

Understanding and Addressing Underlying Determinants of Disparities in Sleep

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CONFLICT OF INTEREST DISCLOSURE

☒ **No**, I (nor my spouse/partner) do not have a relevant financial relationship.

☐ **Yes**, I (and/or my spouse/partner) do have a relevant financial relationship.

Nature of Relevant Financial Relationship (choose all that apply)	Name(s) of Company or Companies
<input type="checkbox"/> Consultant	
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Sleep health disparity

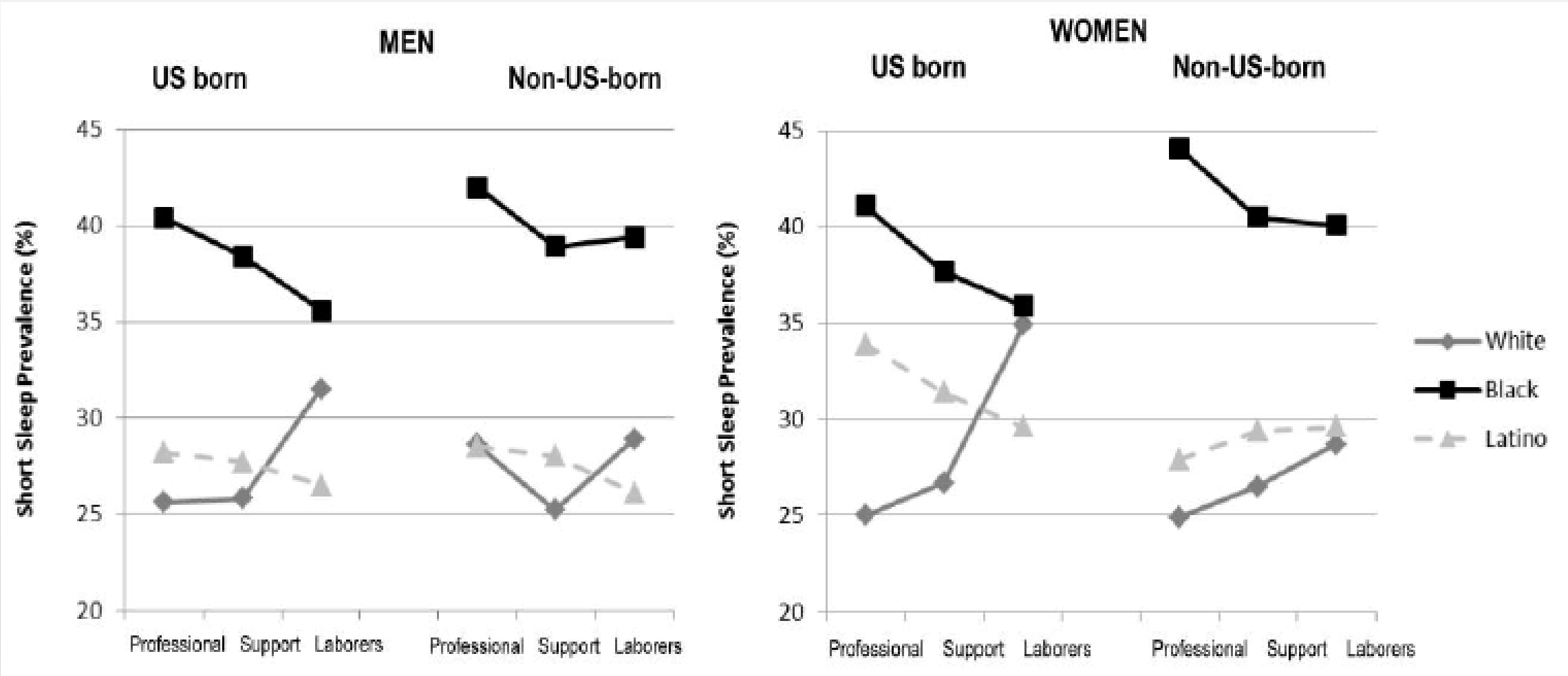
"A difference in one or more dimensions of sleep health (regularity, quality, alertness, timing, efficiency, and duration)—on a consistent basis—that adversely affects designated disadvantaged populations"

Racial-ethnic disparities in sleep

Historically minoritized individuals have a high burden of sleep deficiencies and more severe sleep disorders

Racial minority (reference group: White)	Sleep Duration	Sleep Quality	Sleep Apnea	Insomnia
American Indian and Alaska Native	↓	-----	-----	-----
Asian	↓	↓	↑	
Black	↓	↓	↑	↑ ↓
Hispanic/Latino	↓	↑ ↓	↑	↑
Native Hawaiian and Pacific Islander	↓	-----	↑	-----

Intersection of race and SES on short sleep duration



Social determinants of health

The broad range of non-medical factors (social, economic, psychosocial, behavioral) that directly or indirectly shape health outcomes

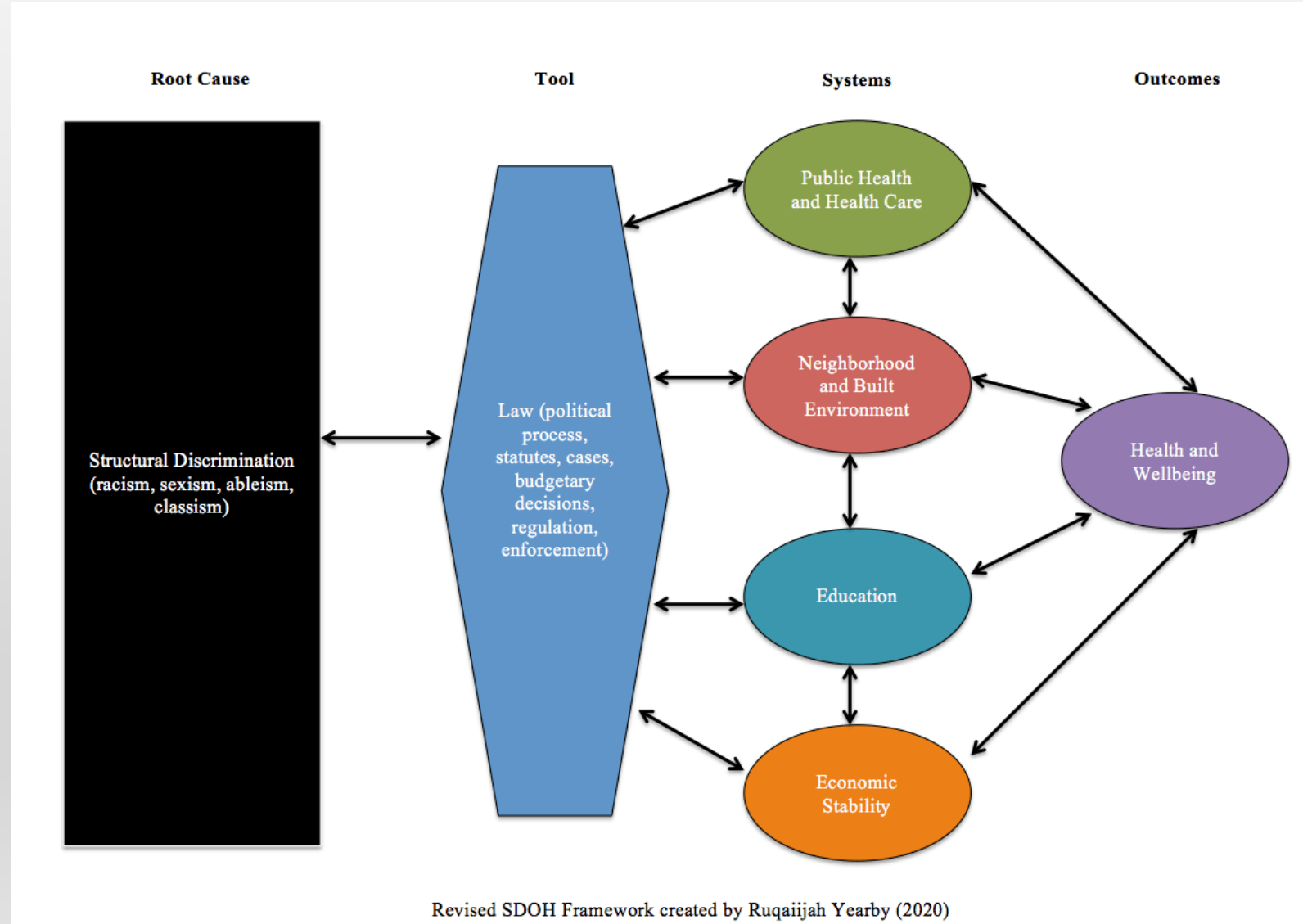


Braveman P, et al. 2011.

Annu. Rev. Public Health. 32:381–98

Structural racism and discrimination

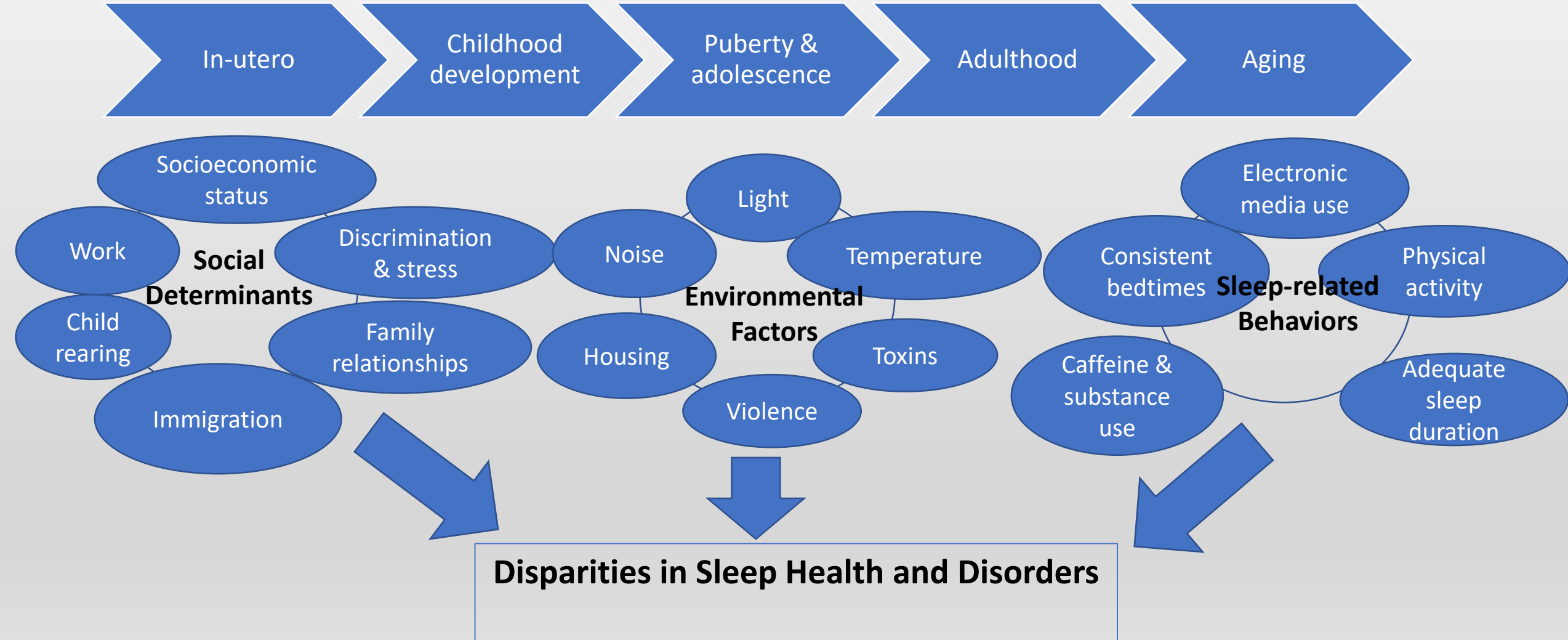
Refers to macro-level conditions (e.g., residential segregation) that limit opportunities, resources, and well-being of less privileged groups



Contextual factors shape sleep health

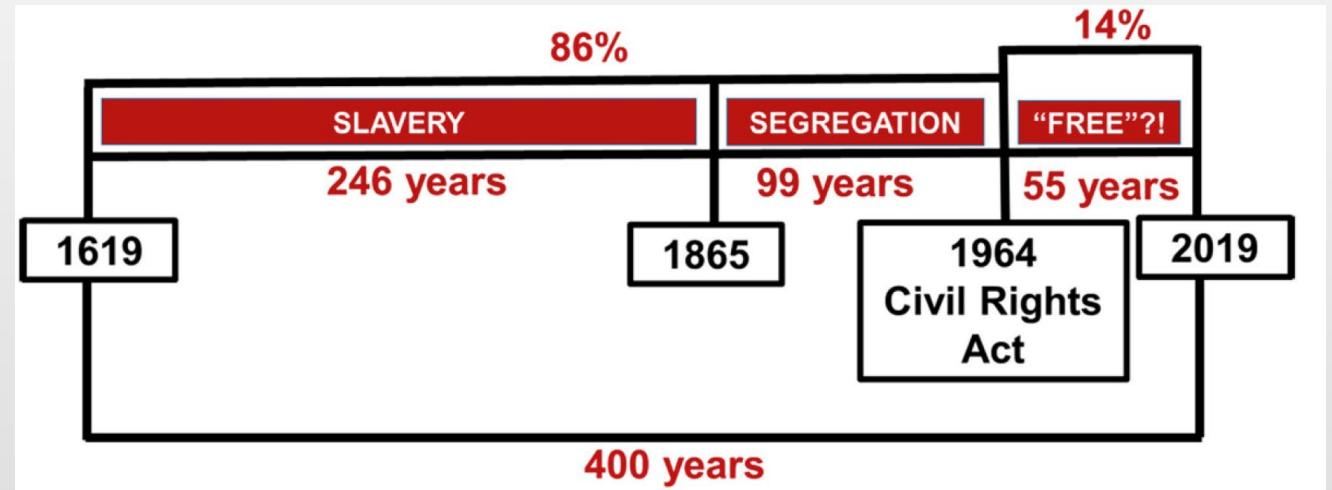


Determinants of Sleep and Circadian Disparities Across the Lifespan are Multifactorial



Salient risk factors for racial minorities

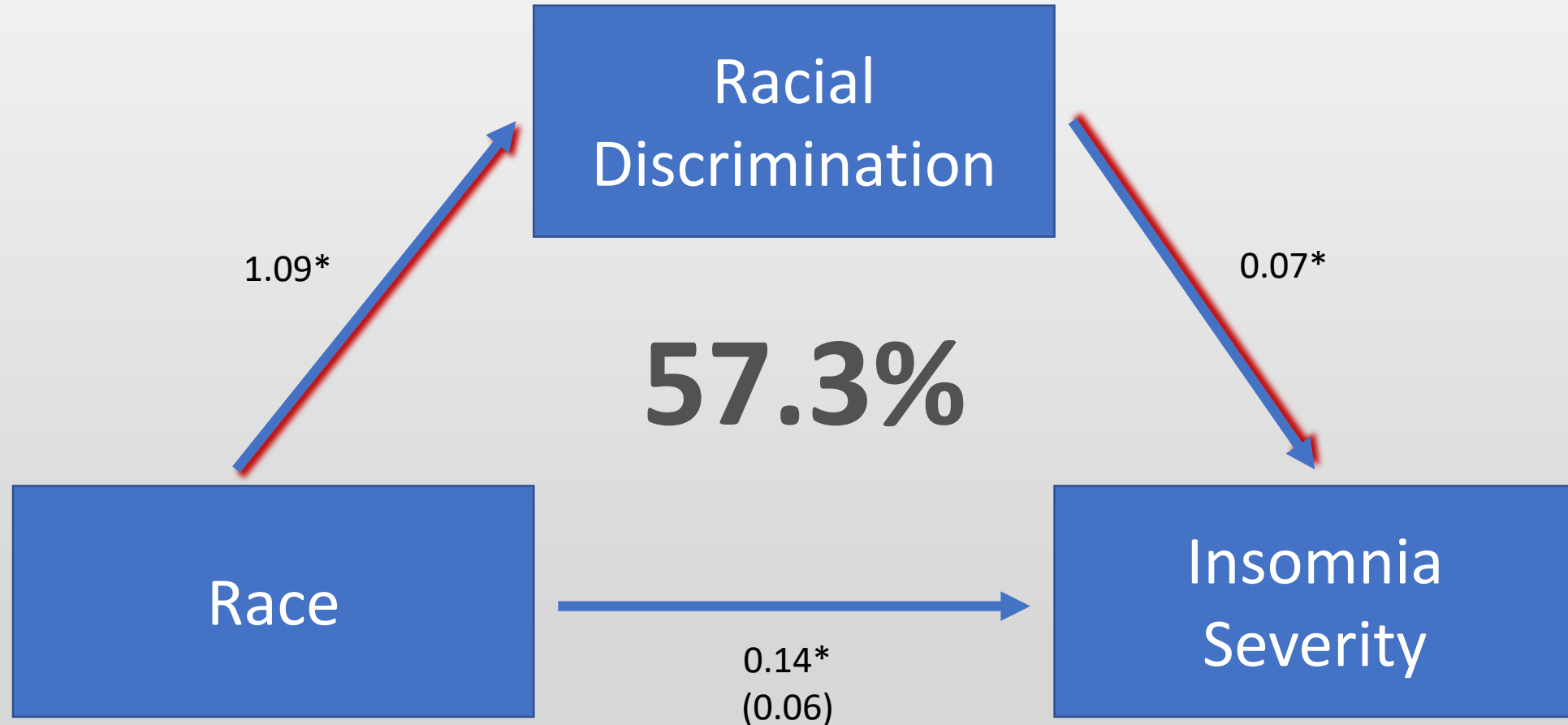
- Discrimination and racism
- Acculturation
 - Religious beliefs and practices
 - Cultural beliefs about sleep
 - Stress
- Work related stressors
 - "Model minority"
- Residual effects from residential segregation
 - Minorities were forced to live in non-resource rich environments
 - Anxiety due to over-policing



These experiences can lead to chronic stress and result in poor sleep

Empirical evidence of the multilevel determinants of sleep disparities

Discrimination as a determinant of racial disparities



11.6% of African American
9.9% of American Indian
42.4% of Latinx

African American (AA),
American Indians (AI),
Asian (A), and Latinx (L)
vs. non-Hispanic White
(referent)

Neighborhood
Socioeconomic
Disadvantage

Neighborhood Safety

Neighborhood Social
Cohesion

Short Sleep
Duration

AA=-.180*, AI=-.054*, A=-.014, L=-.222*

**Household
Socioeconomic Status**
Indirect Effects
: AA=-.011*, AI=-.003*, A=-
.001, L=-.014*

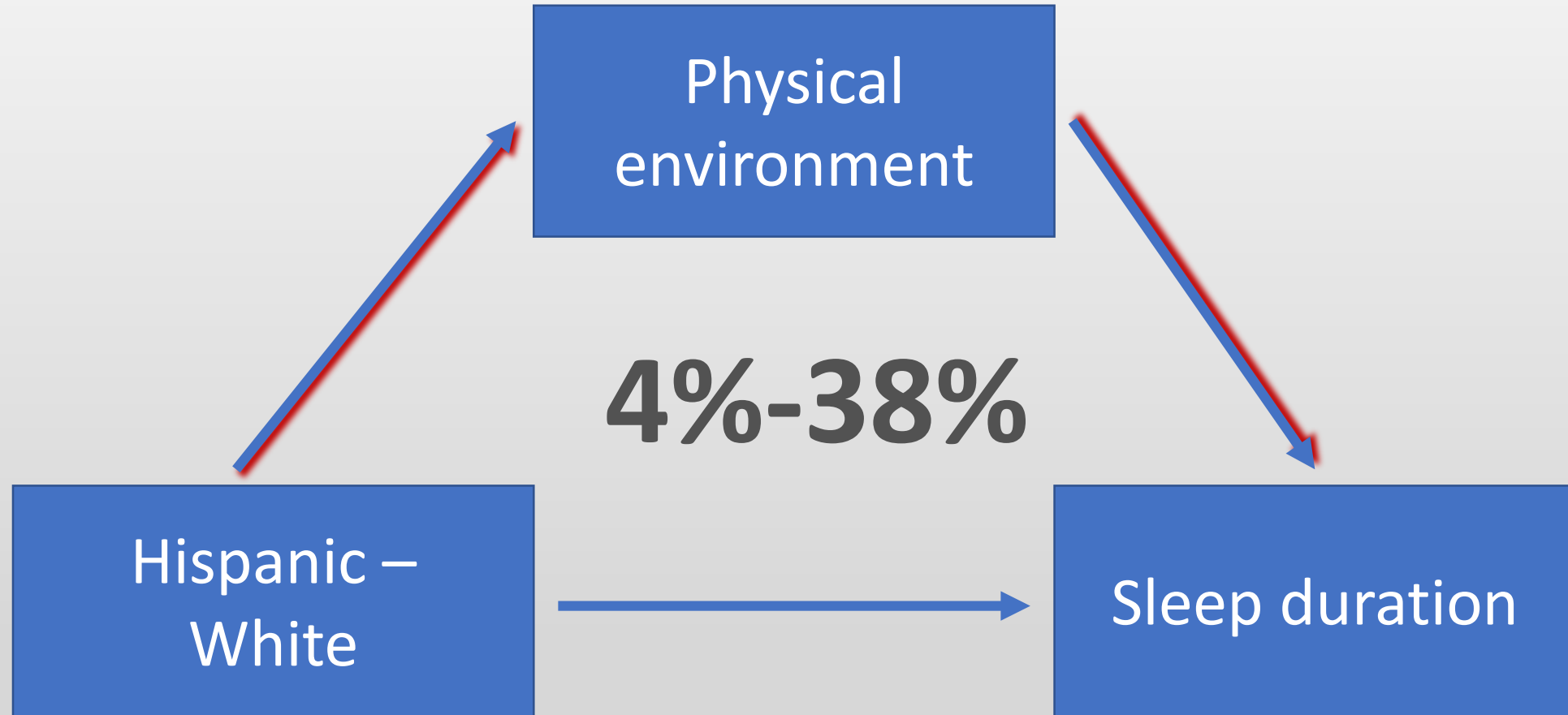
.061**

Single Parent Household

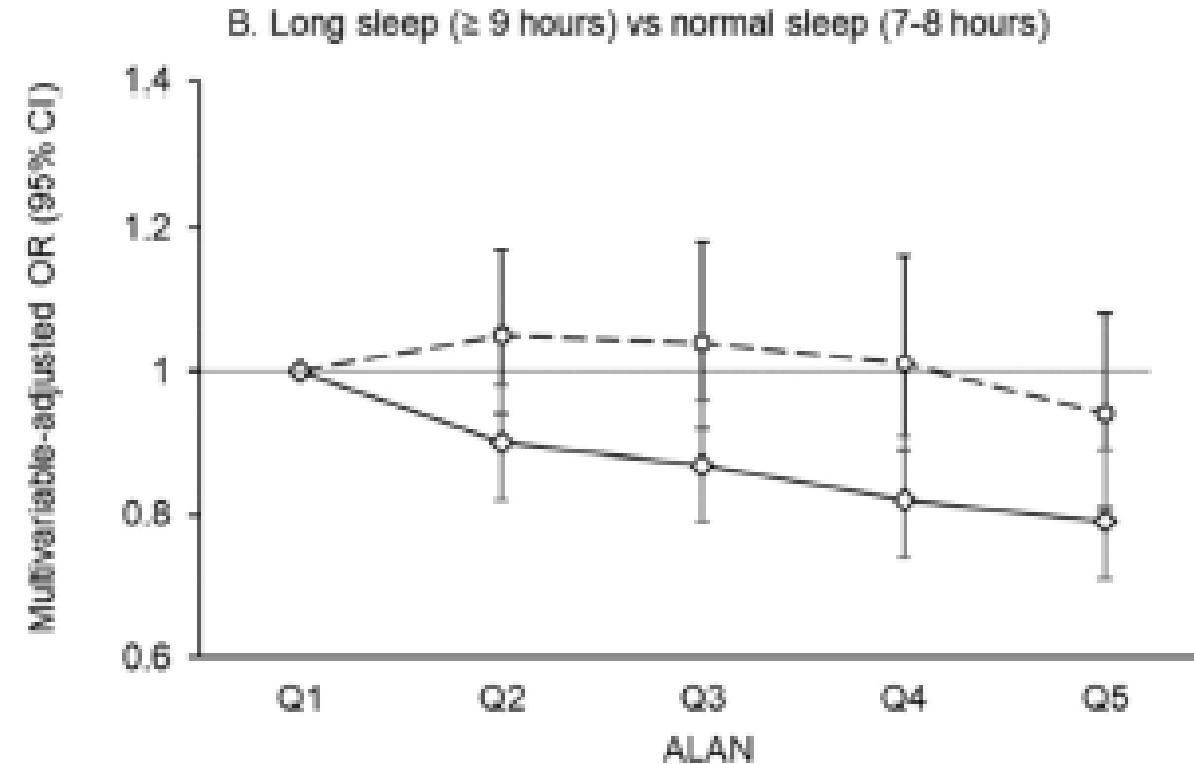
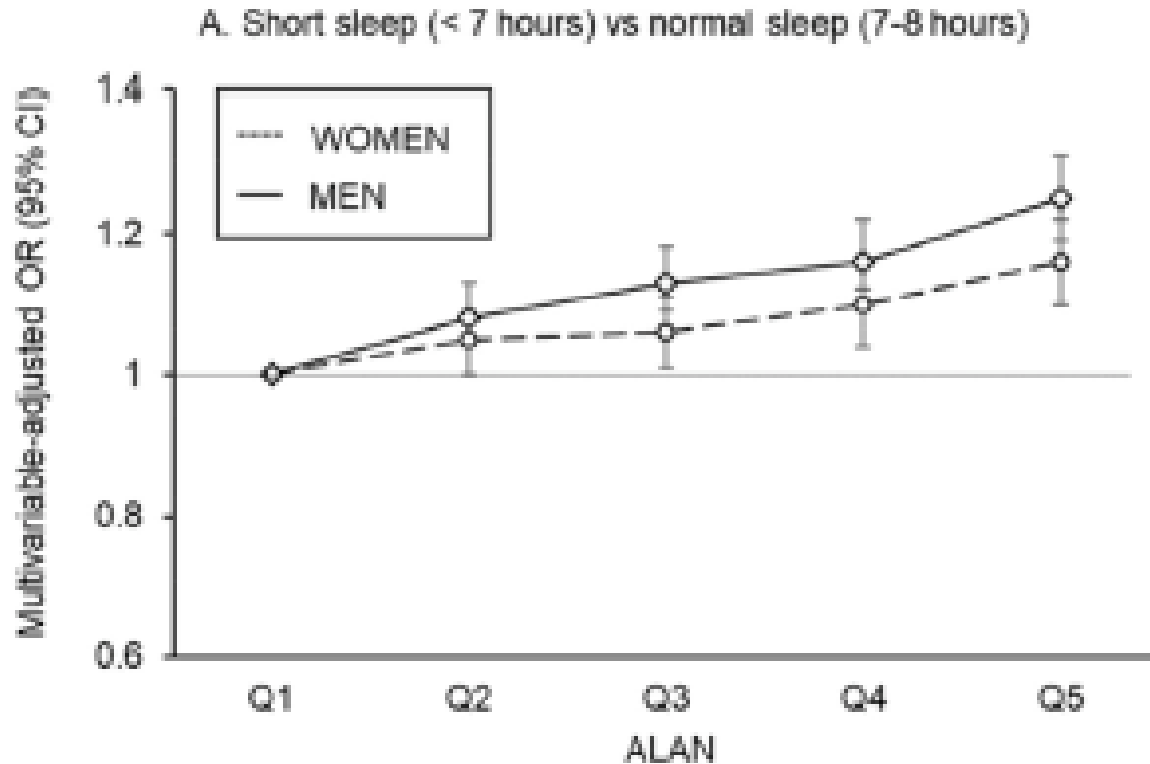
Note: *p<.05

Total Effects: AA=.055***, AI=.021, A=.026*, L=<.001

Built environment as a determinant of racial disparities



Light at night and sleep duration



Association between light at night and short sleep was most pronounced in neighborhoods with higher levels of poverty

Interventions

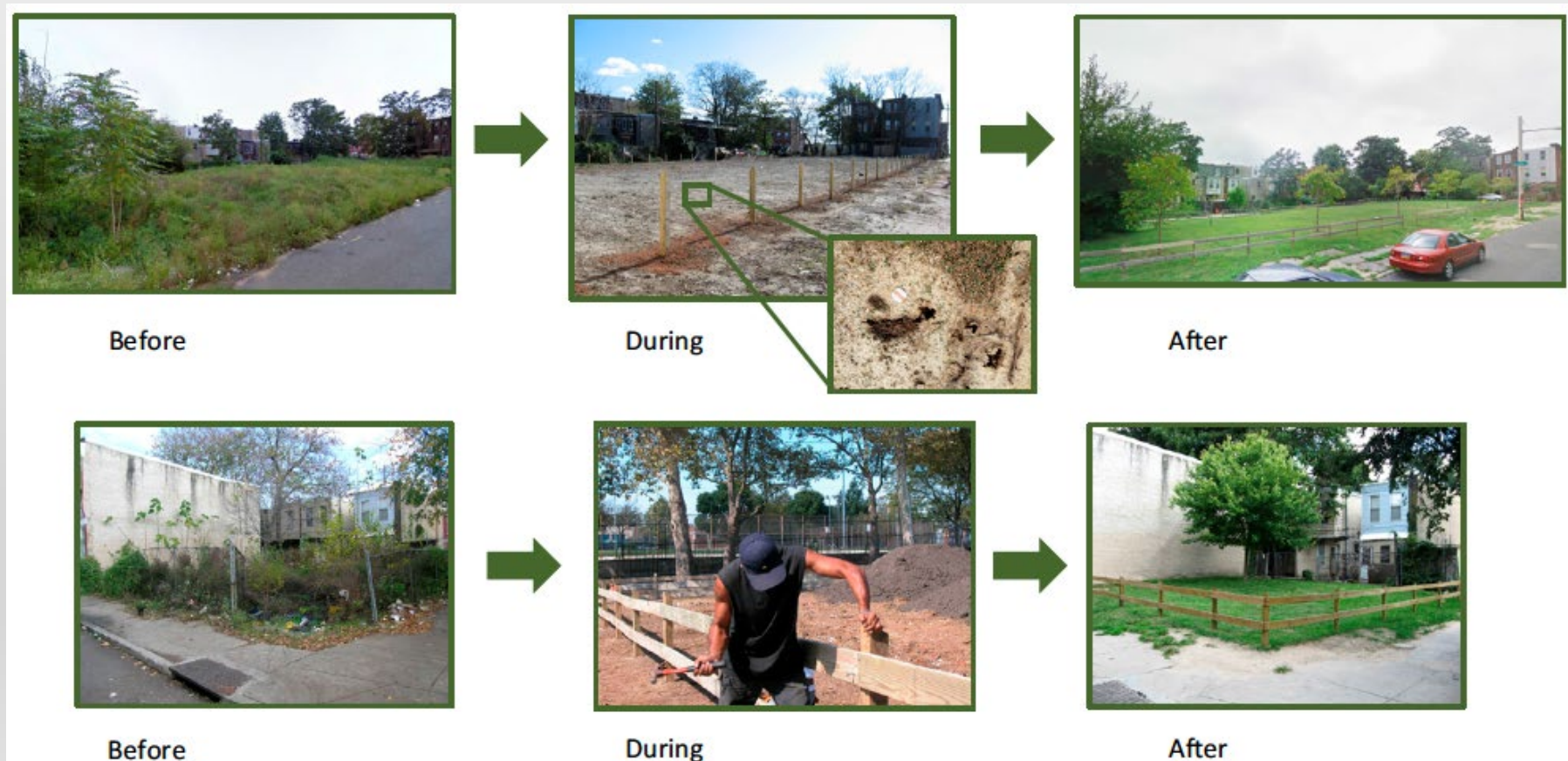
The image features a soft-focus background of a park with green trees and several people walking. In the foreground, a vibrant plaid blanket with orange, green, and white patterns is spread out on a grassy field. The word "Interventions" is centered in a black, sans-serif font.

Multilevel interventions

- Screening and treatment
- Target determinants of poor sleep
 - Address racism and discrimination
 - Stress and anxiety
- Conduct multilevel interventions
 - Neighborhood improvements
- Design homes to promote sleep health
 - Insulation, ventilation, soundproof, thermal comfort
- Reduce light pollution
 - Shielding, curtains/shades, reducing blue light before bed
- Promote safety



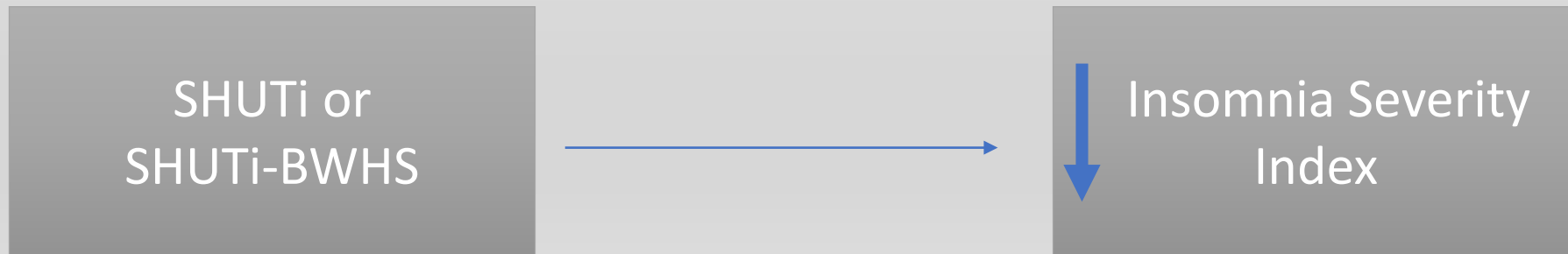
Citywide cluster randomized trial to restore blighted vacant land and its effects on violence, crime, and fear



Insomnia treatment among Black women

3-arm randomized clinical trial

- Internet-delivered treatment called Sleep Healthy Using the internet (SHUTi)
- Stakeholder-informed tailored version of SHUTi for Black women (SHUTi-BWHS)
- Patient education



SHUTi-BWHS was more engaged

Summary

- Sleep disparities exist
 - Structural factors
- Stress, discrimination, household, and neighborhood environment are determinants of sleep disparities
- Interventions to reduce sleep disparities exist
 - Important factors to consider:
 - Tailoring
 - The context of the environment

Acknowledgements

Collaborators

- Dr. Philip Cheng
- Dr. Chandra Jackson
- Dr. Ryan Sealee
- Krysta Medearis

Funding

- National Institutes of Health, National Institute for Heart Lung and Blood K01HL138211
- Woodruff Health Sciences Center Synergy Award
- Rollin's Dean Pilot and Innovation Award
- Georgia Center for Diabetes Translation Research (GCDTR) Pilot & Feasibility Pilot Award Program

Questions?

***When** we sleep, **where** we sleep, and **with whom** we sleep are all important markers or indicators of social status, privilege, and prevailing power relations.*

—Simon J. Williams (2005)