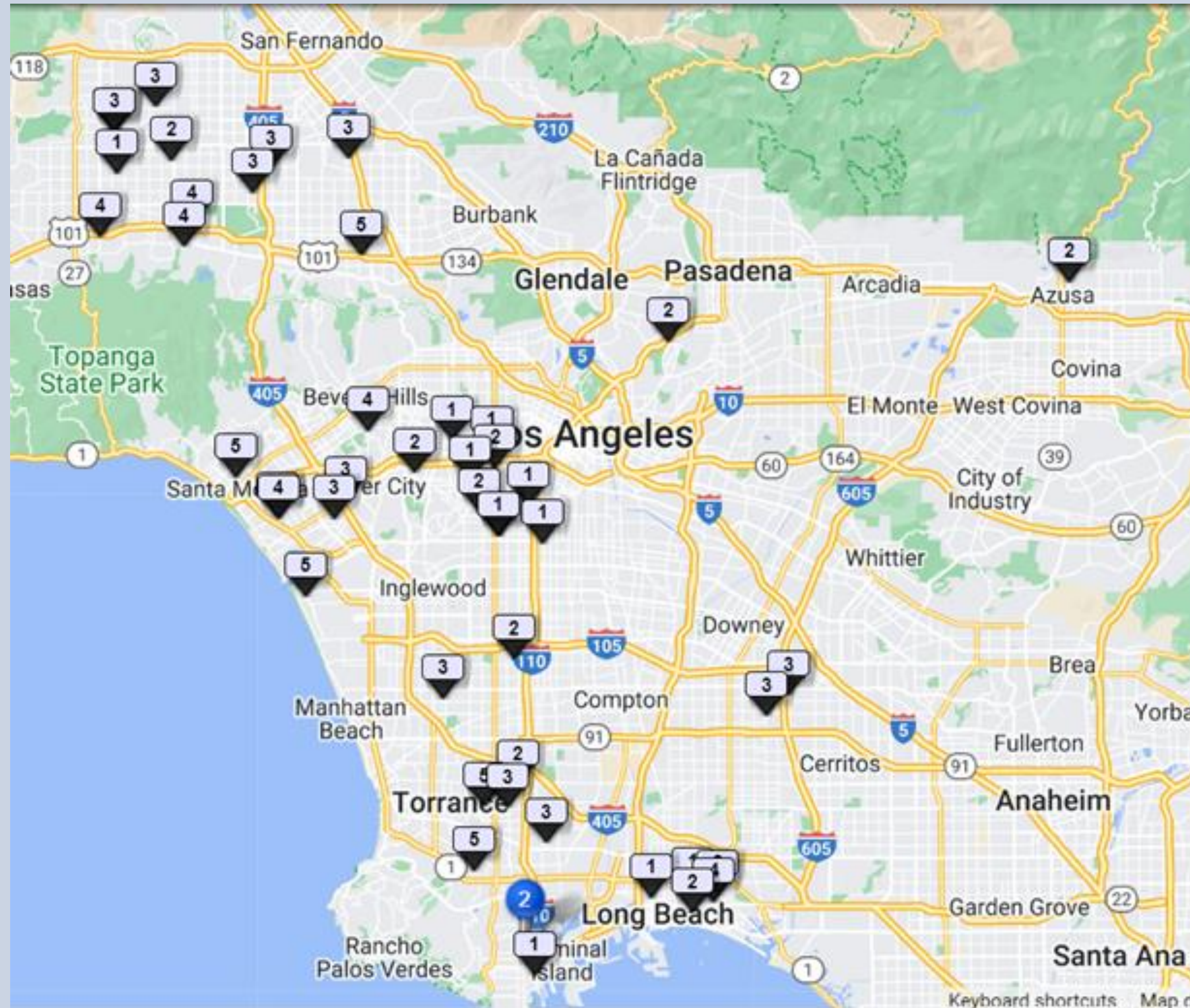
- Both PDA and PDSQ improved significantly ( $P \leq 0.05$ ) over time in both unadjusted and adjusted models.
- More self-help groups and fewer alcohol outlets within one mile were significantly protective for both PDA and PDSQ while walkability was significantly related to worse PDA and PDSQ ( $P \leq 0.05$ ). AA involvement was also associated with receiving help at the SLH.
- For house-level factors, better ratings of house maintenance and spatial layouts that facilitated social interaction were related to significantly fewer psychiatric symptoms, whereas higher scores on SLH's safety measures and personal or residence identity were related to more psychiatric symptoms ( $P \leq 0.05$ ).
- No house-level architectural or environmental factor was significantly related to PDA.

## CONCLUSIONS

- Neighborhood-level factors like increased availability of self-help groups and fewer nearby alcohol outlets may be particularly protective for individuals living in SLHs.
- House-level factors related to better maintenance and social support may also facilitate improved mental health.



Map of Sober Living Houses with SES quintiles, sampled from Los Angeles, CA in 2018 (N=48)



1 = Lowest SES neighborhoods; 5 = Highest SES neighborhoods.  
SES determined from US Census Bureau's American Community Surveys

Longitudinal mixed effect models predicting Percent Days Abstinent (PDA) and Psychiatric Diagnostic Screening Test (PDSQ) scores from neighborhood- and house-level exposures included simultaneously, adjusted for individual-level demographics (N = 557)

| Exposure variables  | Model 1: PDA<br>B (95% CI)  | Model 2: PDSQ<br>B (95% CI) |
|---|-----------------------------|-----------------------------|
| <i>Interview</i>  |                             |                             |
| Six months (vs. baseline)   | <b>16.29 (10.66, 21.92)</b> | <b>-.69 (-.81, -.57)</b>    |
| Twelve months (vs. baseline)                                      | <b>12.31 (6.69, 17.93)</b>  | <b>-.93 (-1.05, -.81)</b>   |
| <i>Interviewer ratings of house architectural characteristics</i> |                             |                             |
| RHAS House maintenance  | --                          | <b>-.068 (-.11, -.024)</b>  |
| RHAS Safety and security  | --                          | <b>.039 (.00056, .078)</b>  |
| RHAS Sociability  | --                          | <b>-.17 (-.27, -.064)</b>   |
| RHAS Personal and residence identity                              | --                          | <b>.22 (.17, .27)</b>       |
| RHAS Furnishings  | --                          | .021 (-.046, .089)          |
| RHAS Outdoor areas  | -0.40 (-0.82, 0.012)        | --                          |
| <i>Objective measurements of neighborhood-level conditions</i>    |                             |                             |
| Walk Score  | <b>-.11 (-.21, -.0052)</b>  | <b>.021 (.015, .028)</b>    |
| Bike Score  | <b>-.27 (-.43, -.12)</b>    | .0044 (-.0030, .012)        |
| Transit Score   | --                          | .0034 (-.015, .0079)        |
| Inpatient treatment for substance abuse within 10 miles           | --                          | -.018 (-.059, .095)         |
| Outpatient treatment for substance abuse within 10 miles          | --                          | --                          |
| Inpatient treatment for mental health within 10 miles             | 1.20 (-1.40, 3.80)          | <b>.17 (.014, .32)</b>      |
| Outpatient treatment for mental health within 10 miles            | -.39 (-.96, .18)            | -.018 (-.051, .019)         |
| Self-help groups within one mile                                  | <b>2.57 (1.76, 3.38)</b>    | <b>-.22 (-.27, -.17)</b>    |
| Alcohol outlet density within one mile                            | <b>-.22 (-.36, -.084)</b>   | <b>.015 (.0056, .025)</b>   |

Final models simultaneously include exposure variables that show  $P \leq .05$  in separate models. All models adjust for sex, age, and race/ethnicity with robust standard errors and random effects for census tract and participant ID.

\*-- signifies covariate was  $P > .05$  in separate exposure variable models and therefore not included in these models. Bold signifies  $P \leq .05$



**Residents of Sober Living Houses that are better maintained and facilitate social support have better psychiatric outcomes.**