

All of Us Research Program

Researcher Session 2: Evaluating Health Care Utilization, Access, and Application

April 3, 2024



Session Speakers



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Barriers to Healthcare Utilization among Adults Engaging in Heavy Drinking

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CTSA - PACER – *All of Us*



Background

6.3%

Prevalence of heavy drinking among adults in the past 30 days

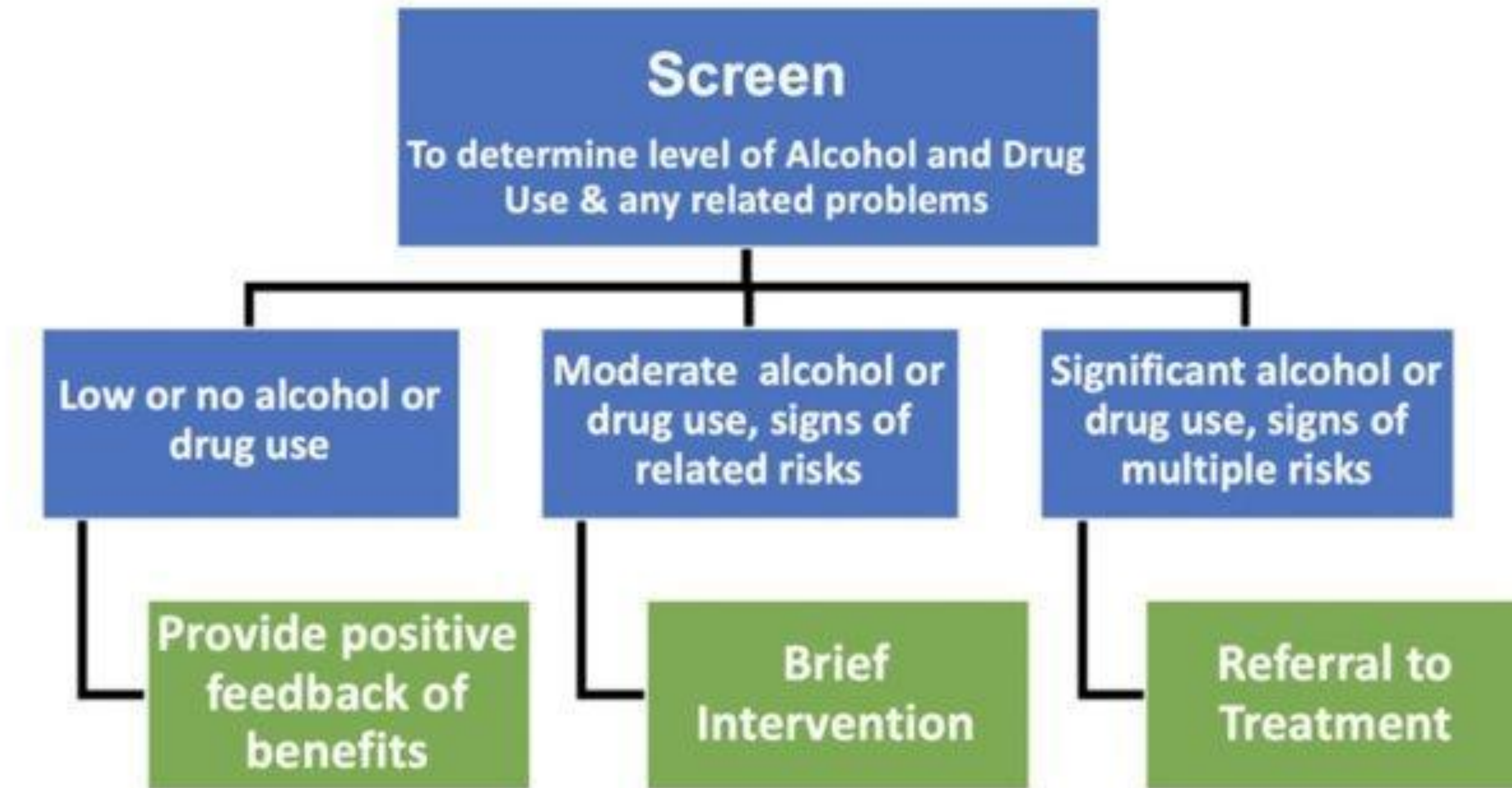
10.5%

Prevalence of Alcohol Use Disorder (AUD) among adults in the past year

7.6%

Prevalence of adults with past-year AUD who received alcohol use treatment in the past year.

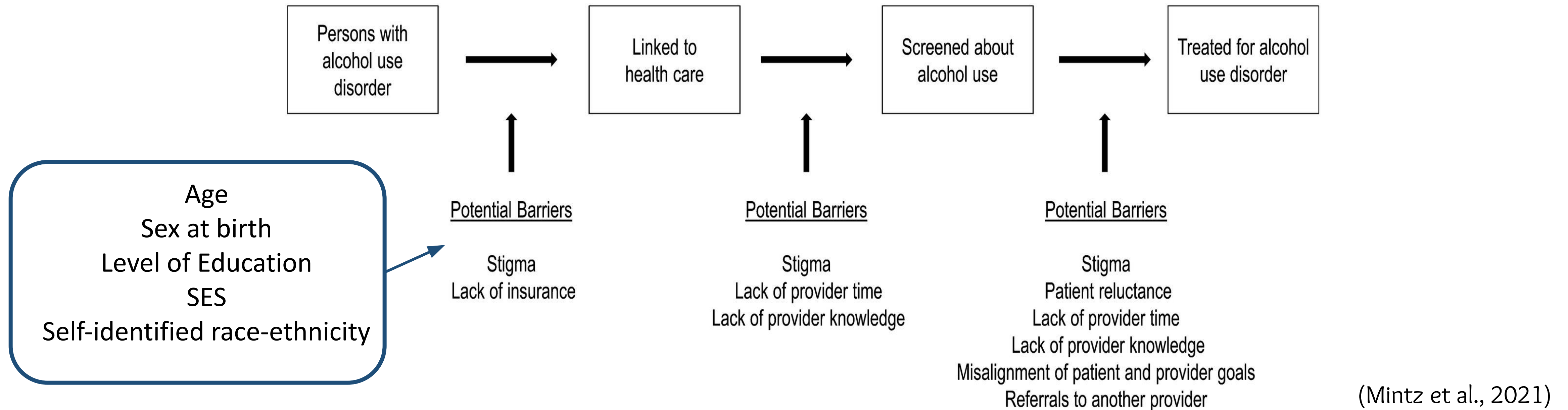
Background



Wouds et al.
(2021)

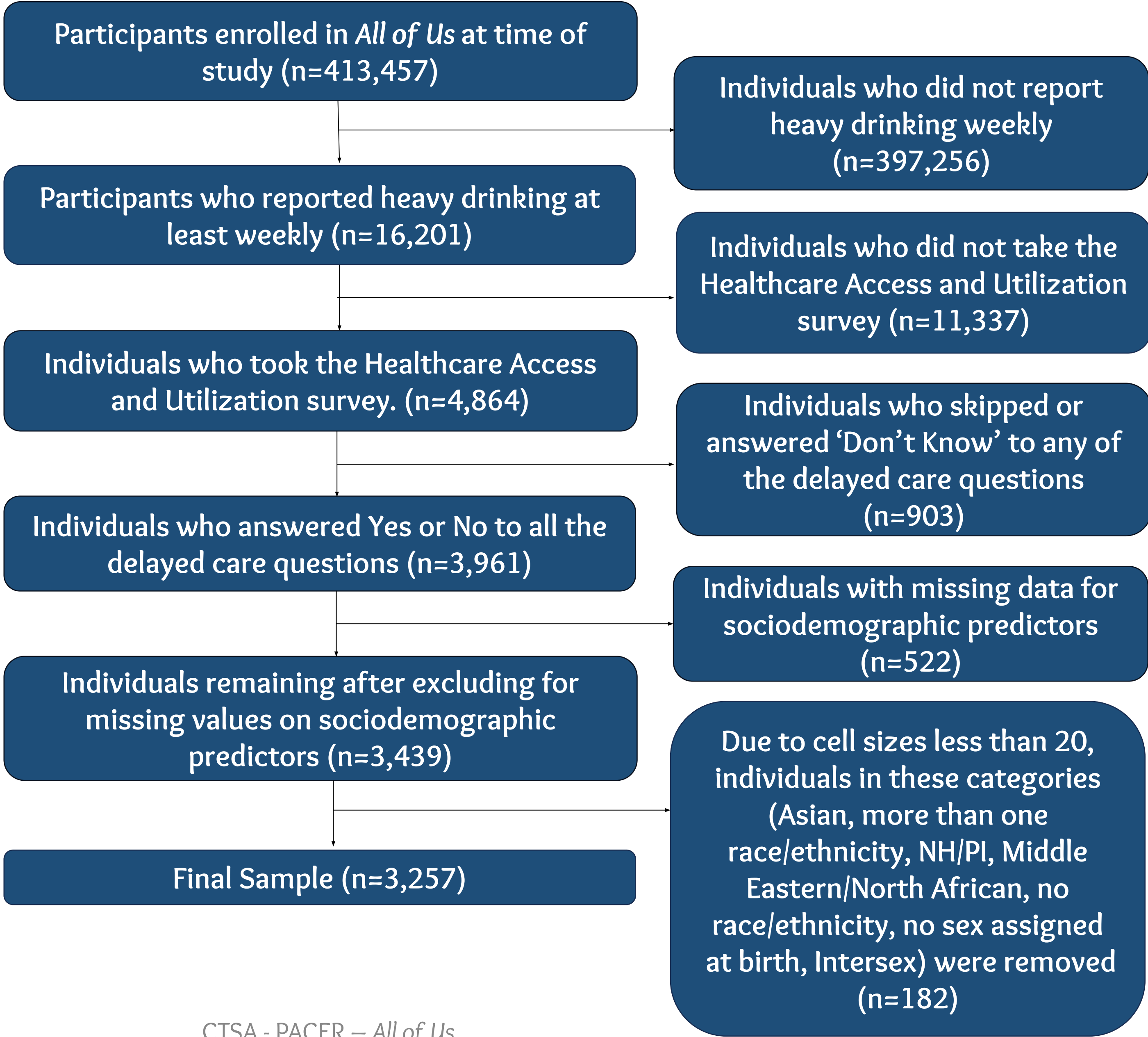
Study Aim

A cascade of Care for Alcohol Use



Assess sociodemographic factors associated with experiencing barriers to healthcare utilization among people engaging in heavy drinking.

Figure 1. Flowchart of exclusion criteria leading to the final study population.



Heavy drinking: six or more drinks on one occasion, at least weekly.

- NIAAA defines heavy drinking as follows:
 - Men: consuming five or more drinks on any day or 15 or more per week
 - Women: consuming four or more on any day or 8 or more drinks per week
- SAMHSA defines heavy alcohol use as binge drinking on 5 or more days in the past month
 - Binge drinking is defined as:
 - Men: five or more alcoholic drinks on the same occasion
 - Women: four or more alcoholic drinks on the same occasion

Dependent Variables

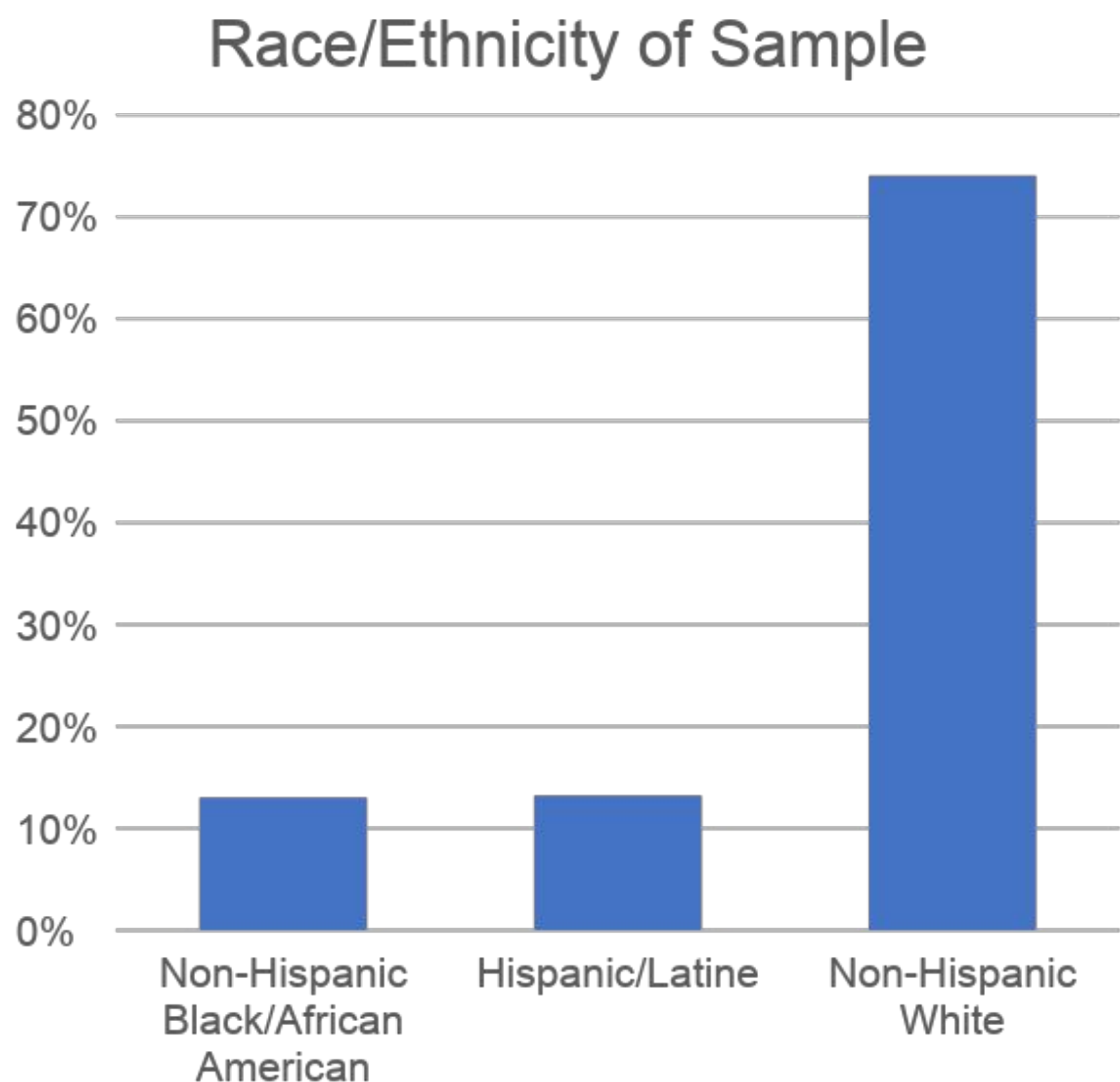
This study used data from the Health Care Access & Utilization Survey available in the *All of Us* Research Program's Controlled Tier Dataset v7.

- **Structural reasons** ☐ No transportation, residence in rural areas where long distances to health care services
- **Attitudinal barriers** ☐ “nervous about seeing a health care provider”
- **Competing roles/obligations** ☐ Childcare, care taking responsibilities for child or adult, work responsibilities/restrictions (“couldn’t get time off work”).
- **Financial** ☐ could not afford copay, deductible too high, had to pay out of pocket.

Independent Variables

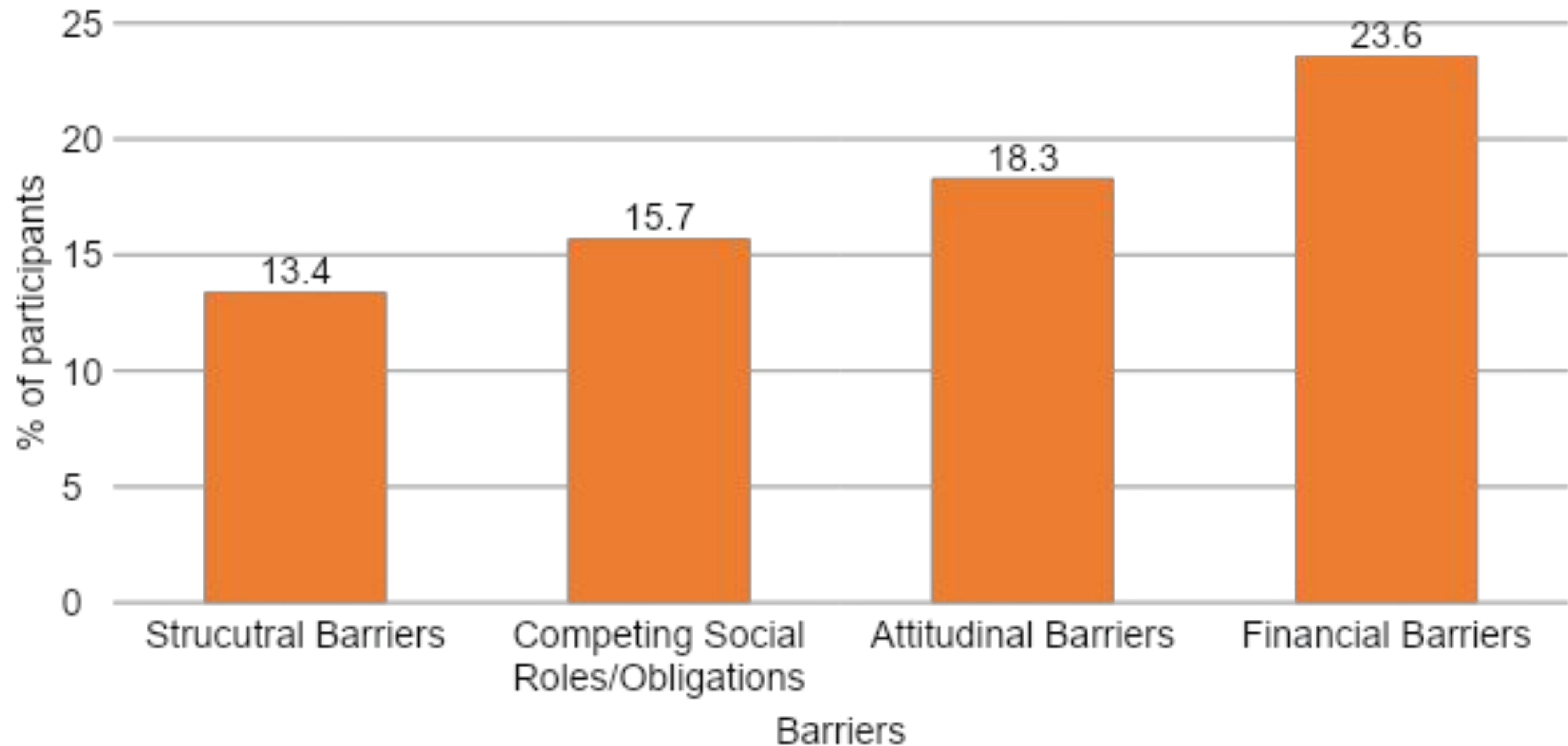
- **Sex at birth** (Male or Female)
- **Age** (in years)
- **Annual household income** (Less than \$25,000; \$25,000 to \$49,999; \$50,000 to \$74,999 and \$75,000 or more)
- **Educational attainment** (Less than a high school (HS) diploma/HS diploma/GED, one to three years of postsecondary education after HS, and a Bachelor's degree or higher)
- **Self-reported race-ethnicity** (NH White, NH Black or African American, and Hispanic/Latine)
- **Health insurance coverage**

Sample Characteristics



Characteristic	M (SD) or f
Age	47 (15.2)
Male	55.5%
Educational Attainment	
Less than HS/HS Diploma/GED	20.7%
1 to 3 years postsecondary education	27.6%
Bachelor's degree or higher	51.7%
Annual Income	
Less than \$25,000	25.2%
\$25,000 to \$49,999	19.8%
\$50,000 to \$74,999	14.3%
\$75,000 or more	40.7%

Results – Barriers to Healthcare Utilization



Socio-Demographic Correlates of Barriers to Healthcare Utilization Among Individuals who Engage in Heavy Drinking

		Structural Barriers	Competing social roles/obligations Barriers	Attitudinal Barriers	Financial Barriers
		aOR (95% C.I.)	aOR (95% C.I.)	aOR (95% C.I.)	aOR (95% C.I.)
Sex at birth (ref: Male)			1.56 (1.28, 1.90)	1.41 (1.17, 1.70)	1.41 (1.19, 1.68)
Age		0.99 (0.98, 0.99)	0.96 (0.95, 0.97)	0.96 (0.96, 0.97)	0.98 (0.97, 0.98)
Income (\$75,000)	<\$25k	6.71 (4.77, 9.56)		1.71 (1.31, 2.25)	
	\$25k - 49,9k	2.48 (1.71, 3.60)	1.58 (1.21, 2.07)		1.80 (1.41, 2.28)
	\$50k - \$74,9K	2.22 (1.47, 3.34)			1.88 (1.45, 2.43)
Education (College degree-more)	HS/GED or less	1.94 (1.43, 2.63)		1.41 (1.07, 1.85)	
	1-3 years after HS	1.60 (1.21, 2.11)	1.32 (1.04, 1.67)	1.31 (1.04, 1.64)	
Self-Identifies Race-ethnicity (NH White)	NH Black	1.39 (1.04, 1.85)		0.62 (0.45, 0.85)	
	Hispanic/Latine				
Insurance coverage (yes)					4.31 (3.18, 5.85)

Conclusions

- About 45% of adults engaging in heavy drinking report at least one barrier to healthcare utilization.
- Among US adults who engage in heavy drinking,
 - 23.6% reported financial barriers to care
 - 18.3% reported attitudinal barriers to care
 - 15.7% reported competing social roles as a barrier to healthcare
 - 13.4% reported structural barriers to care

Conclusions

Female participants were more likely to report competing social roles, attitudinal, and financial barriers to healthcare than male participants.

Our research aims to inform females who engage in heavy drinking in the US, including those participating in the *All of Us* Research Program, and Public Health authorities, about need to design tailored interventions and strategies (e.g., childcare options) that strengthen support systems needed to reduce barriers in the cascade of alcohol use treatment.

Conclusions

Lower income (relative to those in the higher income subgroups), lower educational attainment (relative to attaining a college degree or higher) and being NH Black/African American (relative to being NH White) were associated with higher odds of reporting structural barriers.

Our research aims to inform individuals who engage in heavy drinking in the US, including those participating in the *All of Us* Research Program, and Public Health authorities on the need to reduce barriers to healthcare utilization as a strategy to:

- Improve screening,
- Facilitate placement of patients into the alcohol-use treatment continuum
- Reduce or prevent alcohol-use related comorbidities (e.g., cancer)
- Decrease disparities and the societal burden of alcohol use.

Acknowledgements

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- The *All of Us* Research Program is supported by the National Institutes of Health, Office of the Director: Regional Medical Centers: 1 OT2 OD026549; 1 OT2 OD026554; 1 OT2 OD026557; 1 OT2 OD026556; 1 OT2 OD026550; 1 OT2 OD026552; 1 OT2 OD026553; 1 OT2 OD026548; 1 OT2 OD026551; 1 OT2 OD026555; IAA #: AOD 16037; Federally Qualified Health Centers: HHSN 263201600085U; Data and Research Center: 5 U2C OD023196; Biobank: 1 U24 OD023121; The Participant Center: U24 OD023176; Participant Technology Systems Center: 1 U24 OD023163; Communications and Engagement: 3 OT2 OD023205; 3 OT2 OD023206; and Community Partners: 1 OT2 OD025277; 3 OT2 OD025315; 1 OT2 OD025337; 1 OT2 OD025276.

Collaborators

- Kaitlyn Swacil – University of Florida
- Catherine Woodstock Striley – University of Florida
- Linda Cottler – University of Florida
- Milton Eder - University of Minnesota
- Irvin Pedro Cohen- Local Initiatives Support Corporation - Jacksonville
- Catalina Lopez-Quintero – University of Florida

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Thank you



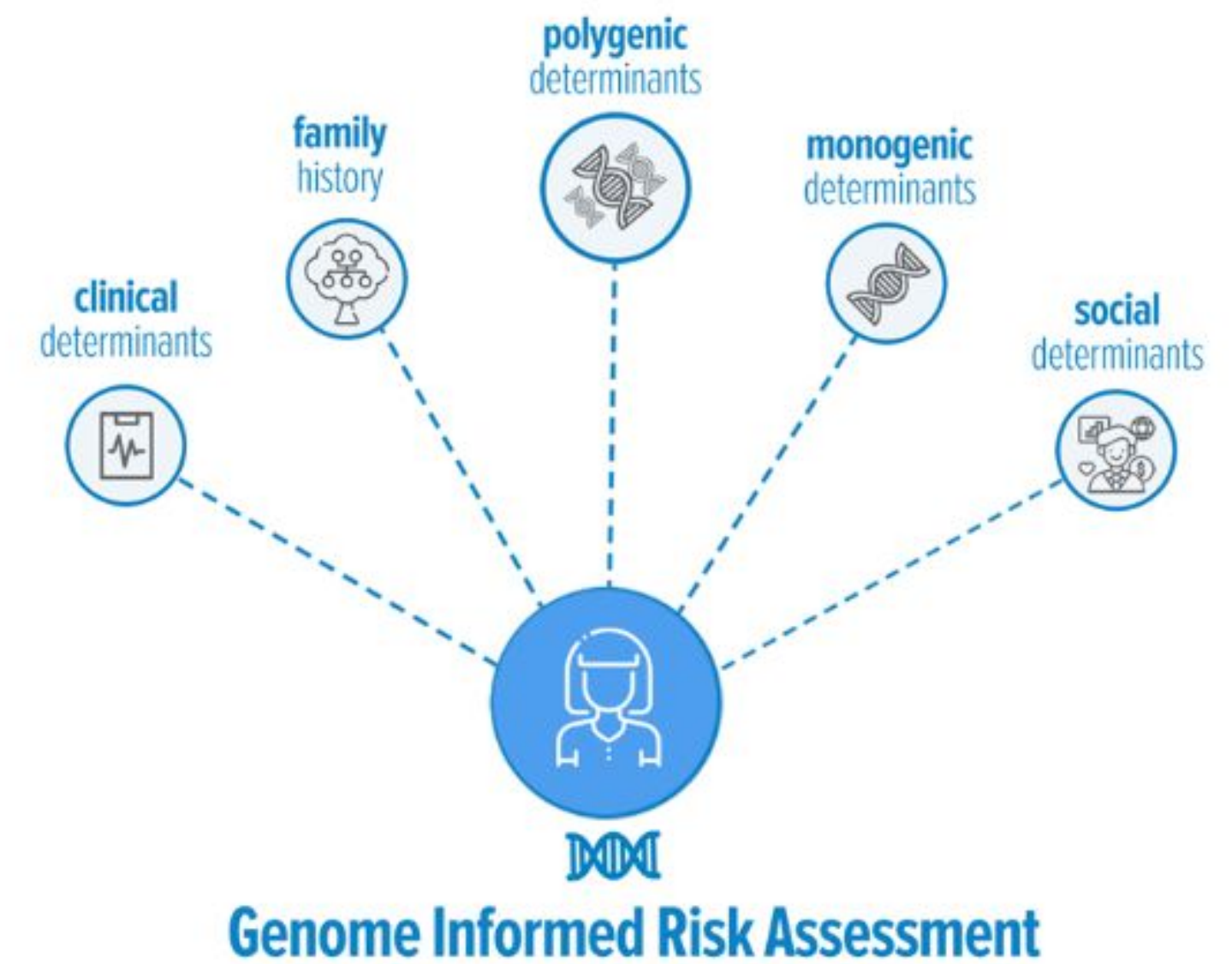
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DNA, Diverticulitis, and Diversity: Evaluating transferability of polygenic risk scores

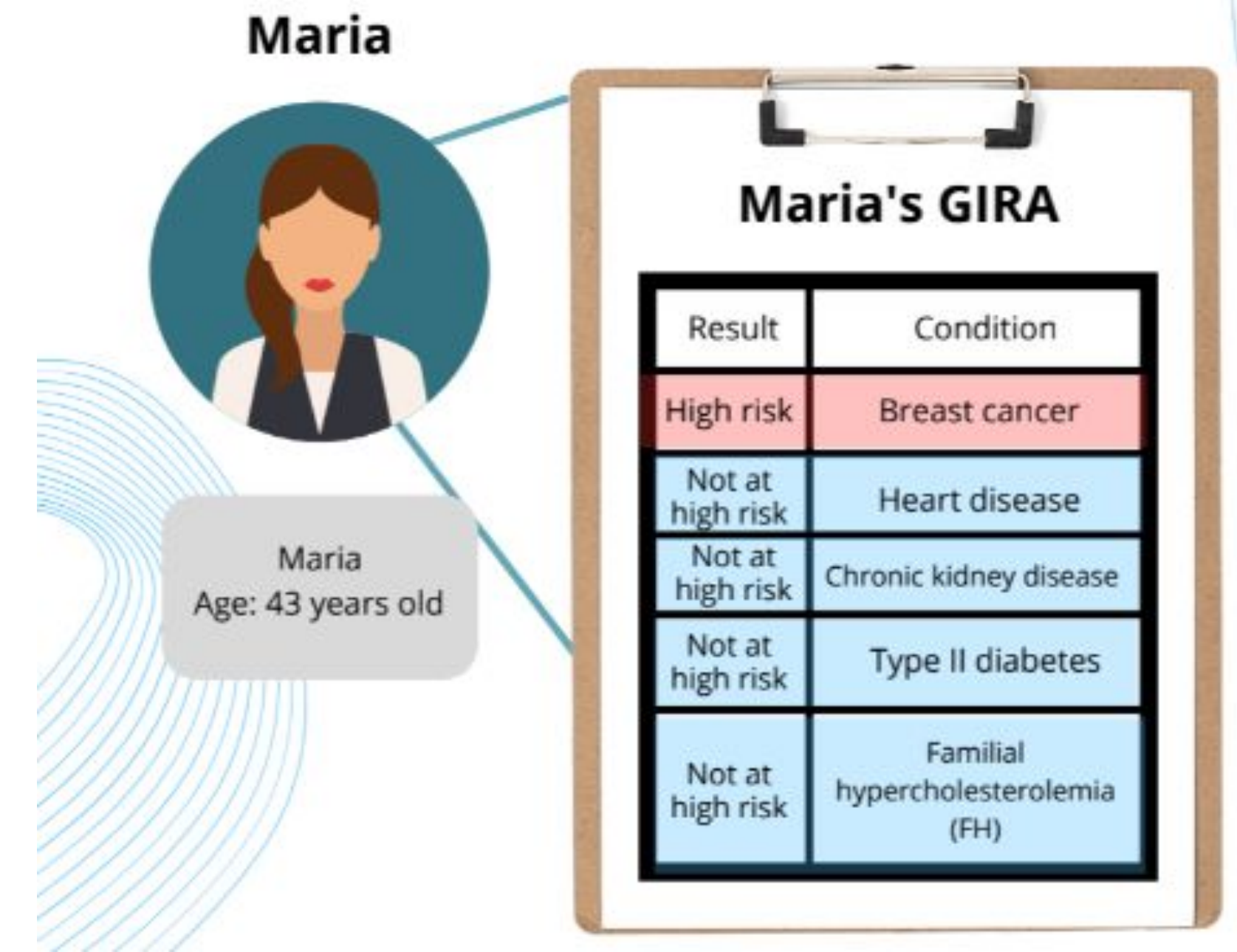
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Christopher Neylan MD, Jamie Robinson MD PhD, Eric Gamazon PhD,
Alexander Hawkins MD MPH

Polygenic Risk Scores (PRS)

- DNA patterns → personalized risk prediction
- Envisioned applications
 - Cancer screening
 - Disease surveillance
 - Motivating lifestyle behavior change

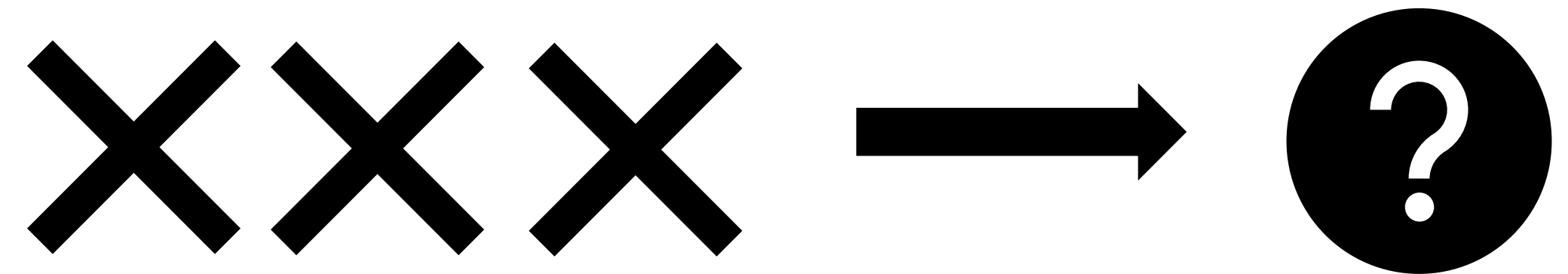
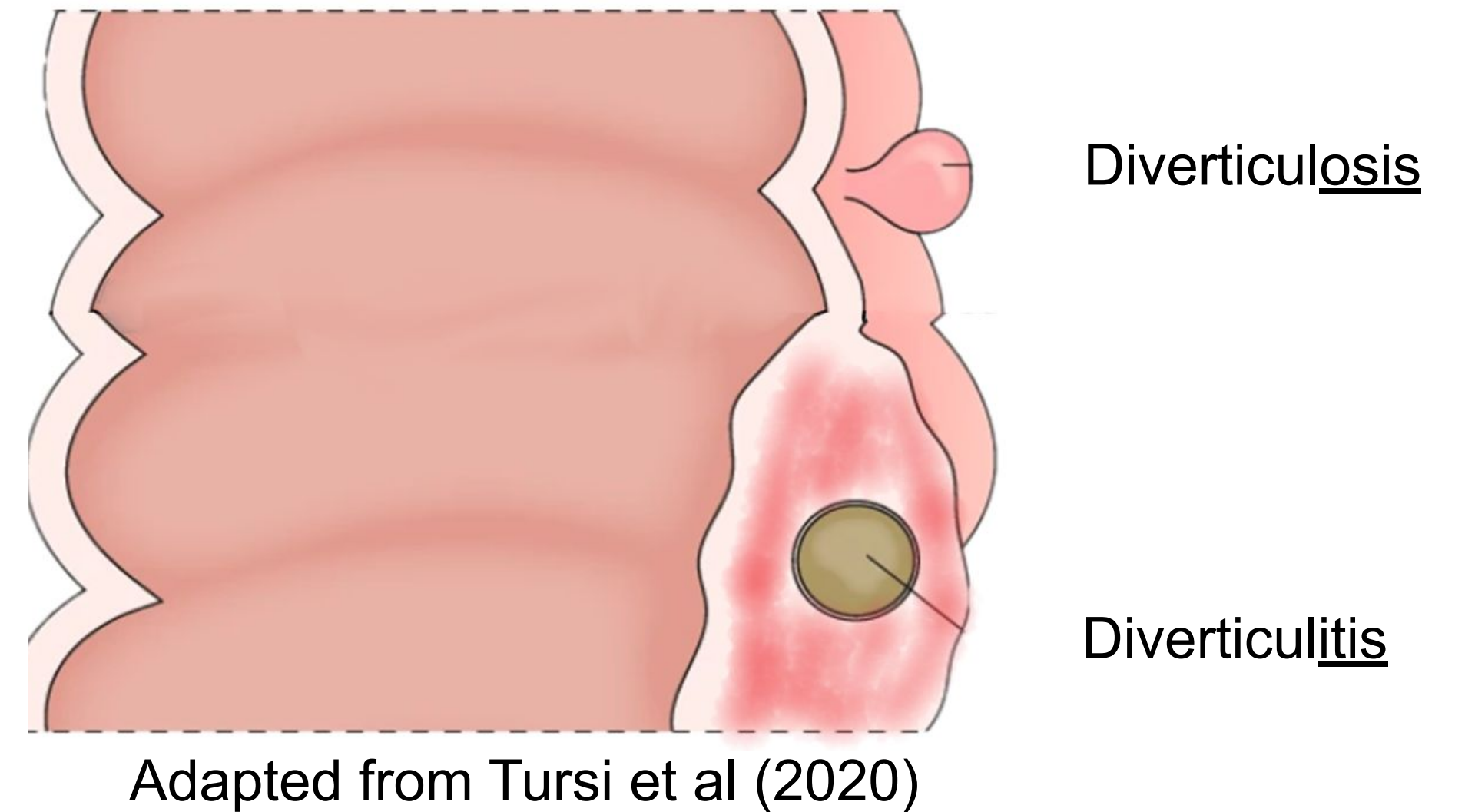


Genome Informed Risk Assessment from the
eMERGE network
Linder et al (2023)



Diverticular disease

- Diverticula = outpouching of the intestinal wall
- Severity spectrum
- Paradigms of patient selection for operative intervention

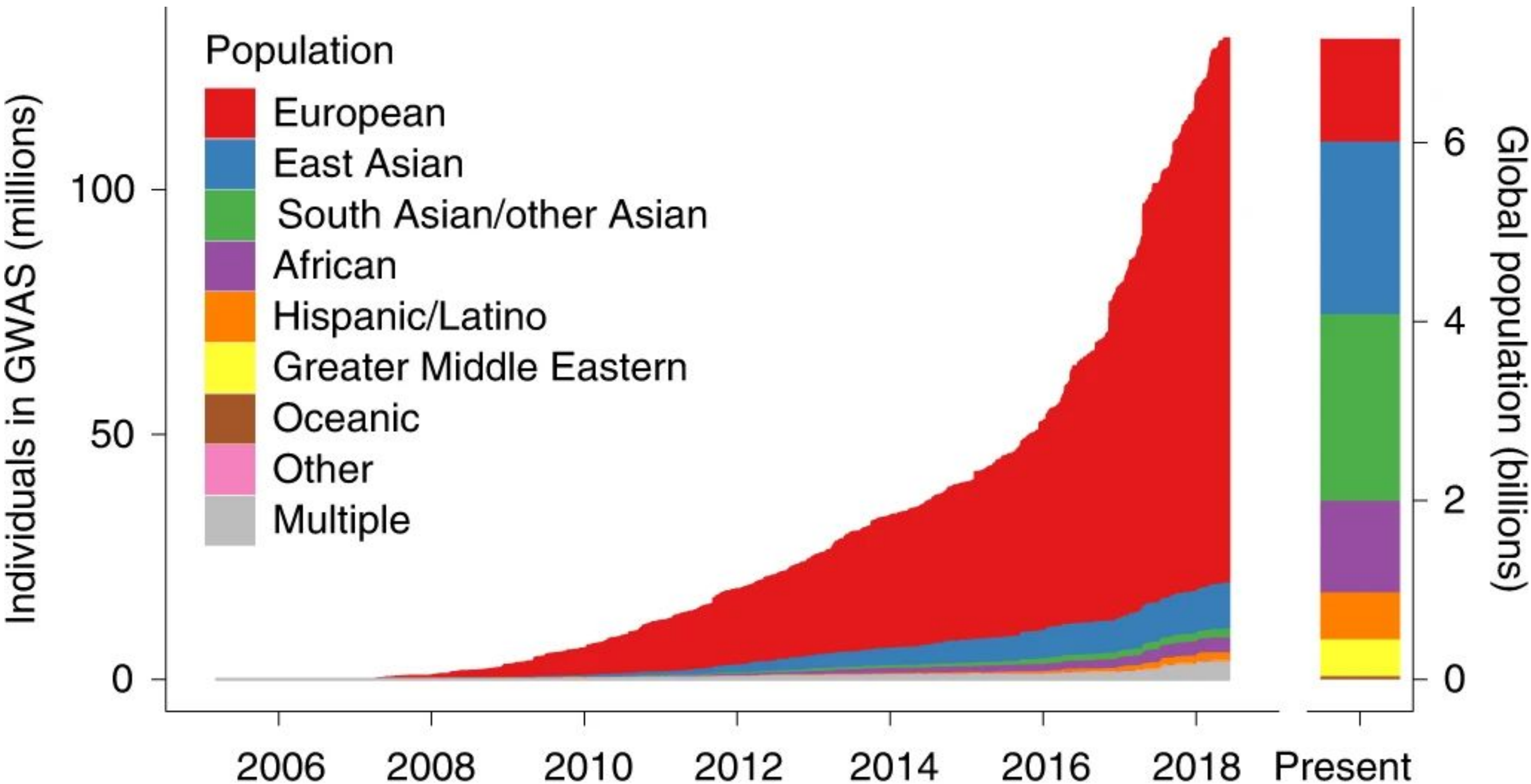


“The decision to recommend elective sigmoid colectomy after recovery from uncomplicated acute diverticulitis should be individualized” (American Society of Colorectal Surgeons Clinical Practice Guidelines 2023)

All of Us Research Program

Core Value: “Participants reflect the rich diversity of the United States”

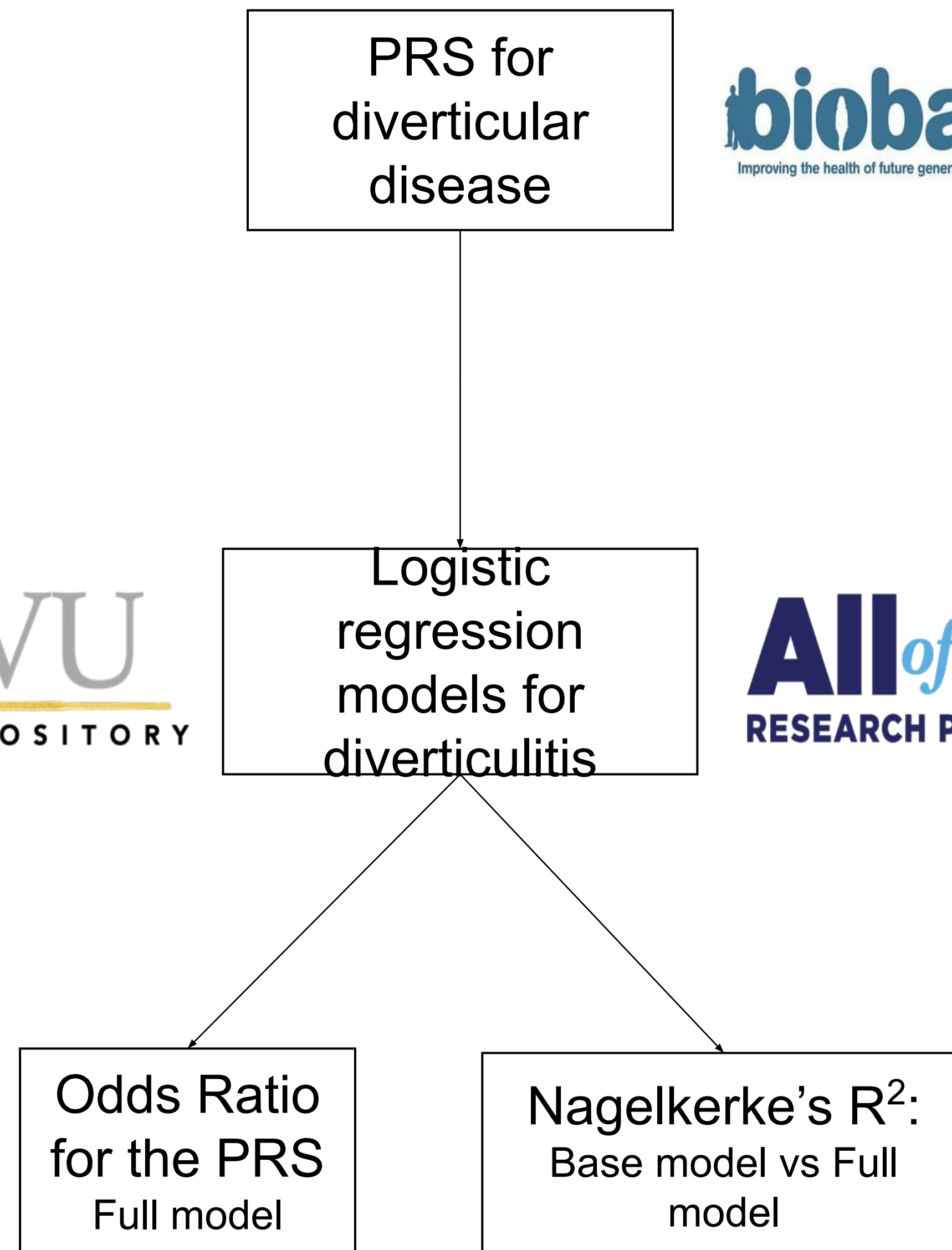
Ancestry of GWAS participants over time, as compared with the global population.



Martin et al (2019)

Methods: Logistic Regression

- Diverticulitis PRS: 44 variants
- Base model covariates
 - Age, sex at birth, BMI, ever smoking history, genetic PC1-10
- Full model covariates
 - PRS + Base model



Genetic Similarity

- Genetic ancestry $\neq$ distinct biologic groups
- 1KG-____-like
 - “Individuals with genetic similarity by principal components analysis to the 1000 Genome Project (1KG) samples who were artificially assigned a label of _____”

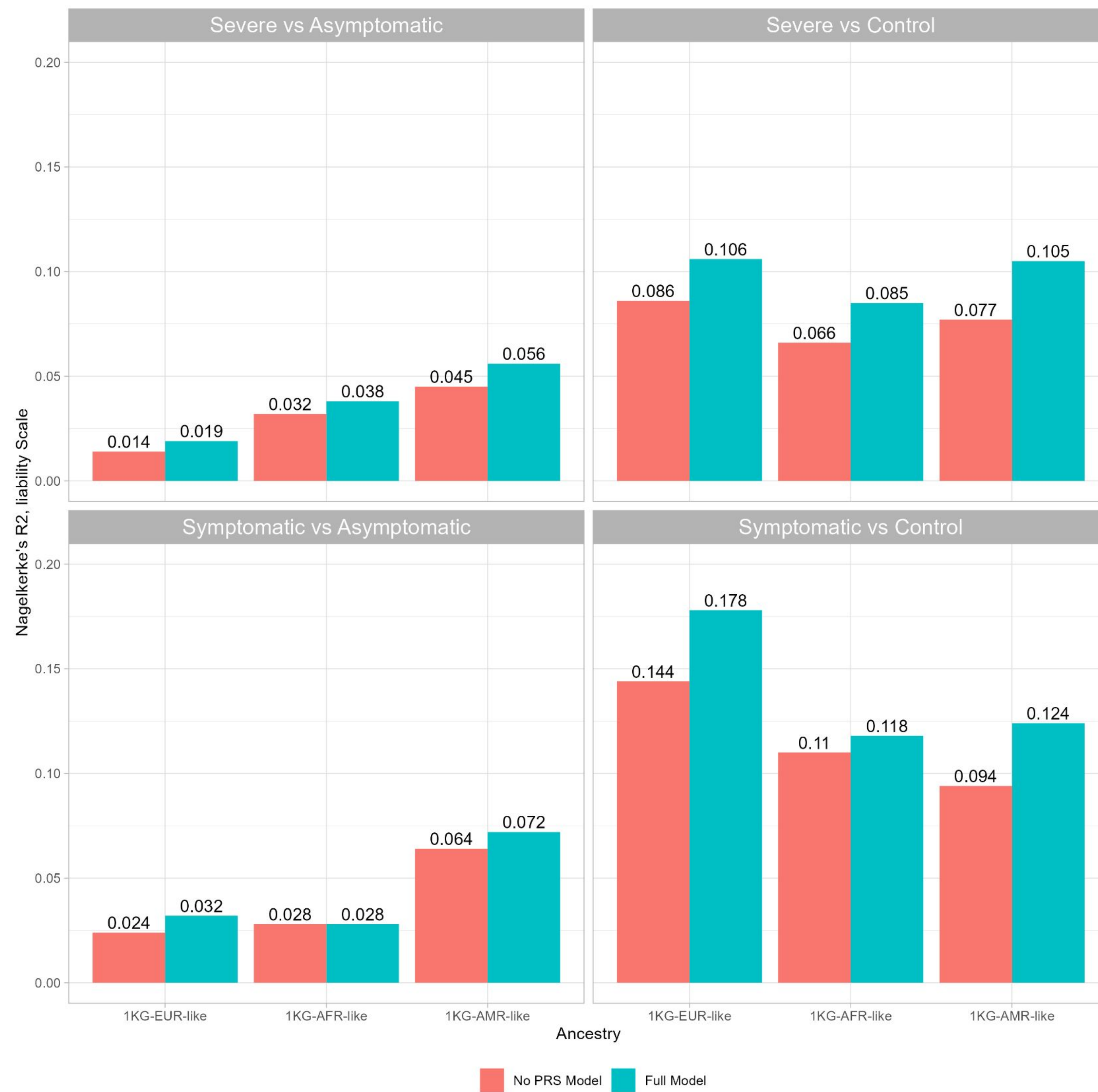
<i>gnomAD metadata label</i>	<i>1000Genomes reference samples</i>	<i>Terminology in this study</i>
EUR (European)	GBR FIN CEU IBS TSI	1KG-EUR-like
AFR (African)	YRI ASW ACB ESN GWD LWK MSL	1KG-AFR-like
AMR (Admixed American)	PEL CLM MXL PUR	1KG-AMR-like

Results

Logistic Regression Odds Ratios: Severe Diverticulitis*

	<i>1KG-EUR-like</i>	<i>1KG-AFR-like</i>	<i>1KG-AMR-like</i>
PRS	1.65 [1.45 - 1.88]	1.6 [1.27 - 2.02]	1.86 [1.42 - 2.42]

* Model covariates not shown: Age, sex at birth, BMI, ever smoking history, genetic principal components 1-10. Values represent odds ratio [95% CI] for 1SD increase in PRS relative to reference group of controls without diverticular disease



Transferable? Yes and no

- A polygenic risk score for diverticulitis remained associated with severe disease presentations in a diverse cohort
- Modest magnitude of improvements to the model

Call to action

- Well-powered multi-ancestry genome-wide association studies

Acknowledgments

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- *All of Us* User Support Team
- National Institute of Diabetes and Digestive and Kidney Diseases Medical Student Research Training Program
- Vanderbilt Institute for Clinical and Translational Research



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HEALTHCARE ACCESS AND UTILIZATION AMONG TRANSGENDER AND GENDER DIVERSE ADULTS

AN ANALYSIS USING THE *ALL OF US* RESEARCH PROGRAM

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April 2023

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UMass Chan
MEDICAL SCHOOL

DISCLOSURES

- None of the authors have anything to disclose

A NOTE ON TERMINOLOGY

- Sex ≠ Gender!
- TGD: Transgender and Gender Diverse
- NB: Non-Binary
- AFAB/AMAB: Assigned Female/Male at Birth

DISSATISFACTION WITH THE HEALTHCARE SYSTEM

- Lower rates of satisfaction with healthcare among TGD adults
- More barriers to healthcare: discrimination, employment, awareness

Ferrucci KA, Walubita T, Beccia AL, et al. Health Care Satisfaction 2018;

Gonzales G, Henning-Smith C. Barriers to Care 2017.

THE TGD UMBRELLA: LUMPING EVERYONE INTO ONE GROUP

- The “Transgender Umbrella”
- Small data sets → Lump TGD groups for convenience
- Limits understanding of differences within TGD group

THAT'S WHERE THE *ALL
OF US* RESEARCH
PROGRAM COMES IN!

Large Sample Size



Detailed Sex And
Gender Questionnaires



Excellent Data To
Address This Issue!

Controlled
Tier v7

Healthcare Access and Utilization Survey

```
graph TD; A[Healthcare Access and Utilization Survey] --> B[Ability to Afford Care]; A --> C[Rates of Seeing Doctor, Feeling Respected]; D[The Basics Survey] --> E[Gender Identity, Race, Education];
```

- Ability to Afford Care

Access

- Rates of Seeing Doctor
- Feeling Respected

Utilization

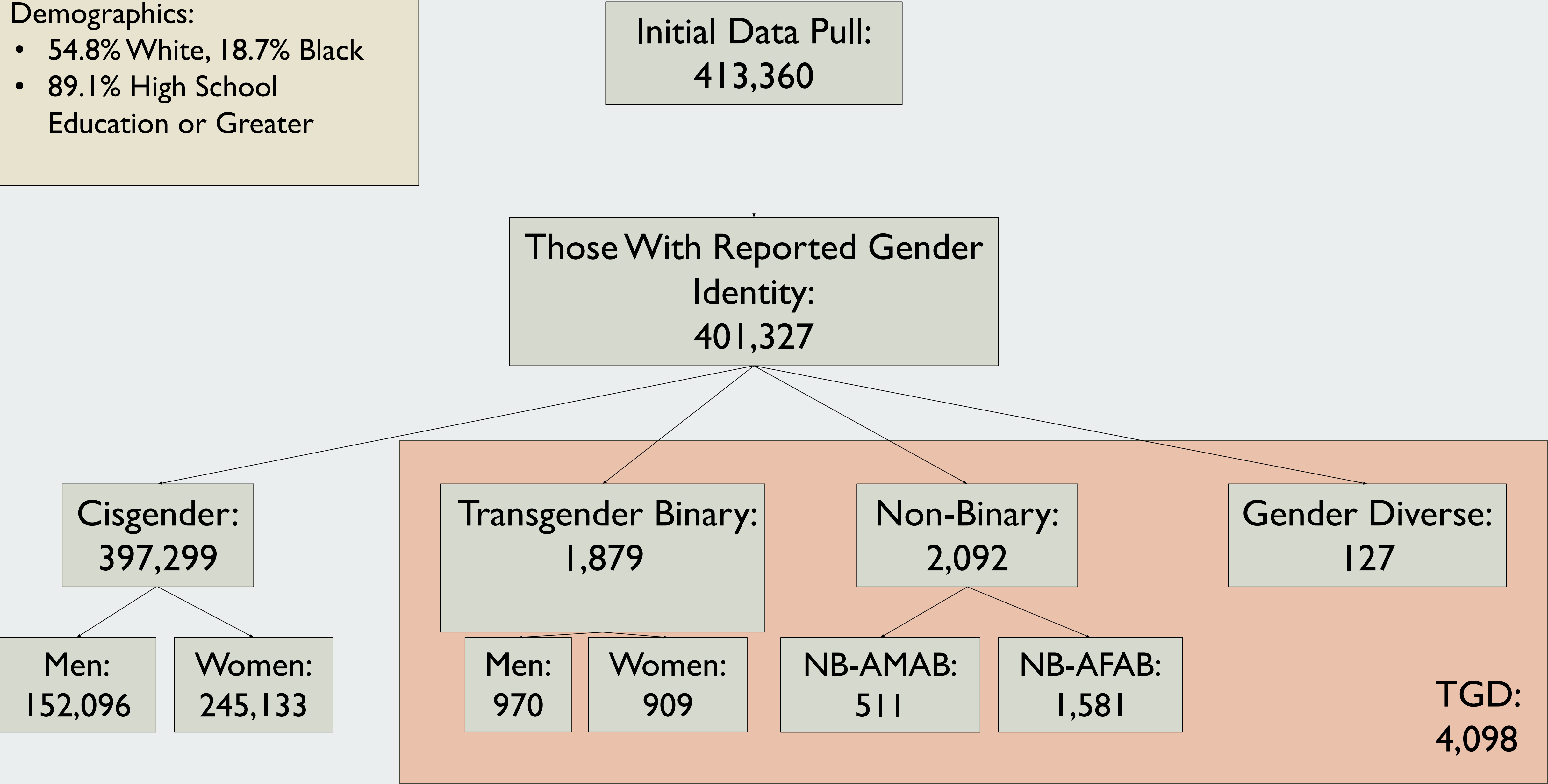
The Basics Survey

- Gender Identity
- Race
- Education

Demographics

Demographics:

- 54.8% White, 18.7% Black
- 89.1% High School Education or Greater



HOW WE ANALYZED THE DATA

- R version 4.3.1
- Descriptive statistics
- Bivariate differences via Chi-Square testing
- Goal for future analysis: Multivariate modeling

HEALTHCARE ACCESS AND UTILIZATION DIFFERED AMONG GROUPS

- Inability to afford healthcare: Gender Diverse (18.6%), and Non-Binary groups (14.2% NB-AFAB, 10.2% NB-AMAB)
 - 4.9% for cisgender men and 6.5% for cisgender women; $P < 0.001$
- Rates of speaking to a doctor in the past year: Gender Diverse (72.3%)
 - Other groups 78.9-84.2%; $P < 0.001$
- Rates of feeling respected by providers: Cisgender (96.1% Women, 97.0% Men).
 - 83.0% for NB-AFAB, 89.6% NB-AMAB; $P = 0.0432$

CONCLUSION AND IMPACT

- Healthcare access and utilizations varies between gender identities
- Limited by lack of multivariate model
- *All of Us* data shows that TGD people make up a significant portion of patients in our healthcare system
- Parsing out disparities is necessary to improve care

ACKNOWLEDGEMENT

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