Ethnoracial disparities in childhood growth trajectories in Brazil

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Introduction

- Birth weight and infant growth are important markers of child health and future well-being [1-4].

- Race is a social construct that functions as an essential tool of racism, to separate and create social hierarchy, which has produced and reinforced segregation, differential quality and access to health care and unequal distributions of social determinants of health [5,6].

- The ethnoracial inequities affecting mothers can also impact childhood outcomes [7].

Objective

- We aim to investigate child growth by maternal ethnoracial group using a nationwide Brazilian database.

Methods

- Database consisted of a population-based retrospective cohort;
- Linked data from the CIDACS Birth Cohort and the Food and Nutrition Surveillance System;

- The data consisted of children aged 0 to 60 months, born between January 2003 to November 2015, and followed up from January 2008 until December 2017.
- Approved by the institutional review boards of the Collective Health Institute of the Federal University of Bahia (reference number 41695415.0.0000.5030) and the School of Nutrition, Federal University of Bahia (reference number 67205423.6.0000.5023).

Statistical analysis

- The prevalence of stunting and underweight were calculated within each ethnoracial group;

- To estimate childhood growth trajectories, we employed mixed effect models, with maternal self-declared race/skin color as the main exposure variable and sex as a covariate;

- All models were adjusted for maternal age, education level, and marital status.

Results

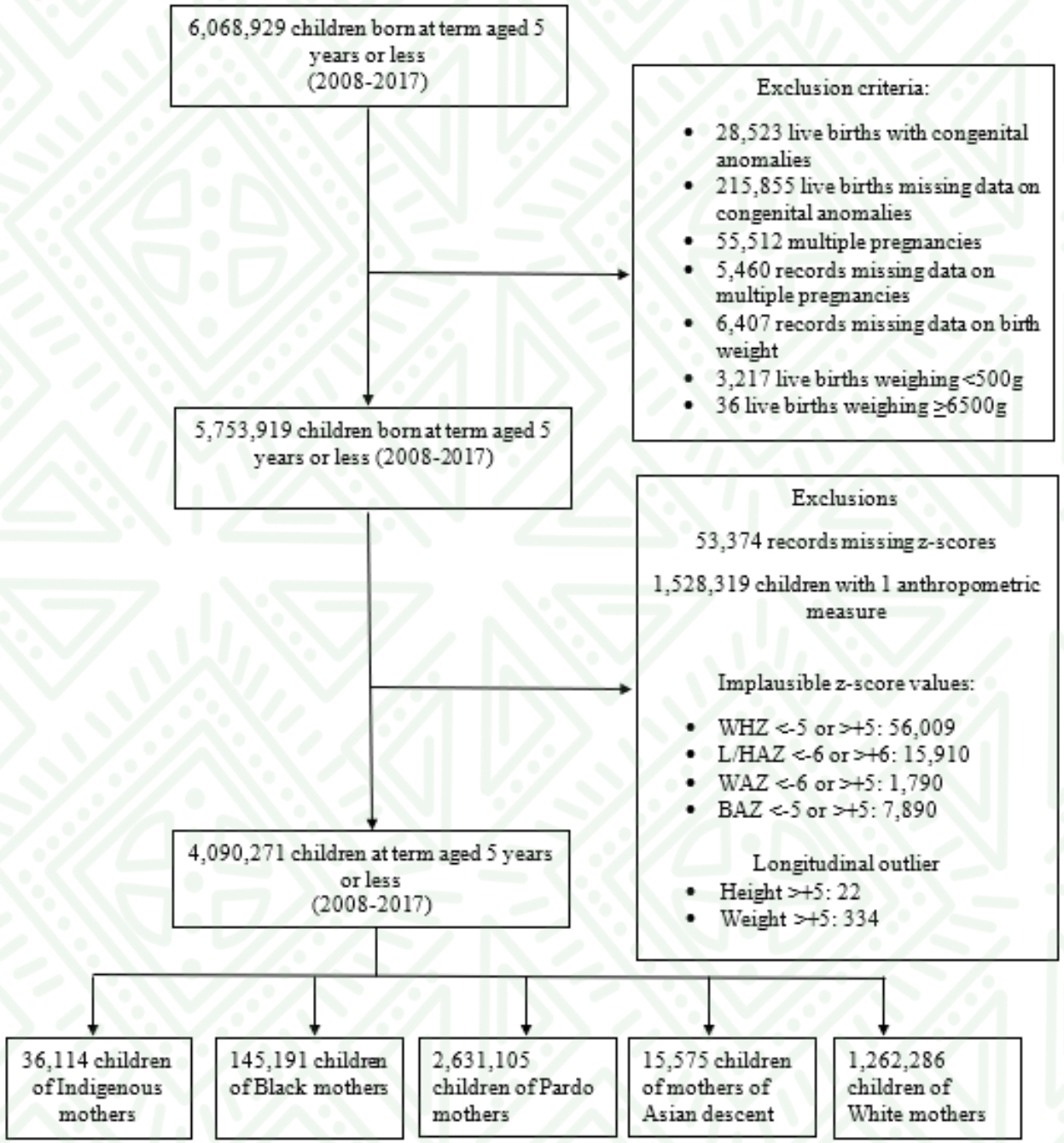

Figure 1. Flowchart detailing database construction and relevant exclusion criteria.

Results

Table Supl. 1: Prevalence of child growth indicators according to mother's race/skin color. Brazil, 2008-2017.

	L/HAZ									
	Children of White mothers	%	Children of Asian descent mothers	%	Children of Black mothers	%	Children of Pardo mothers	%	Children of Indigenous mothers	%
Severe stunting	181822	2.76	2730	3.74	23127	3.56	478034	4.05	13465	9.01
Moderate stunting	385439	5.85	5292	7.25	44423	6.85	917229	7.77	26509	17.73
Adequate	6015902	91.38	64981	89.01	581259	89.59	10407386	88.18	109500	73.26
Total	6583163	100.00	73003	100.00	648809	100.00	11802649	100.00	149474	100.00
	WAZ									
	Children of White mothers	%	Children of Asian descent mothers	%	Children of Black mothers	%	Children of Pardo mothers	%	Children of Indigenous mothers	%
Severe underweight	27331	0.42	457	0.63	4087	0.63	77204	0.65	1666	1.11
Moderate underweight	135609	2.06	2196	3.01	18518	2.85	368674	3.12	7157	4.79
Adequate	6003845	91.20	66190	90.67	590412	91.00	10732755	90.94	136901	91.59
Overweight	416378	6.32	4160	5.70	35792	5.52	624016	5.29	3750	2.51
Total	6583163	100.00	73003	100.00	648809	100.00	11802649	100.00	149474	100.00

Results

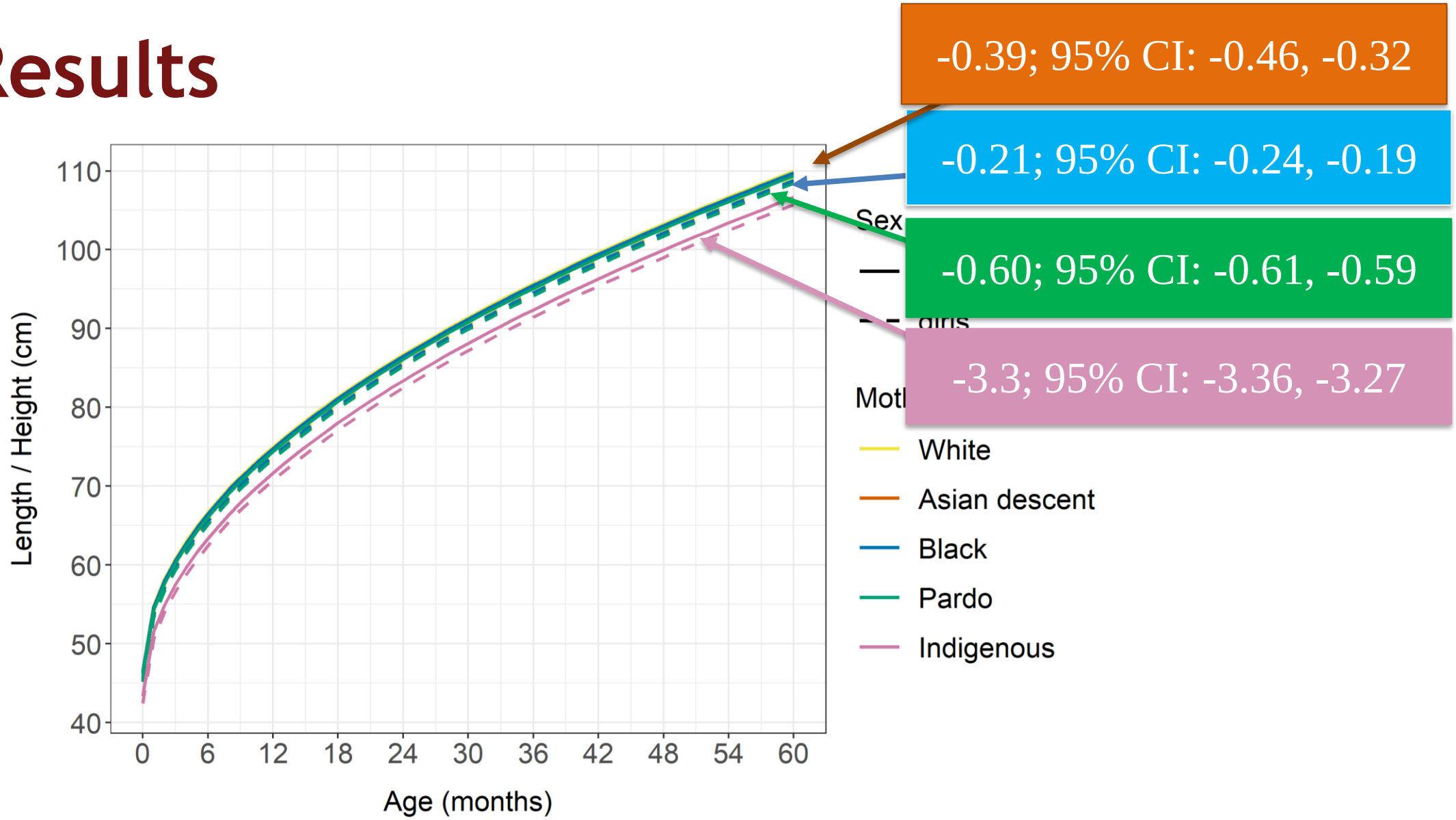

Figure 3: Estimated mean height according to sex and mother's race / skin color. Brazil, 2008-2017.

Results

-0.22; 95%CI: - 0.24, -0.19

-0.15; 95% CI: -0.16, -0.14

-0.25; 95% CI: -0.26, -0.25

-0.74; 95% CI: -0.76, -0.72

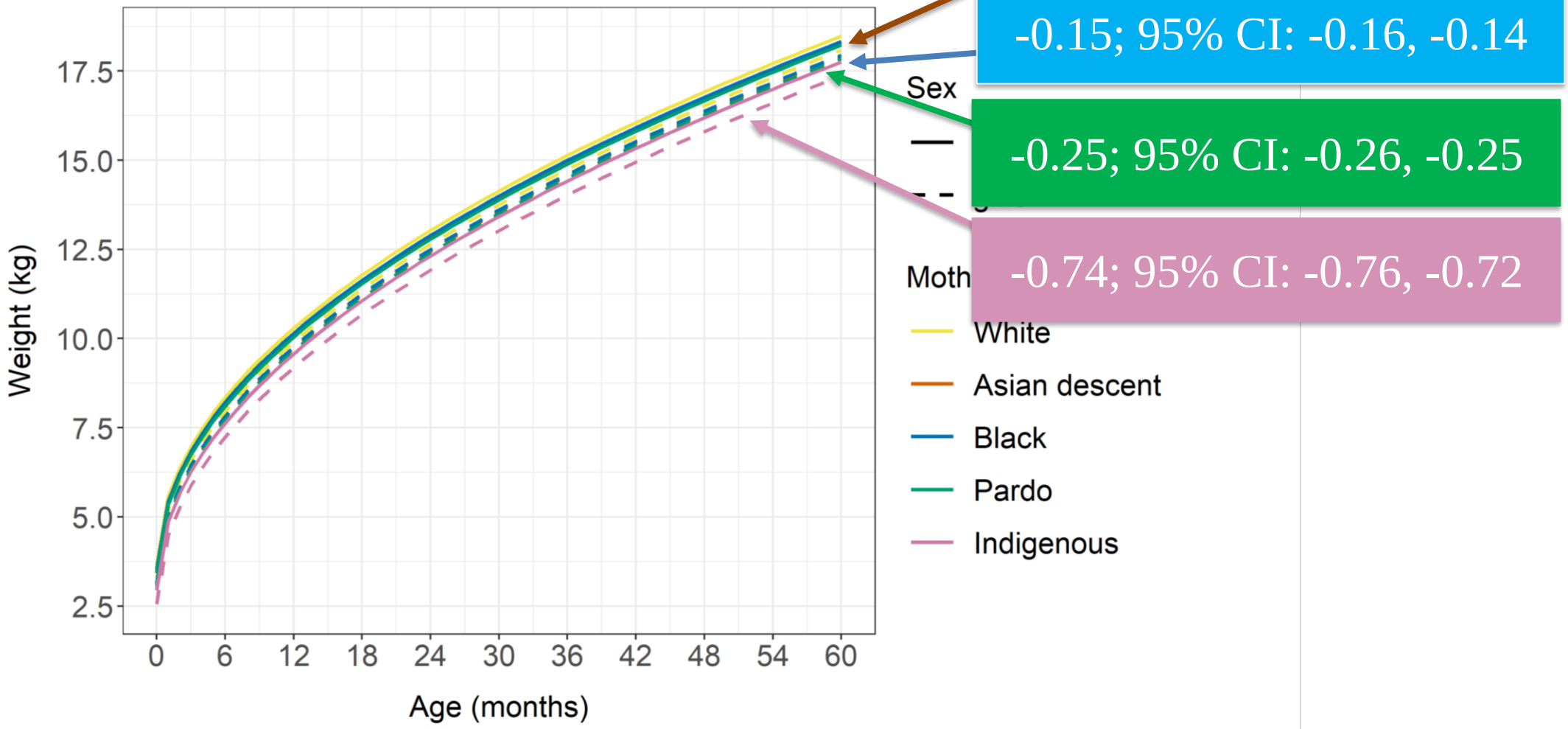

Figure 2: Estimated mean weight according to sex and mother's race / skin color. Brazil, 2008-2017.

Results

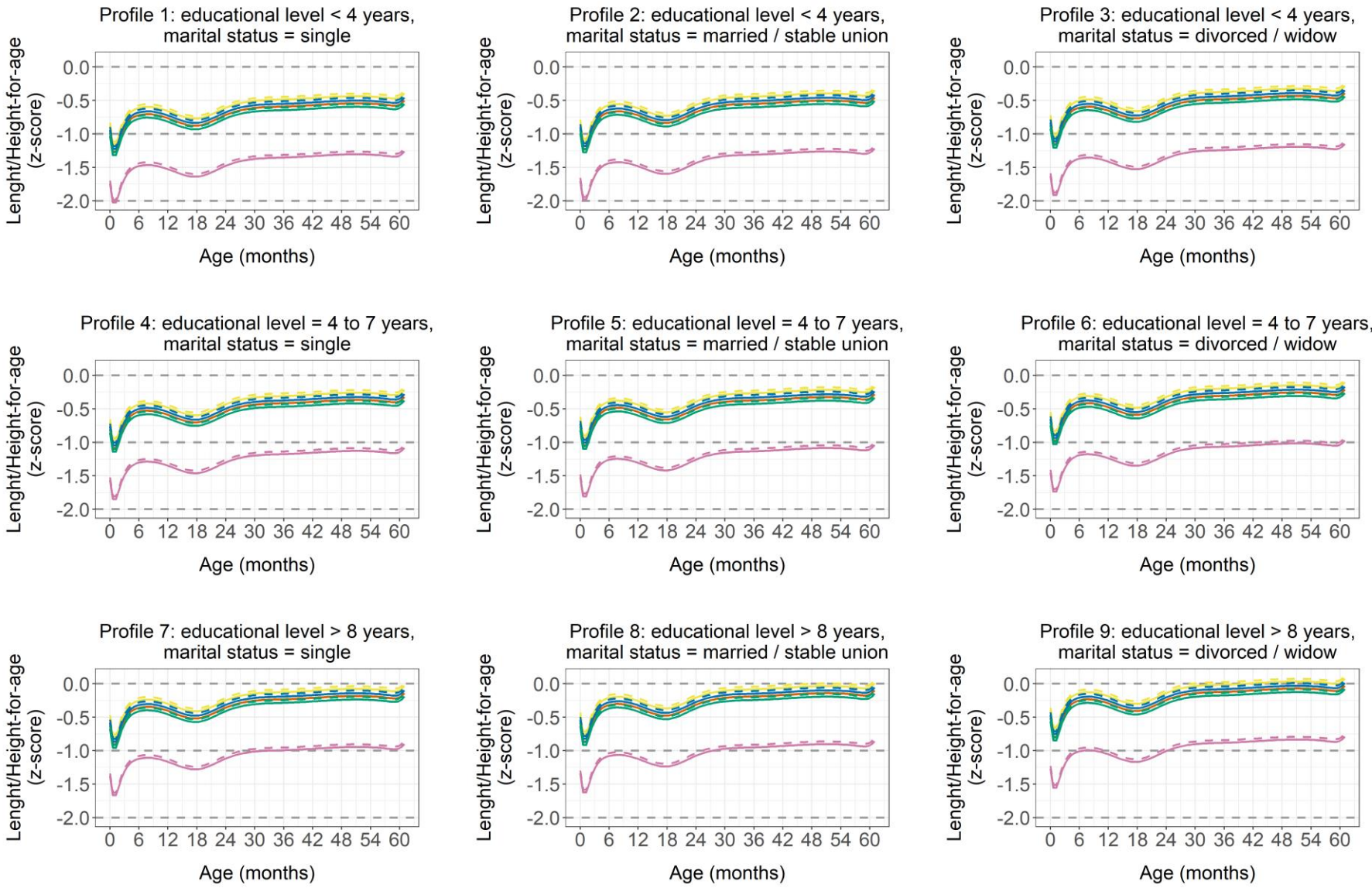

Figure 4: Estimated mean curves for length/height-for-age z-scores, according to mother's age, educational level, and marital status. Brazil, 2008-2017.

Results

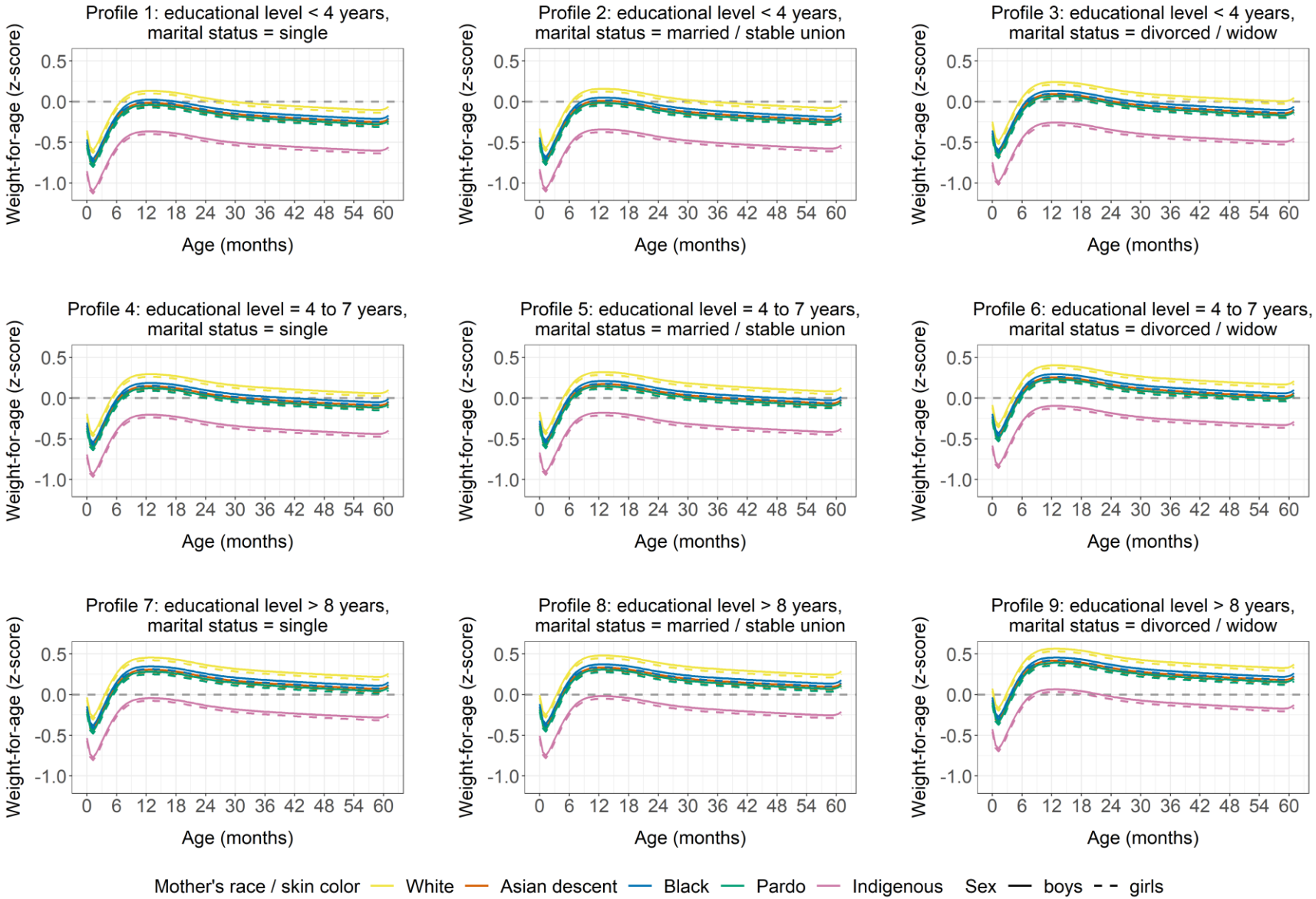

Figure 5: Estimated mean curves for weight-for-age z-scores model, according to mother's age, educational level, and marital status. Brazil, 2008-2017.

Conclusion

- Our growth models reinforce that even among the most socially disadvantaged population, ethnoracial disparities persist;

- Children of Indigenous mothers showed the most unfavorable outcomes compared to their White counterparts;

- Policy initiatives are needed to address systematic ethnoracial inequalities and to protect the health of children.

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Ethnoracial disparities in childhood growth trajectories in Brazil: a longitudinal nationwide study of four million children

Helena Benes Matos da Silva, Rita de Cássia Ribeiro-Silva, Juliana Freitas de Mello e Silva, Irina Chis Ster, Poliana Rebouças, Emanuelle Goes, Maria Yury Ichihara, Andrêa Ferreira, Julia M. Pescarini, Rosemeire Leovigildo Fiaccone, Enny S. Paixão & Maurício L. Barreto

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https://www.youtube.com/watch?v=QP17Lckpv1c

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CIDACS Nutrition Research Group

Thank you!

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