

Measuring the Relationship Between Transportation Insecurity, Health Inequality, and Health Access

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October 29, 2024 | APHA Annual Meeting, Minneapolis, MN



Presenter Disclosures

1. The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

**PRACTITIONERS'
PERSPECTIVE**

**RESEARCH
BACKGROUND**

METHODS

RESULTS

DISCUSSION



Health Net
OF WEST MICHIGAN

Navigating Care. Connecting Resources.



Transportation Insecurity

How do we capture the transportation experiences of someone like Thomas?

This is an important question for a few reasons:

1. We want appropriate screeners to identify people like Thomas
2. We want to understand how many Thomas' there are globally and locally
 - A. How big is the problem we are trying to address?
 - B. How many people like Thomas are there who never make that initial phone call for help?
3. We want to understand how the full scope of transportation problems impact individual wellbeing and life chances

PRACTITIONERS'
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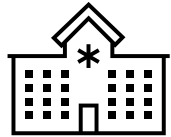
RESULTS

DISCUSSION

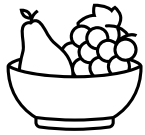
Transportation Insecurity

IMPORTANT SOCIAL DETERMINANT OF HEALTH

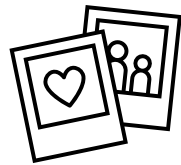
Transportation is consequential for:



Seeking health care



Accessing nutritious food



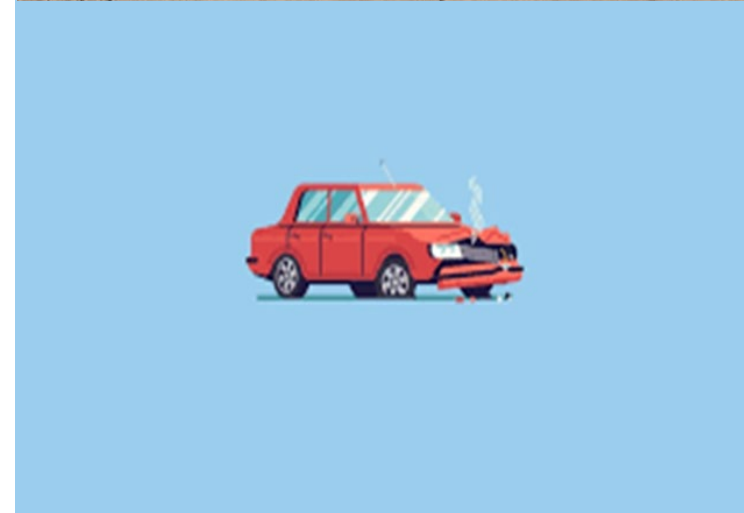
Making social connections



In the past 12 months, has lack of reliable transportation kept you from medical appointments, meetings, work or from getting things needed for daily living?

Transportation Insecurity

A condition in which one is unable to regularly move from place to place in a safe or timely manner due to an absence of resources needed for transportation (e.g. money for gas, a friend with a car, the physical health to walk) (Gould-Werth et al. 2018; Murphy et al. 2021)



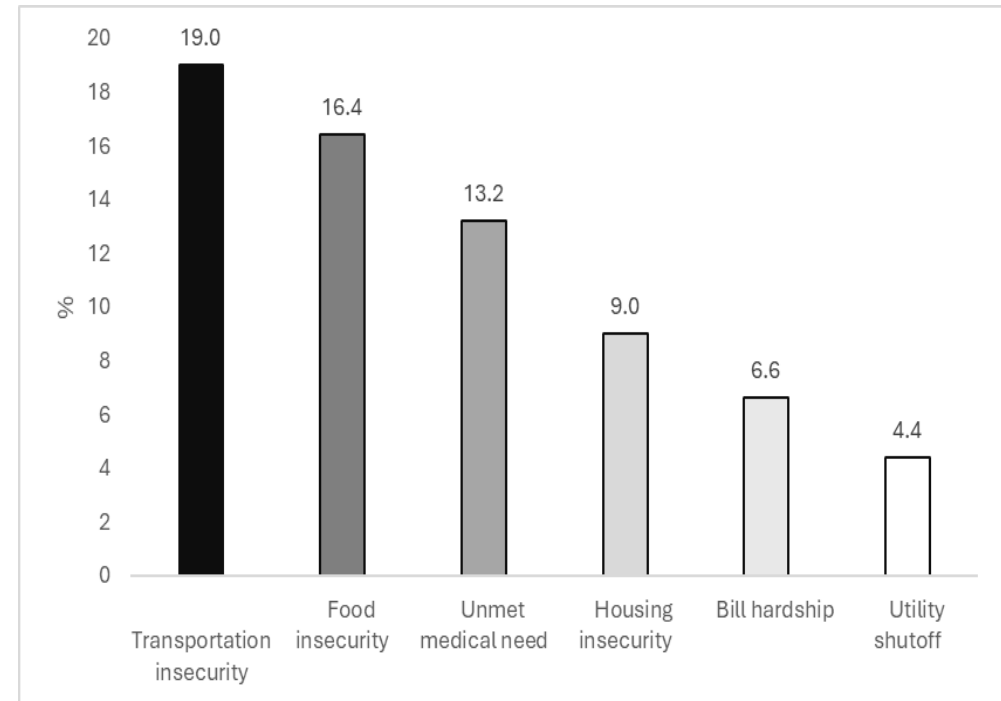
Transportation Insecurity

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EXISTING SDoH EVIDENCE

- Dose-Response Relationship between transportation insecurity and depressive symptoms (McDonald-Lopez et al. 2023)
- Threshold Relationship between transportation insecurity and physical health (McDonald-Lopez et al. 2023)

Recent study (under review) shows that transportation insecurity is **the** most prevalent form of material hardship experienced by Americans.



It is **just as strongly associated** with poor self-rated health and depressive symptoms as food insecurity and having unmet medical needs.

PRACTITIONERS'
PERSPECTIVE

National evidence links transportation insecurity to health outcomes.

RESEARCH
BACKGROUND

Transportation insecurity and its impacts vary locally, as do potential interventions.

METHODS

RESULTS

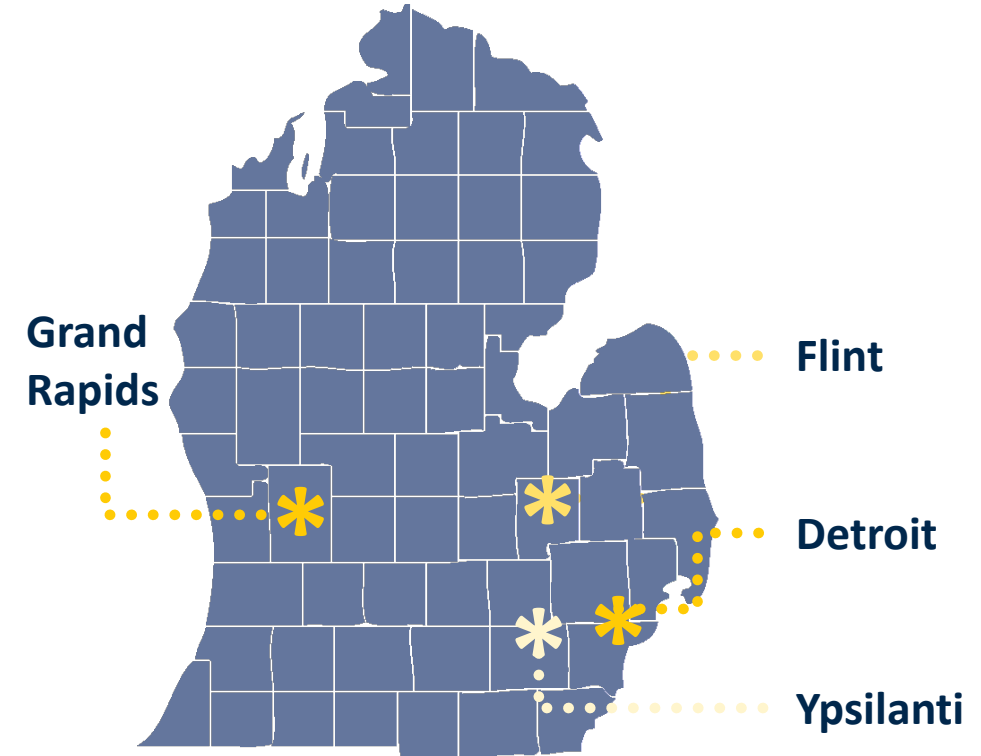
What can we learn about transportation insecurity by examining the relationship between TSI and health in four Michigan communities?

DISCUSSION

Data

DETROIT & MICHIGAN METRO AREA COMMUNITIES STUDIES

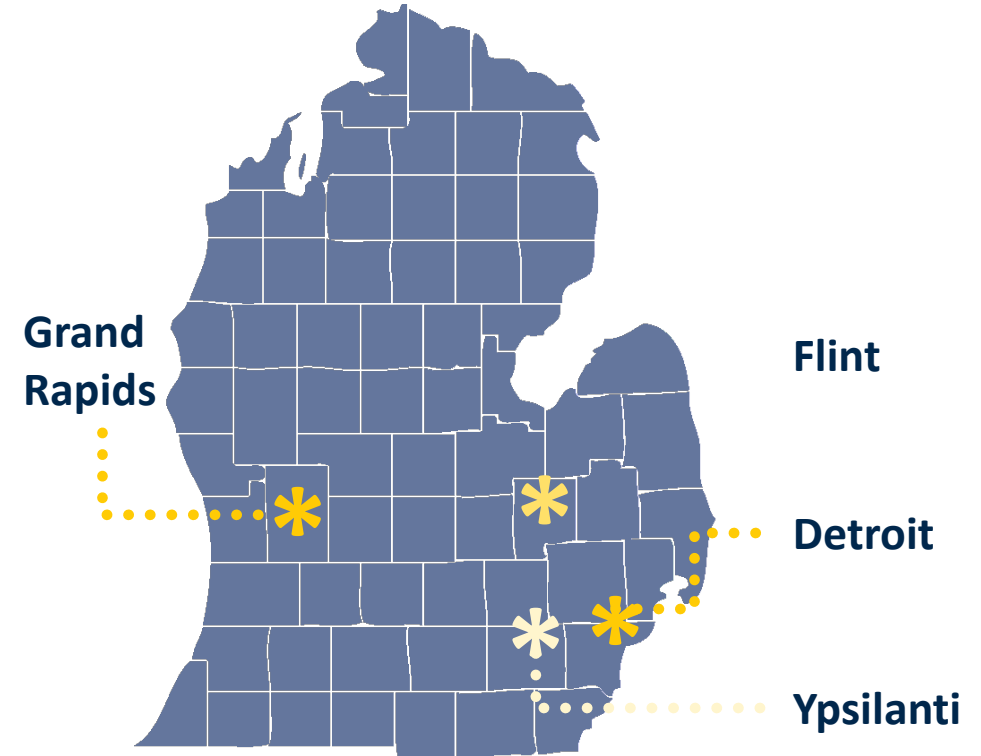
- Address-based representative random sample of households in four MI communities
- Respondents recruited by mail, invited to subsequent waves by email, text, phone
 - Offered incentives for completing surveys
- Survey population weighted to match American Communities Survey
- Data collected in collaboration with Michigan CEAL: Communities Conquering COVID (MICEAL)



Data

DETROIT & MICHIGAN METRO AREA COMMUNITIES STUDIES

- Detroit Sample
 - Collected November – December, 2023
 - N = 2,296
- Grand Rapids Sample
 - Collected January – March, 2024
 - N = 1,379
- Flint Sample
 - Collected January – March, 2024
 - N = 704
- Ypsilanti Sample
 - Collected January – March, 2024
 - N = 673
- Pooled Sample
 - N = 5,052



Exposure

TRANSPORTATION INSECURITY



TSI 6-Item Index:

- Validated Scale
- Experience, in the past 30 days, of six symptoms of transportation insecurity
 - Material Concerns
 - Relational Concerns

Outcomes

HEALTH MEASURES

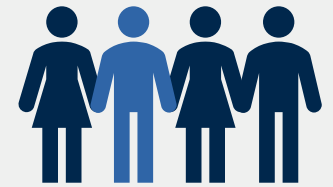


Health

- Self-Rated Health
- Mental Health
- Deferred Medical Care Due to Costs

Controls

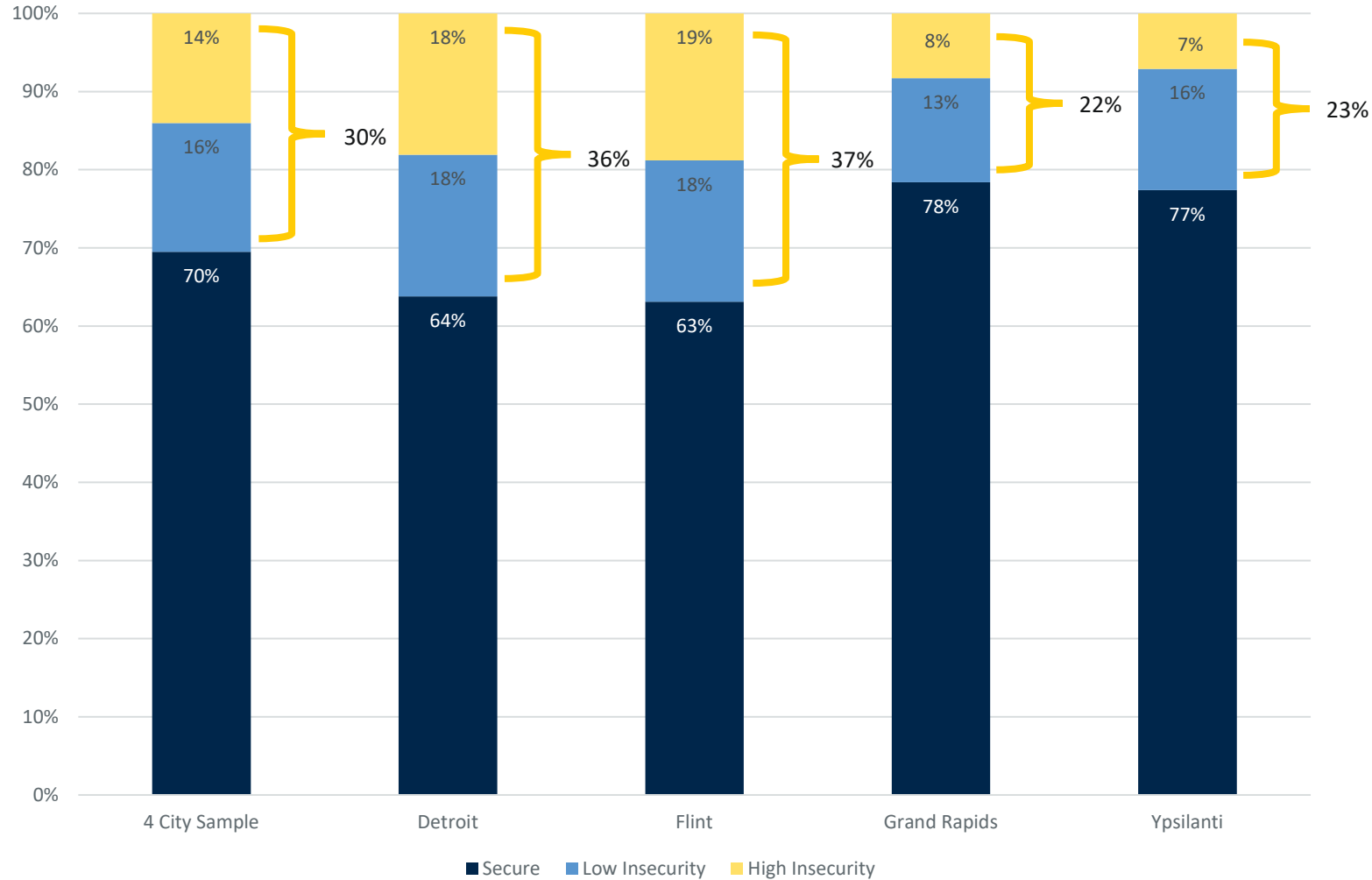
SOCIAL DEMOGRAPHICS



Individual:

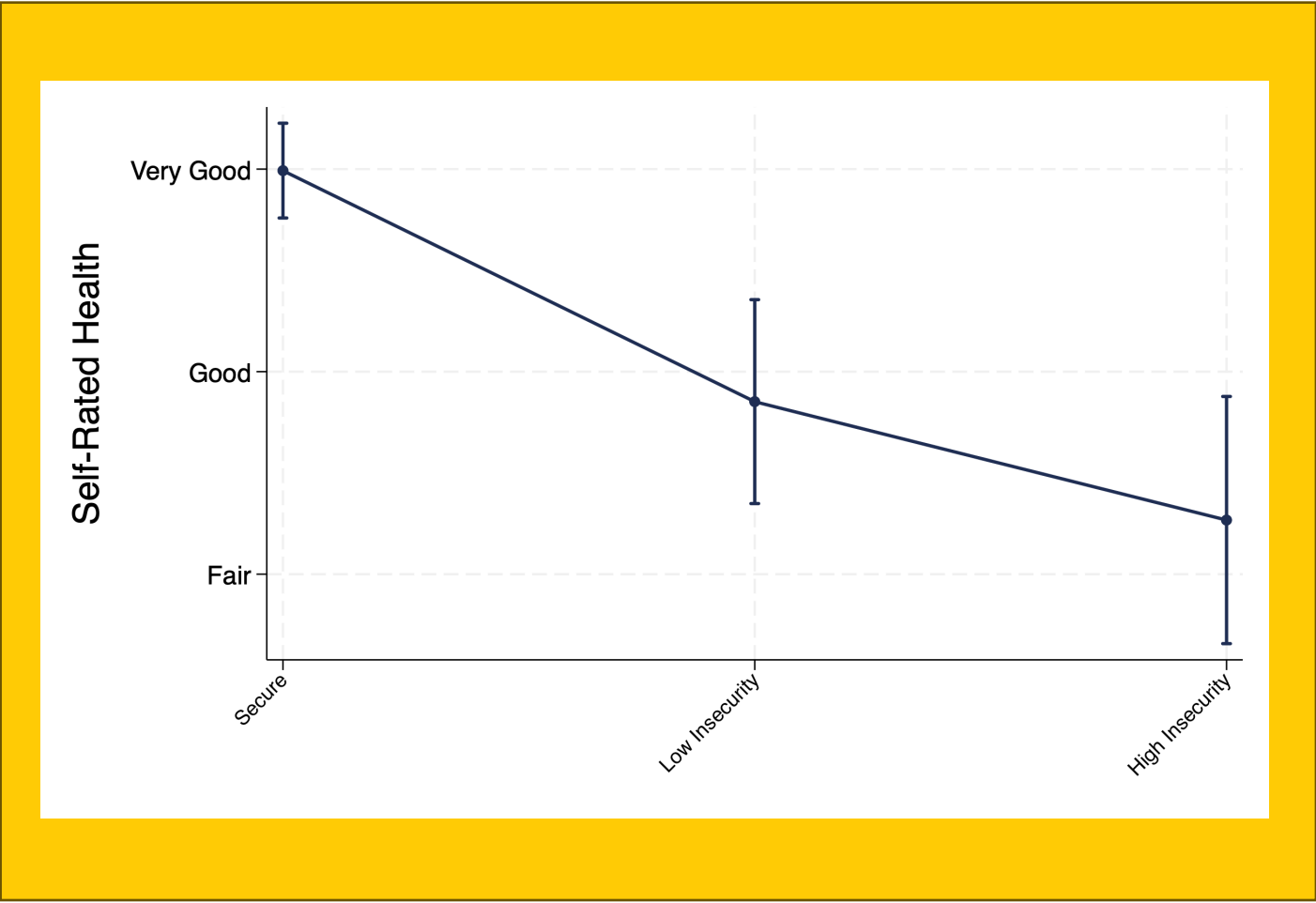
- Age
- Gender
- Race/Ethnicity
- Education
- Income
- Car Ownership

Transportation Insecurity by City



- 30% of residents in our 4-City sample are transportation insecure
- More than a third of Detroit & Flint residents transportation insecure
- 1 in 5 Grand Rapids & Ypsilanti residents transportation insecure
- Detroit & Flint residents are significantly more likely to experience any transportation insecurity and *high* transportation insecurity compared to Grand Rapids or Ypsilanti residents

Transportation Insecurity & Self-Rated Health

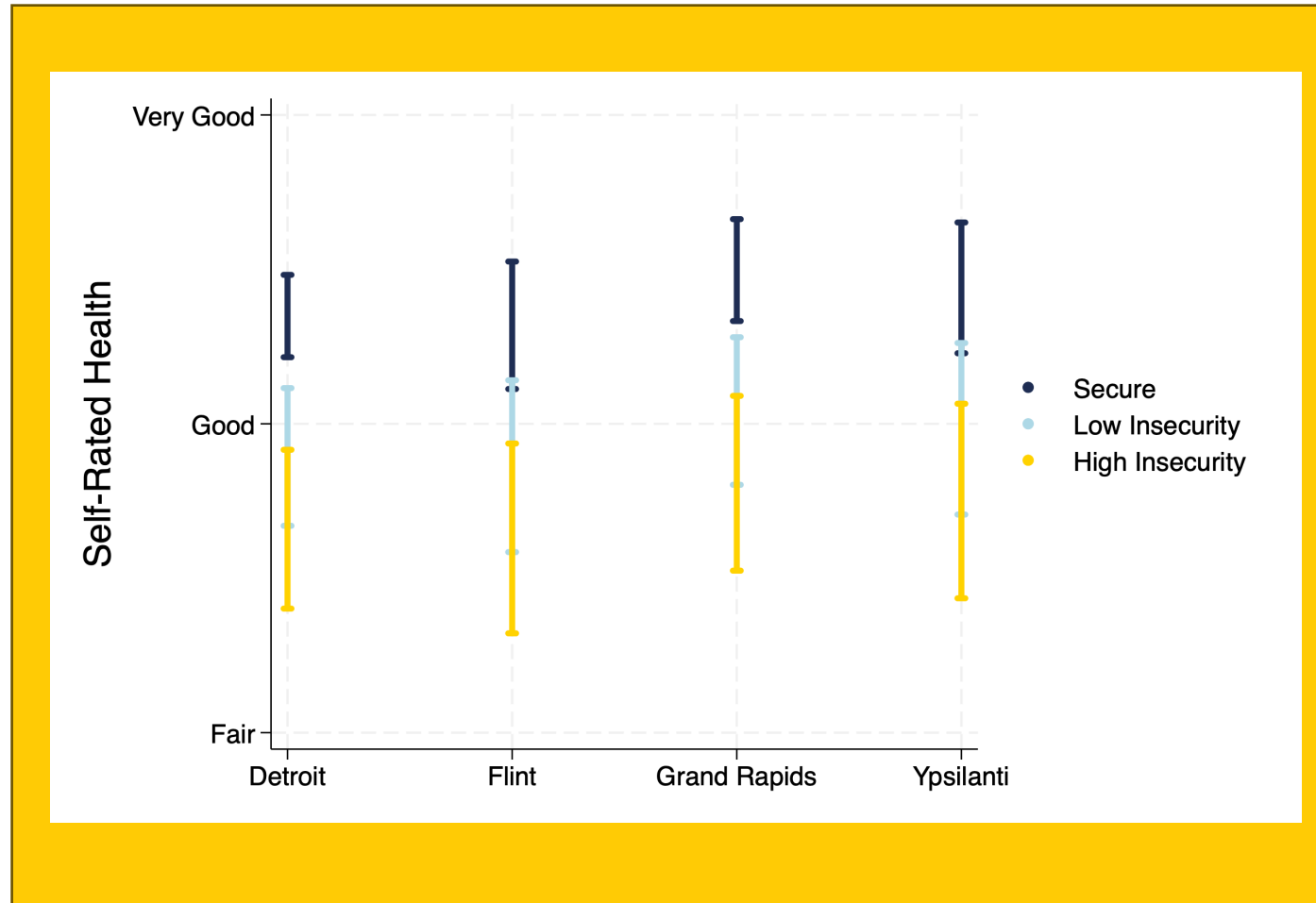


- Transportation insecure residents are significantly *less* likely to rate their health positively.

Self-rated health was measured with the question: In general, how would you rate your health? Poor; fair; good; very good; excellent.



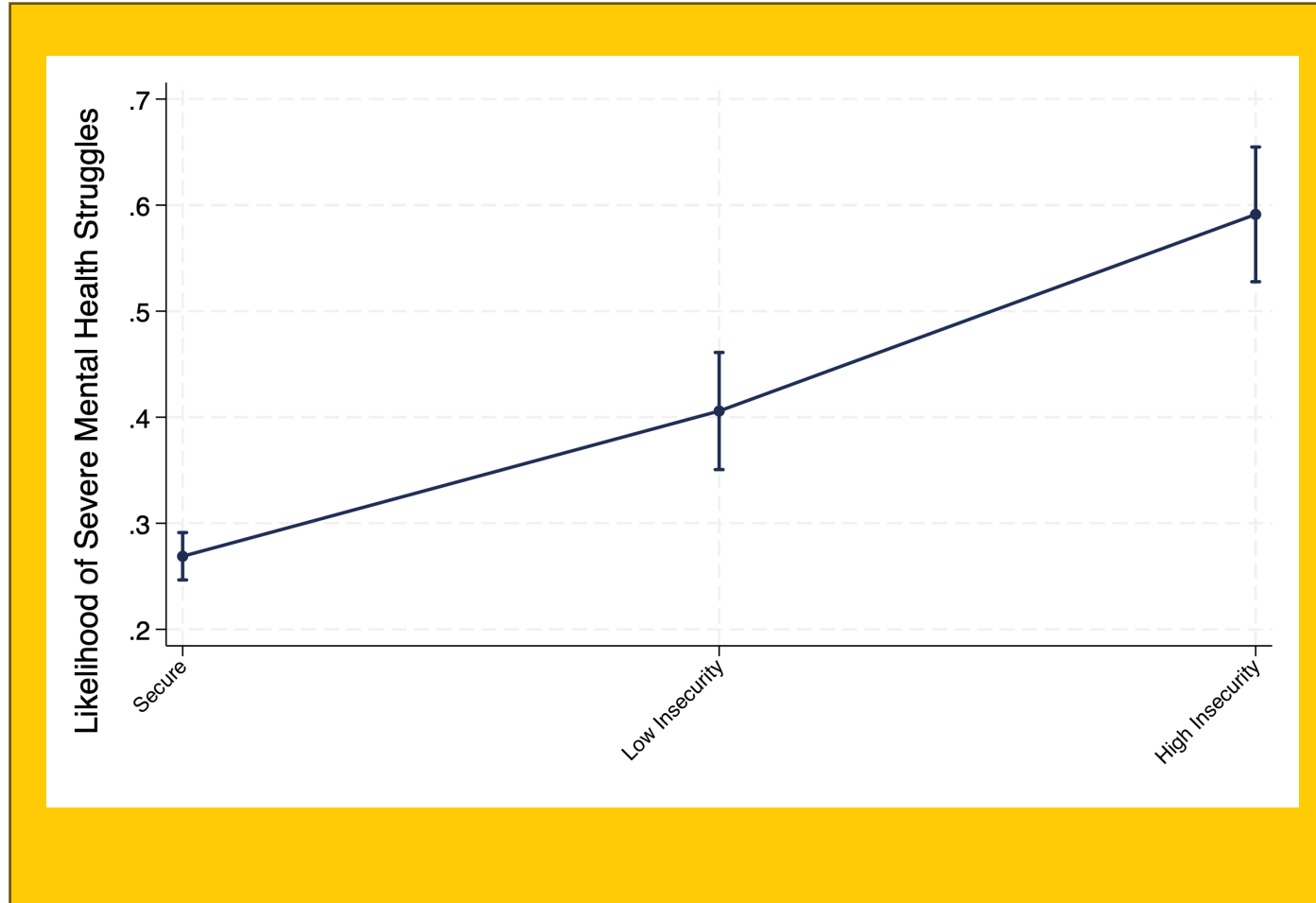
Transportation Insecurity & Self-Rated Health



Self-rated health was measured with the question: *In general, how would you rate your health? Poor; fair; good; very good; excellent.*

- Transportation insecure residents are significantly *less* likely to rate their health positively.
- This is true in every city, where transportation secure residents report significantly better health than those who experience *high* transportation insecurity.
- The gap between transportation secure and insecure residents is especially pronounced in Detroit and Grand Rapids.

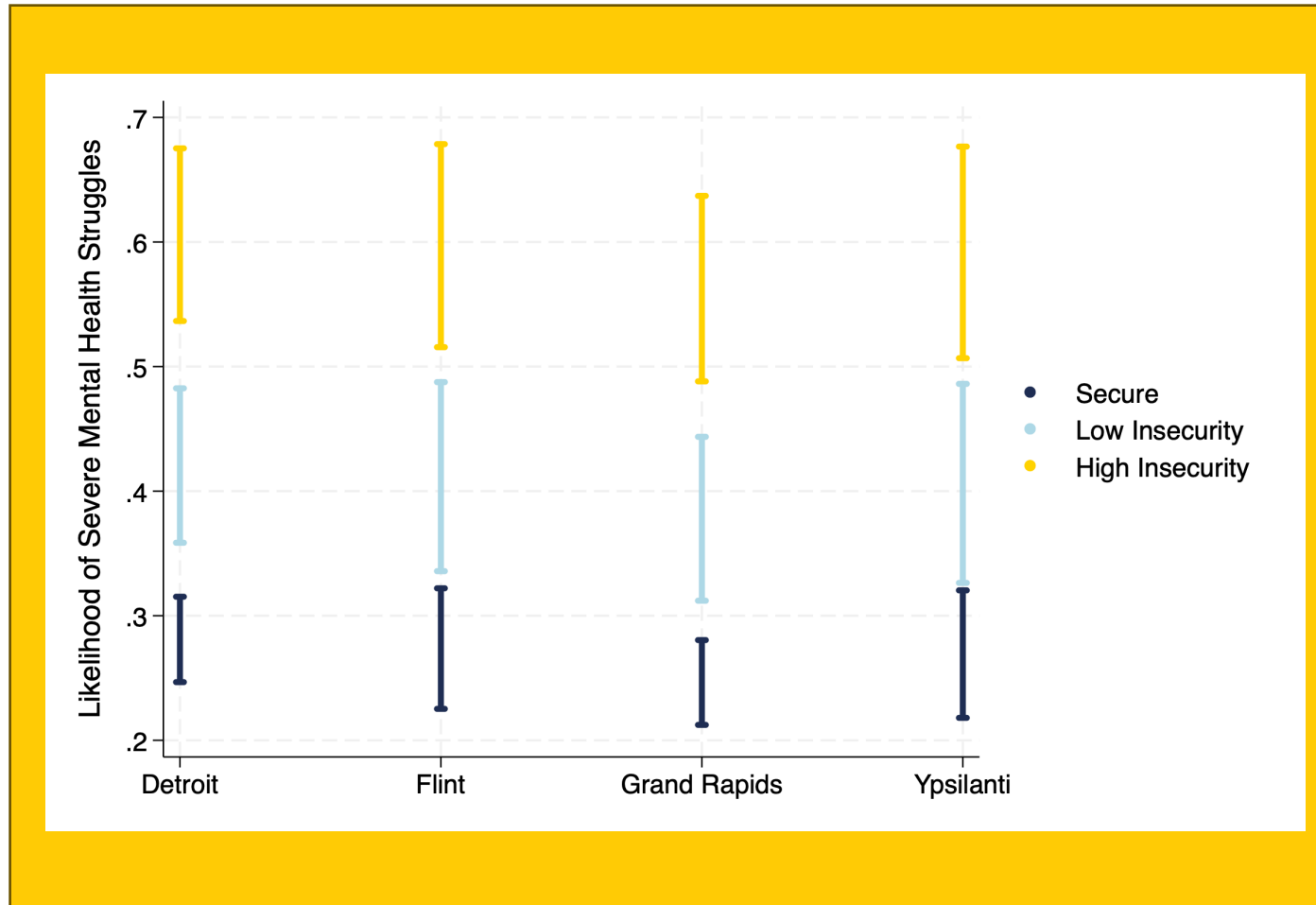
Transportation Insecurity & Mental Health



- Net of individual and city characteristics, transportation insecure residents are significantly *more* likely to report severe mental health struggles in the prior 7 days.
 - The more severe the transportation insecurity, the greater likelihood of poor mental health.

Respondents were characterized as experiencing severe mental health struggles if they reported they had felt anxious, not been able to stop worrying, and/or felt depressed 3 or more days in the past 7 days.

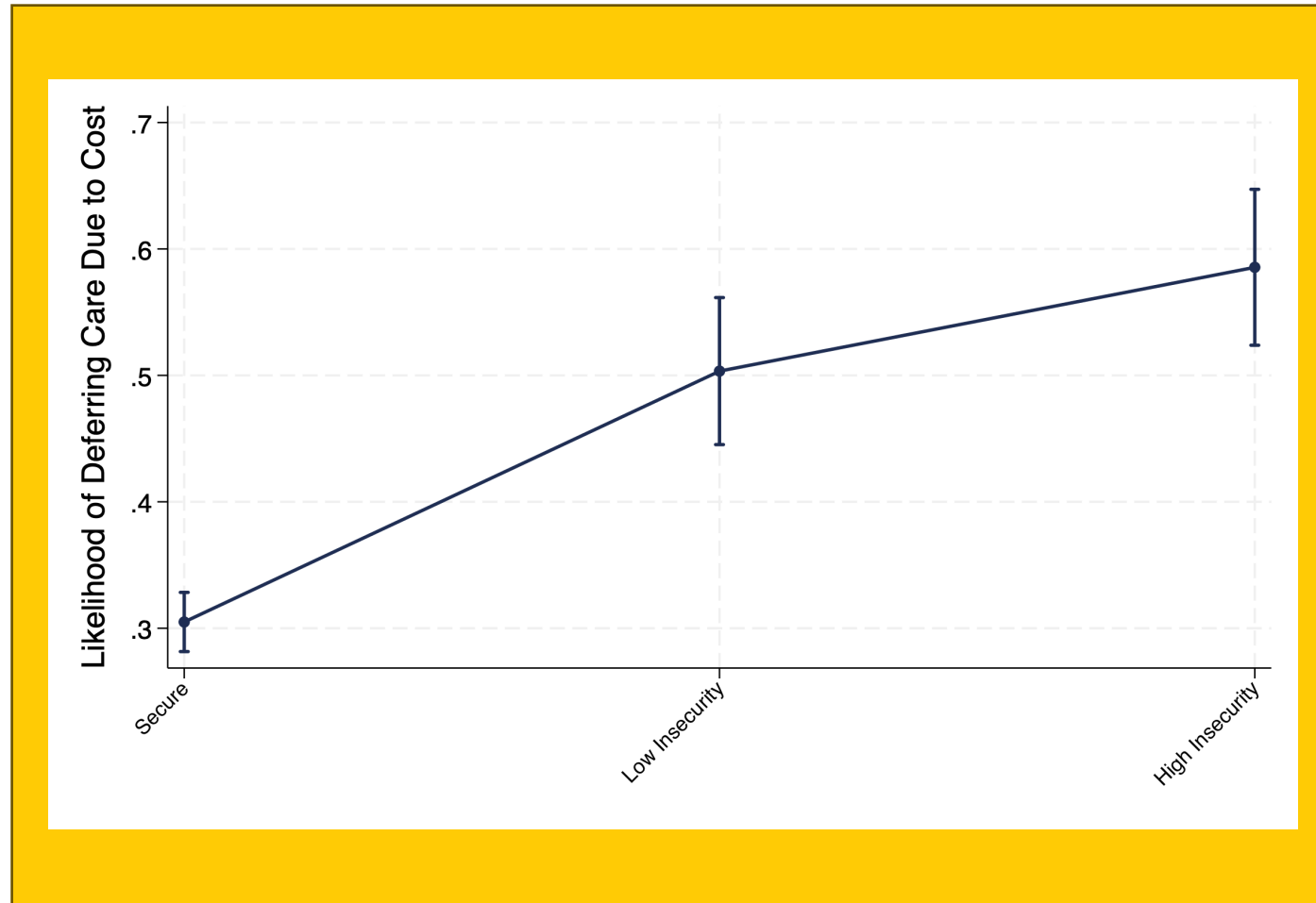
Transportation Insecurity & Mental Health



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- Net of individual and city characteristics, transportation insecure residents are significantly *more* likely to report severe mental health struggles in the prior 7 days.
 - The more severe the transportation insecurity, the greater likelihood of poor mental health.
- In all four cities, highly insecure residents are *twice as likely* to report severe mental health struggles as transportation secure residents.

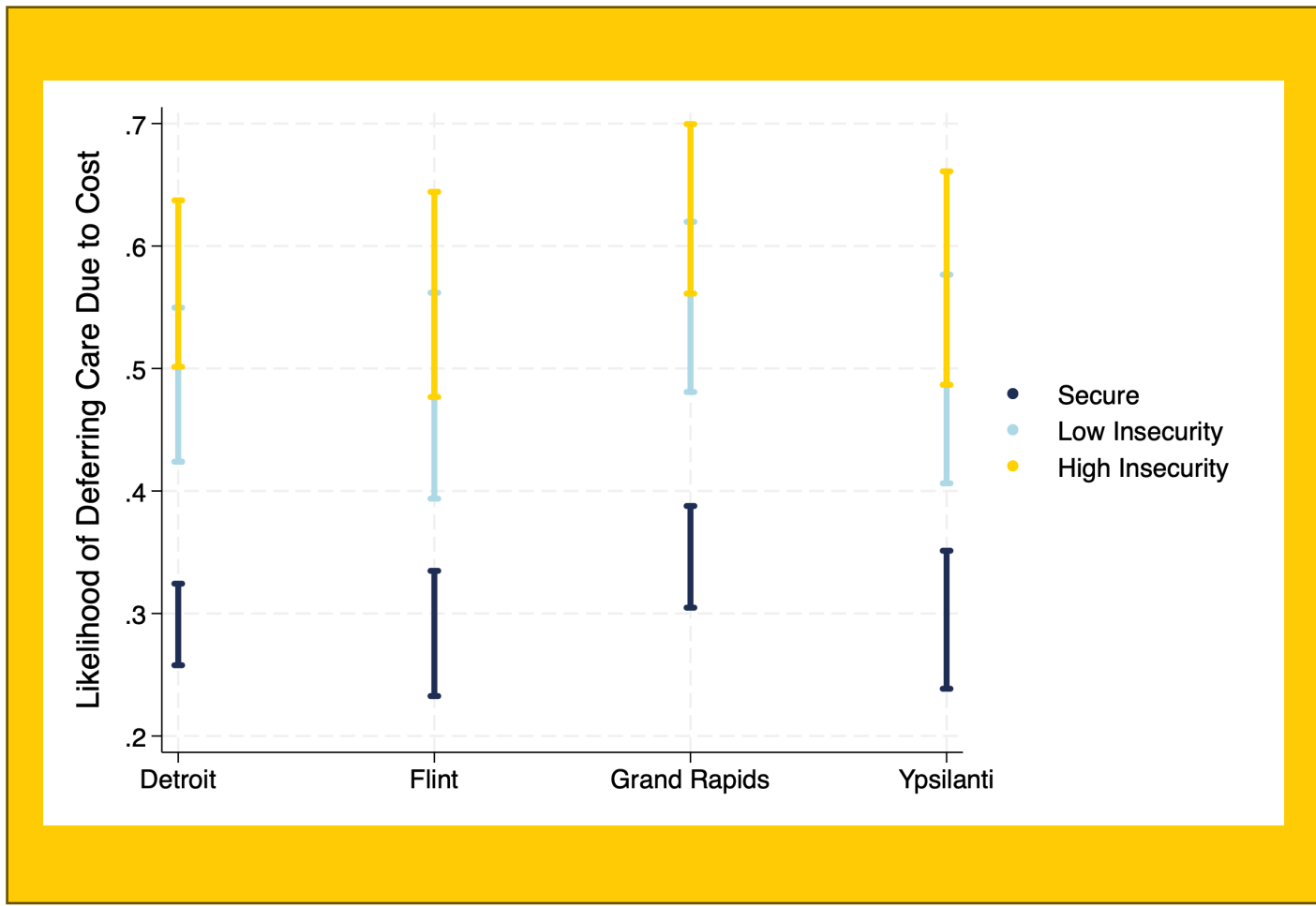
Transportation Insecurity & Deferred Care Due to Medical Costs



- More than half of transportation insecure residents report having deferred medical care due to cost in the past year, compared to 30% of transportation secure residents.

Respondents were characterized as deferring medical care due to cost if they reported ever (as opposed to never or not needing medical care) waiting to get medical care because of cost in the past 12 months.

Transportation Insecurity & Deferred Care Due to Medical Costs



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- More than half of transportation insecure residents report having deferred medical care due to cost in the past year, compared to 30% of transportation secure residents.
- In all four cities, transportation insecure residents are significantly *more* likely to defer medical care compared to transportation secure residents.
 - This effect does not vary significantly by the severity of transportation insecurity.

Takeaways

The Transportation Security Index is a new tool revealing the extent of transportation hardship within and between communities in the U.S.

Because it captures a broader scope of symptoms, the TSI is exposing the extent of hardship created when an individual is unable to regularly move from place to place in a safe or timely manner.

Local evidence supports national findings that transportation insecurity is a significant, negative predictor of health, net of individual and city characteristics.

Transportation insecurity is a common issue. Transportation insecure individuals report worse physical and mental health and are more likely to defer medical care due to cost.

Incorporating the TSI into the social determinants of health toolbox can clarify the influence of transportation insecurity on health and help create interventions to address health disparities and barriers to care.

Acknowledgements

Research Supported By:

Mcity

Michigan Central

MICEAL: Michigan Communities Conquering Covid-19

(NIH grant 1 OT2 HL 156812)



Thank you!

Any questions?



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