

Novel Sampling Designs and Activity-Space Data Collection Strategies for AHDCII

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5th Mobile Apps and Sensors in Surveys (MASS) Workshop
Washington, DC

March 6-7, 2024

ADOLESCENT HEALTH AND DEVELOPMENT IN CONTEXT II

- ▶ Data collection to start in fall 2024, ten years after AHDCI
- ▶ Focus is on the estimating the effect of **exposure to activity-space adversity (ASA)** – area level violence, policing, and racial exclusivity – on perceptions of **physical and psychological safety, physiological stress and stress reactivity, and mental and behavioral health**
- ▶ Explore the moderating influence of **Black “other-perceived” race (OPR)** – degree to which an individual believes others perceive their race to be Black in public interactions – on effects of ASA exposures

WHAT'S CHANGED OVER THE LAST 10 YEARS?

▶ Our population

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→ concerns about **data privacy** are greater

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▶ Research funds do not go as far as they used to

→ primary data collection is **more expensive**

WHAT HASN'T CHANGED OVER THE LAST 10 YEARS?

- ▶ We still care about **population-level inference and informed consent**
- ▶ NIH cap on R01 direct costs

IMPLICATIONS FOR AHDCII

1. We **can't replicate** the AHDCI design
2. We **don't want to replicate** the AHDCI design
3. But we **do want to make comparisons**, especially pre-/post-pandemic comparisons

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- ▶ A compromise... **Two-Phase Design**

TWO-PHASE DESIGN

Phase 1: N = 700, 1 at-home visit

Entrance survey

- youth → **lifetime** exposure to adverse events, behavior; mental and physical health; schooling; and family conflict
current mental and physical health; behavior; experiences with **discrimination** and **policing**; perceived **safety**
- caregiver and household data

Location generator

- geo-referenced routine activity locations of different types
- **OPR** at routine activity locations **NEW**
- reports on **social climate** at routine activity locations **ENHANCED**
- **locations avoided** due to social climate **NEW**

Biomeasures

- hair samples for HCC and dried blood spots for CRP

TWO-PHASE DESIGN

Phase 2: **N = 300**, 6 months, 3 additional at-home visits

Geographically-explicit ecological momentary assessment

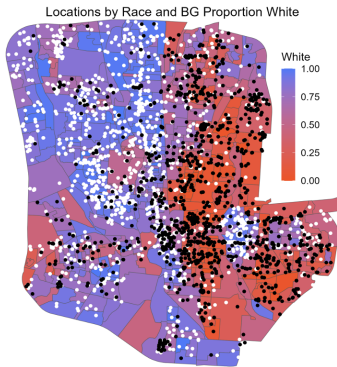
- perceptions of physical and psychological safety
- mental health
- racial exclusivity/inclusivity **NEW**

Biomeasures

- continuous heart rate and heart rate variability using Matrix Industries perceptive band (w/ dermal charging) **NEW**
- hair samples for HCC and dried blood spots for CRP (every three months)

PHASE 1 SAMPLING (N = 700)

- ▶ **Smaller study area** (78 east side census tracts) → diverse area with **greater socioeconomic overlap** across racial identities, yielding more information relevant for estimating racial identity differences in outcomes



(Locations, jittered within census block group, of routine activity locations with discrimination reports in AHDCI)

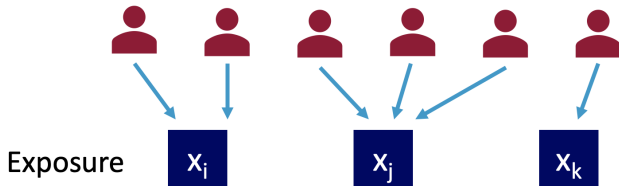
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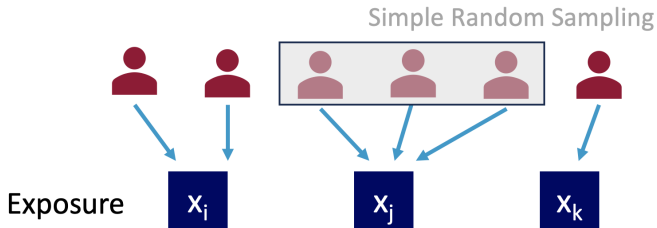
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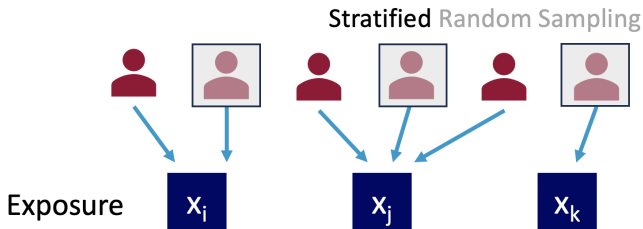
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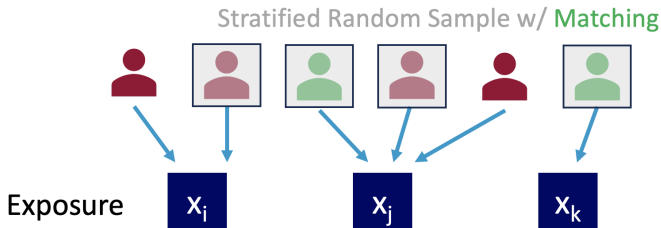
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- **Stratification** on eco-communities and **matching** on observed confounders (but not effect modifiers)

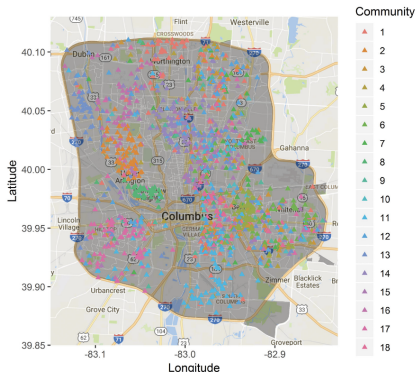
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AHDCI Eco-Communities (see Xi et al., 2020):



(Locations of residence, jittered within census block group, of AHDCI participants)

SUMMARY AND DISCUSSION POINTS

- ▶ Our hope is to **gain statistical efficiency** through stratified sampling on eco-community membership and through matching on observed confounders

$$N(\text{AHDCII-Phase 2}) = 300 \ll N(\text{AHDCI}) = 1405$$

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- ▶ Other challenges:
 - EMA fatigue → **geofencing** and **sensor-driven prompting**
 - Differences in phone carrying behaviors → **perceptive band**
 - Selection effects → ?