

Associations Between Socioeconomic Status and Birth Outcomes: Results from the Cebu Longitudinal Health and Nutrition Survey

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Introduction

- Research has connected low socioeconomic status (SES) with adverse birth outcomes¹
- These issues can be particularly prevalent in low and middle income countries
- These issues persist even when other factors are considered, emphasizing the effects of SES on maternal health

Methods

Study design and participants

- Data from Cebu Longitudinal Health and Nutrition Survey² in 1983 and 1984
- >3000 mother/infant dyads

Independent and dependent variables

- Predictor: SES³ (index of assets validated in Cebu)
- Outcomes: low birth weight (LBW), preterm birth (PTB), and birth complications

Statistical analysis

- Logistic regression
- Models adjusted for maternal age, maternal height, birth mode, and infant sex when significant

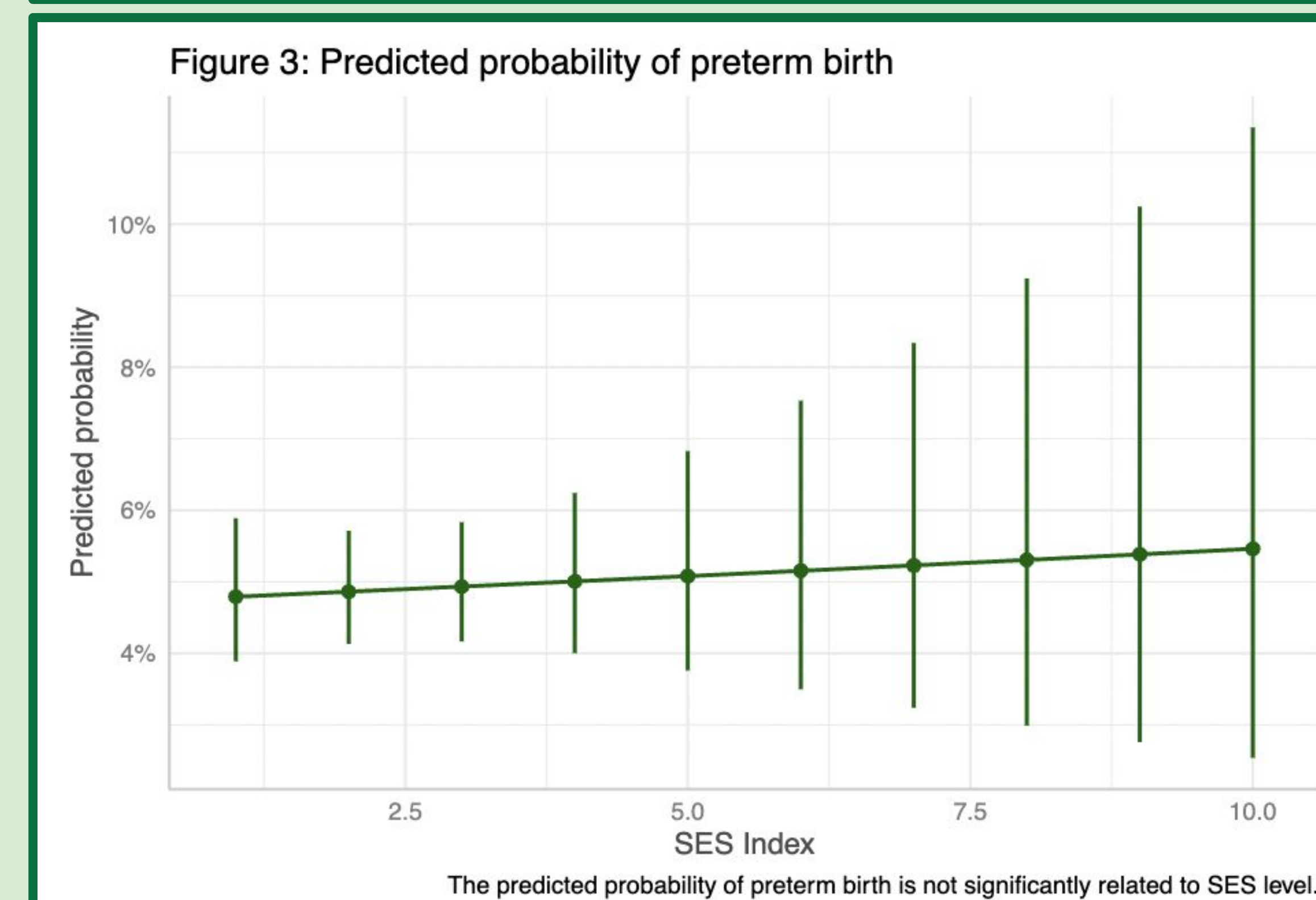
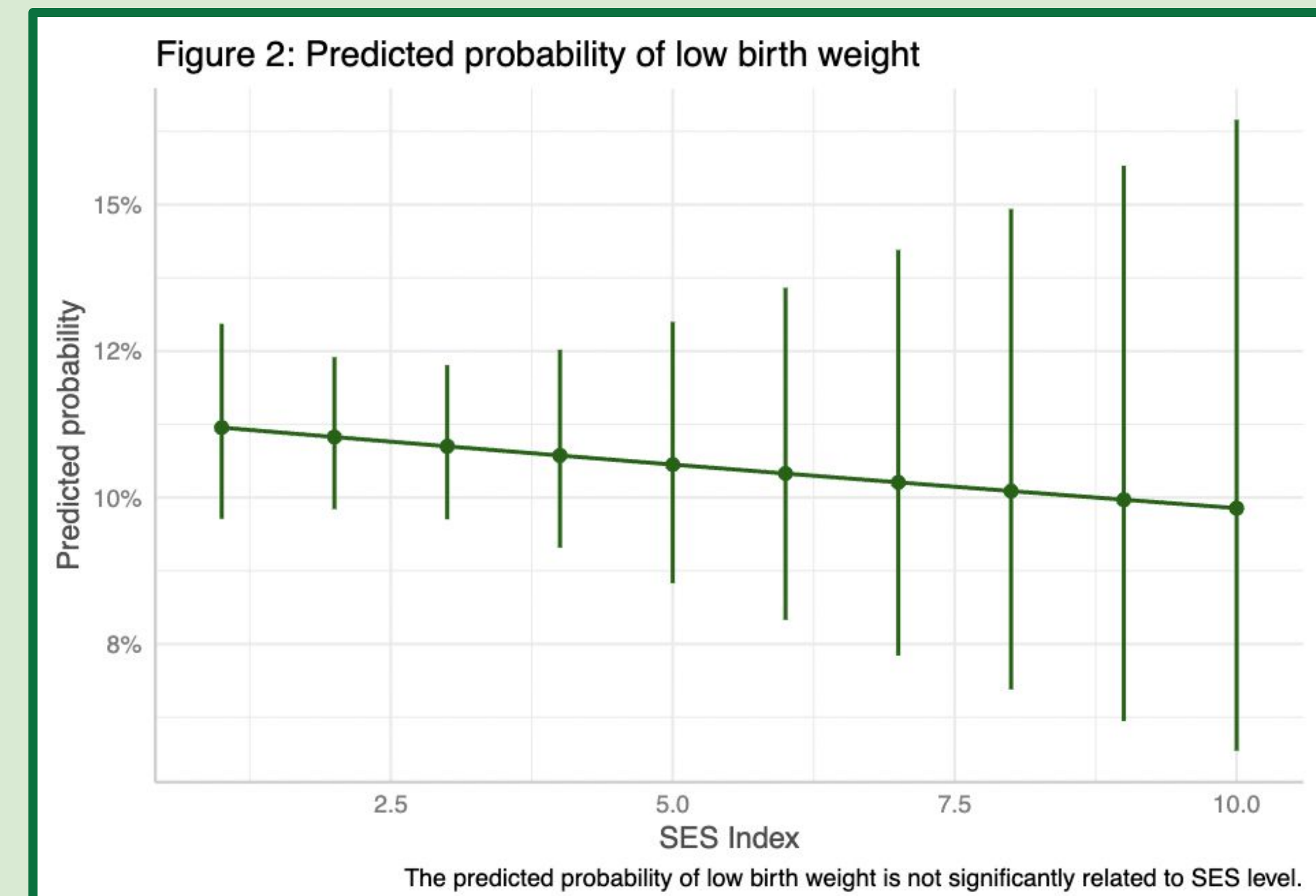
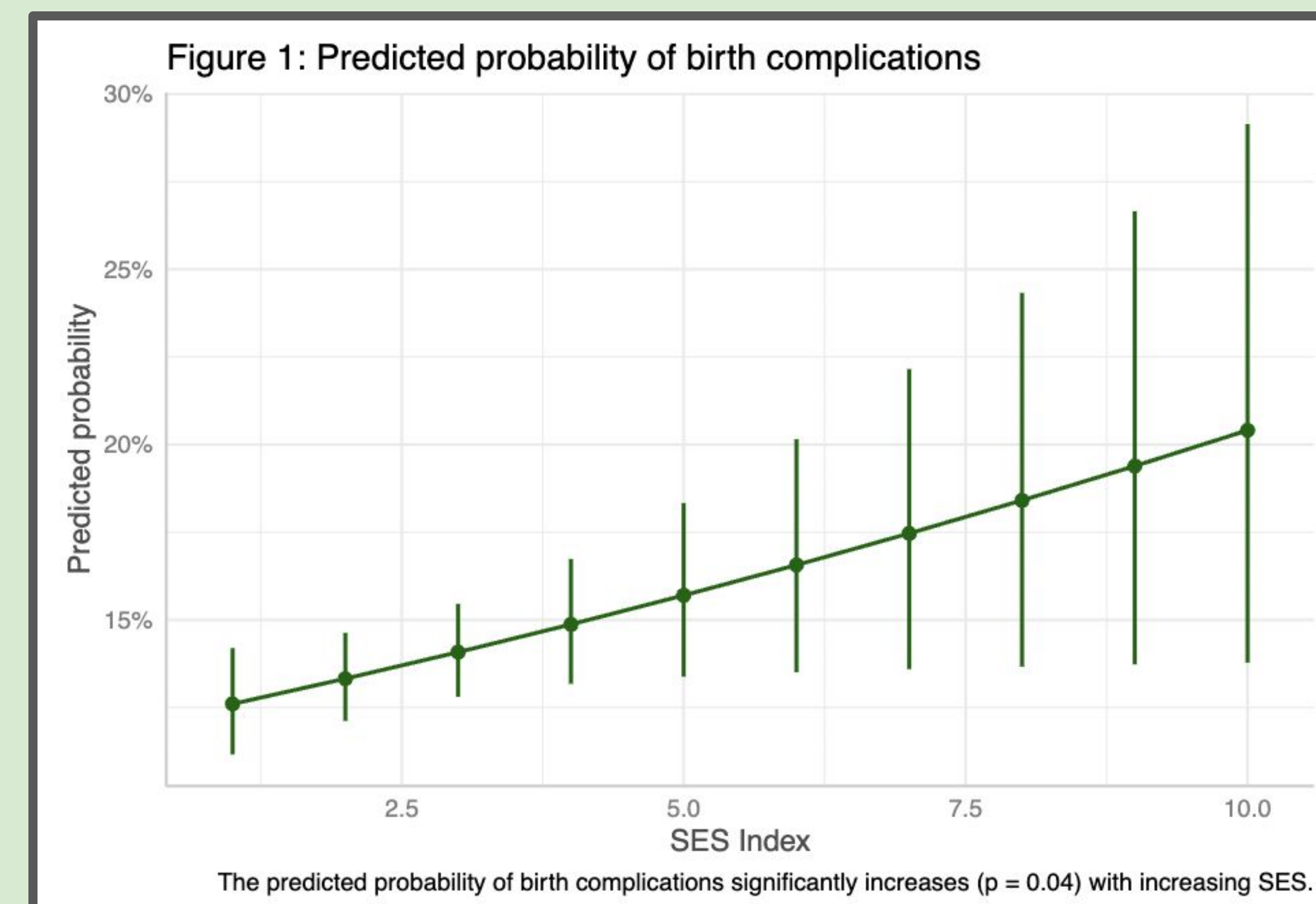
Results

Table 1: Logit Model Results

	Dependent variable:		
	Birth complications (1)	Low birth weight (2)	Preterm birth (3)
SES Index	0.064** (0.031)	-0.016 (0.039)	0.015 (0.052)
Delivery mode	2.847*** (0.270)		
Maternal height		-0.077*** (0.013)	-0.031* (0.017)
Sex of child		-0.218* (0.123)	
Maternal age		-0.032*** (0.011)	
Constant	-2.069*** (0.094)	10.570*** (1.899)	1.729 (2.516)
Observations	3,117	2,595	3,037
Log Likelihood	-1,206.419	-913.047	-595.681
Akaike Inf. Crit.	2,418.839	1,836.094	1,197.362

Note: *p<0.1; **p<0.05; ***p<0.01

Results



Discussion

- Increasing SES increases probability of birth complications, likely as a result of access to medical resources to identify complications (i.e. hospital vs. home birth setting)
- No significant relationships between SES and LBW or PTB
- SES only quantifies present measures of socioeconomic status, but health is affected by factors across the life course
- Dichotomous representations of birth outcomes do not represent the breadth of diversity between individuals, as LBW and PTB can have negative effects depending on exact range
- Low SES can negatively impact health outcomes on a global scale but is still context-specific

Conclusions

- With increasing SES, the probability of birth complications increases as well, contrary to our hypothesis
- Future directions may include analyses of risk for specific birth complications, as opposed to complications as a whole
- There is not a statistically significant correlation between SES and LBW and PTB, pointing to the importance of other factors in this relationship
- Future analyses could analyze birth weight and gestational age as continuous variables to better encapsulate range of variation and elucidate relationships with socioeconomic status

References

1. Blumenshine, Philip, Susan Egerter, Colleen J. Barclay, Catherine Cubbin, and Paula A. Braveman. 2010. "Socioeconomic Disparities in Adverse Birth Outcomes: A Systematic Review." *American Journal of Preventive Medicine* 39 (3): 263-72. <https://doi.org/10.1016/j.amepre.2010.05.012>.
2. Adair, Linda S, Barry M Popkin, John S Akin, David K Guilkey, Socorro Gultiano, Judith Borja, Lorna Perez, Christopher W Kuzawa, Thomas McDade, and Michelle J Hindin. 2011. "Cohort Profile: The Cebu Longitudinal Health and Nutrition Survey." *International Journal of Epidemiology* 40 (3): 619-25. <https://doi.org/10.1093/ije/dyq085>.
3. Desantis, Amy S., Christopher W. Kuzawa, and Emma K. Adam. 2015. "Developmental Origins of Flatter Cortisol Rhythms: Socioeconomic Status and Adult Cortisol Activity." *American Journal of Human Biology* 27 (4): 458-67. <https://doi.org/10.1002/ajhb.22668>