

Prenatal Exposure to Ambient PM_{2.5} and Early Childhood Growth Impairment Risk in East Africa

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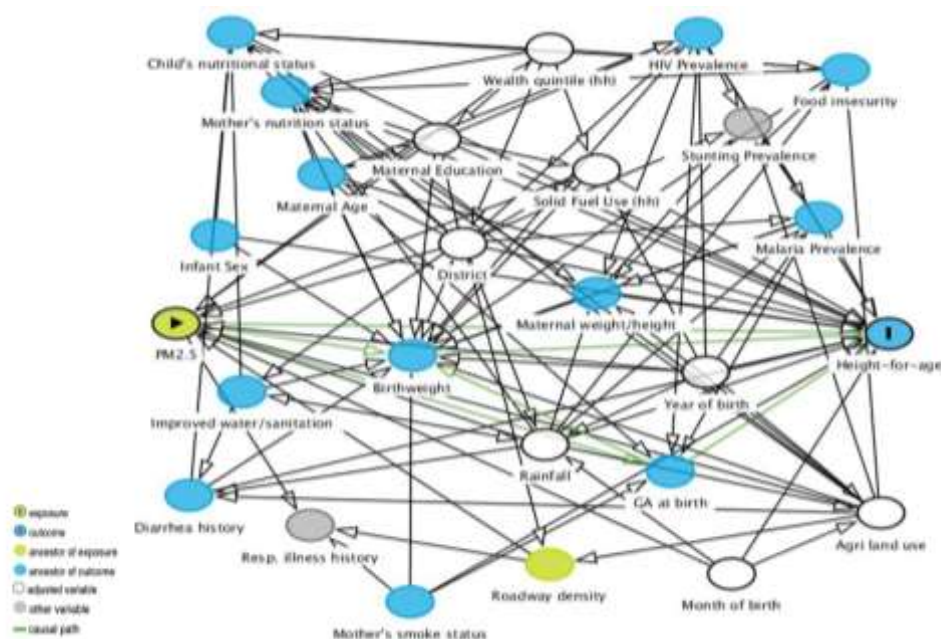


Figure S1. Directed Acyclic Graph showing the covariates that were selected as confounders because of their relationship with both the exposure (PM_{2.5}) and the outcome (height-for-age).

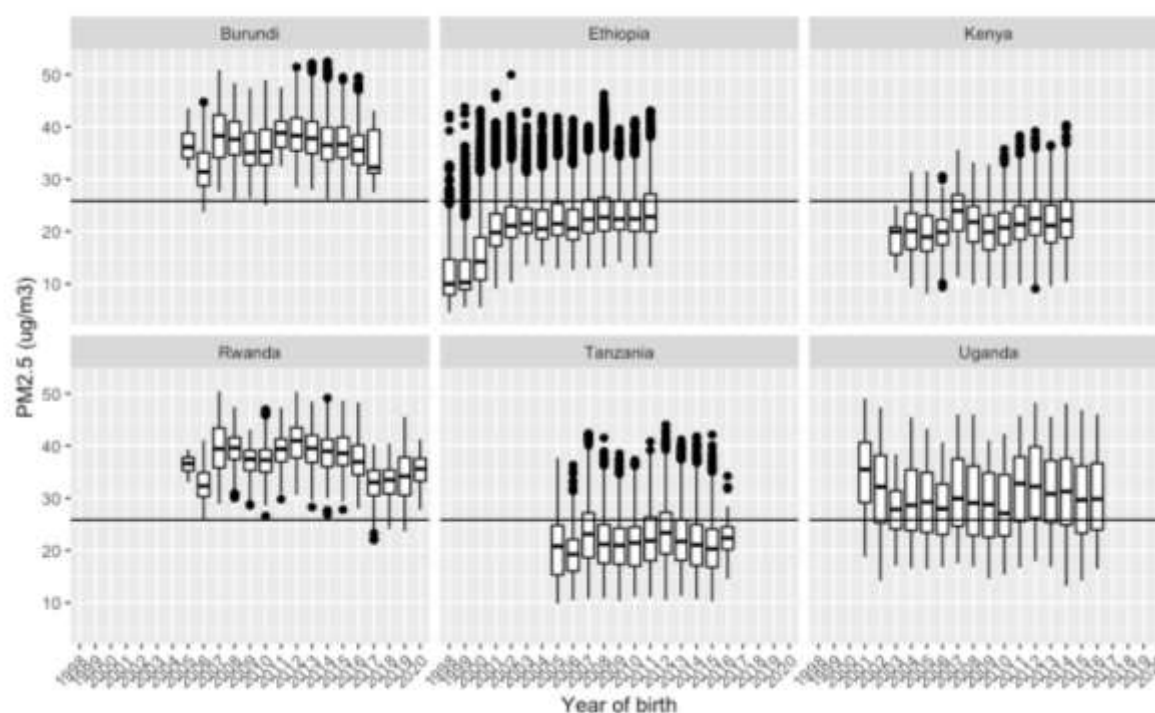


Figure S2. Long-term trend of prenatal PM_{2.5} exposures stratified by child's year of birth and by country. The horizontal black line shows the overall PM_{2.5} population average, (25.83 $\mu\text{g}/\text{m}^3$), five times above the WHO annual recommended level at 5 $\mu\text{g}/\text{m}^3$.

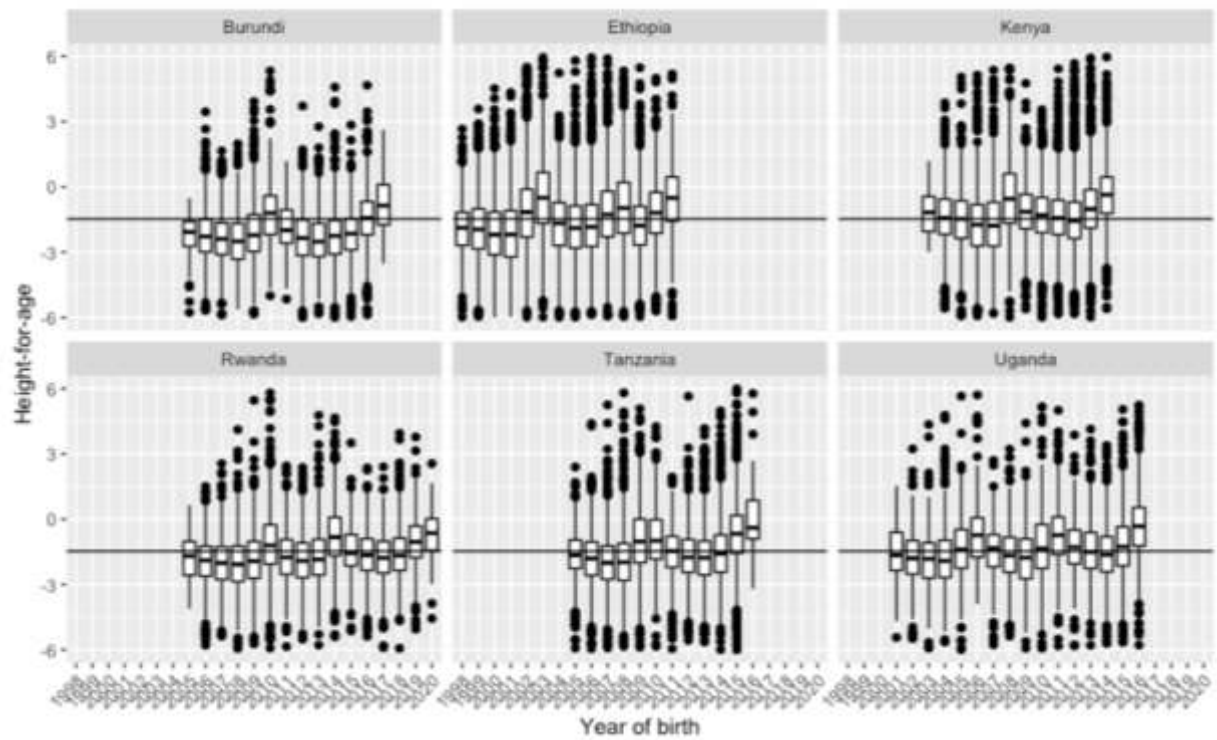


Figure S3. Long-term trend of height-for-age stratified by child's year of birth and by country. The horizontal black line shows the overall height standard deviation population average, -1.47 (95% CI: -1.48, -1.46).

Table S1. Crude and adjusted odds ratios for quartiles of prenatal PM2.5 exposure and stunting in children under 5 years old.

	Crude OR (95% CI)	aOR ^a (95% CI)	aOR ^b (95% CI)	aOR ^c (95% CI)
Prenatal PM2.5 exposure quartiles				
4.44–19.4 µg/m ³	reference			
19.4–24 µg/m ³	0.8785*** (0.8444, 0.9141)	1.0077 (0.965, 1.0525)	1.0089 (0.963, 1.0575)	0.990 (0.9422, 1.0411)
24–32.7 µg/m ³	0.981 (0.9432, 1.0204)	1.0419* (0.995, 1.0911)	1.0651** (1.0141, 1.1188)	1.0217 (0.960, 1.0873)
32.7–52.4 µg/m ³	1.4383*** (1.3839, 1.4947)	1.3185*** (1.2380, 1.4043)	1.3408*** (1.2565, 1.4307)	1.2560*** (1.1502, 1.3716)
Type of residence				
Urban		reference		
Rural		1.1095*** (1.0578, 1.1636)	1.1083*** (1.0522, 1.1673)	1.1144*** (1.0575, 1.1744)
Maternal education				
1 st quartile		reference		
2 nd quartile		0.959** (0.9256, 0.994)	0.9357*** (0.9015, 0.971)	0.9367*** (0.9022, 0.973)
3 rd quartile		0.6825*** (0.6444, 0.7229)	0.6632*** (0.6238, 0.7052)	0.6624*** (0.6226, 0.7048)
4 th quartile		0.4690*** (0.4148, 0.5303)	0.4518*** (0.3946, 0.5173)	0.4399*** (0.3834, 0.504)
Wealth index				
1 st quintile		reference		
2 nd quintile		0.9171*** (0.8800, 0.956)	0.9239*** (0.8845, 0.965)	0.9134*** (0.8740, 0.955)
3 rd quintile		0.8059*** (0.7715, 0.8418)	0.8222*** (0.7855, 0.8607)	0.8147*** (0.7779, 0.8532)
4 th quintile		0.6580*** (0.6281, 0.6894)	0.6702*** (0.6385, 0.7035)	0.6617*** (0.6300, 0.6950)
5 th quintile		0.4334*** (0.4073, 0.4611)	0.4383*** (0.4107, 0.4676)	0.4324*** (0.4050, 0.4616)
Use of polluting fuel				
No		reference		
Yes		1.1832** (1.0245, 1.3665)	1.1452* (0.980, 1.3383)	1.1534* (0.986, 1.3499)
Breastfed				
No			reference	
Yes			0.8500*** (0.7546, 0.958)	0.8494*** (0.7533, 0.958)
Postnatal PM2.5 exposure				1.0061*** (1.0018, 1.0104)

Logistic regression where the covariates are the estimated odds ratio of the outcome. ***p < 0.01, **p < 0.05, *p < 0.1

^aModel 1: Smoothing terms for year of birth, percent crop and random effects for primary sampling unit, mother, month of birth, and country. ^bModel 2: Ever breastfed added to the model. ^cModel 3: Postnatal PM2.5 exposure added to the model. CI: Confidence Interval; OR: Odds Ratio; aOR: adjusted Odds Ratio

Table S1

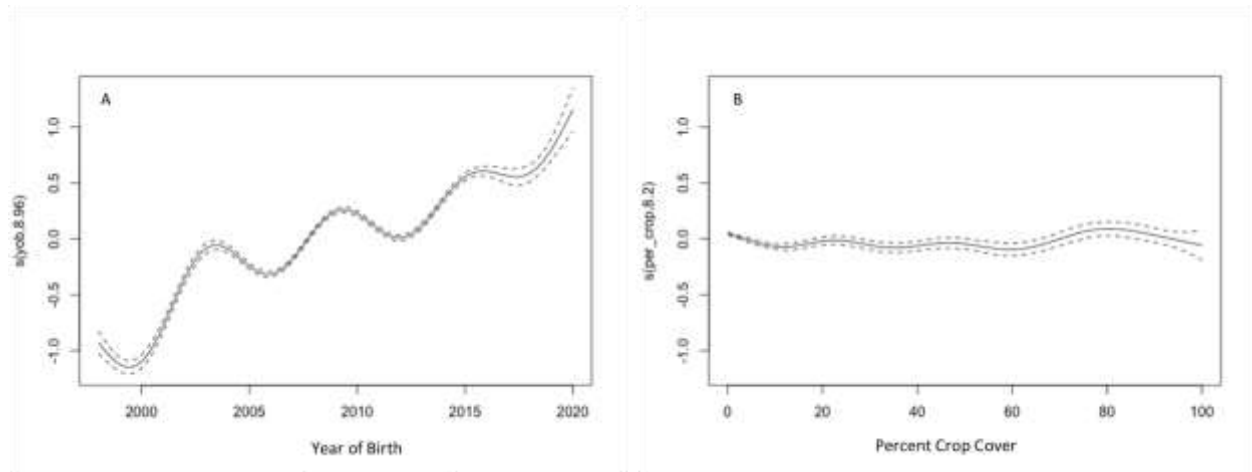


Figure S4. Plots of non-linear effects on height-for-age for (A) year of birth and (B) percent crop cover.

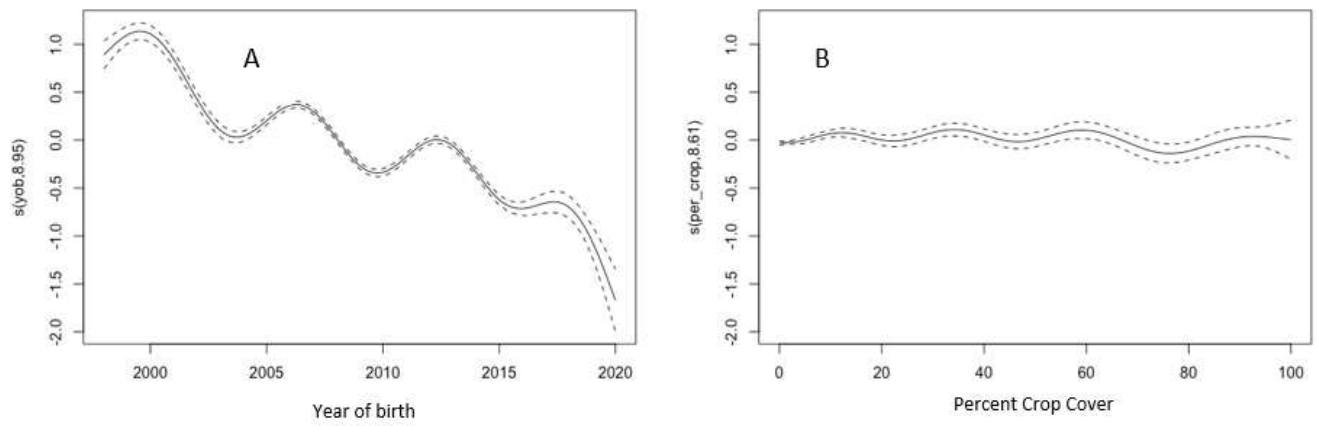


Figure S5. Plots of non-linear effects on stunting for (A) year of birth and (B) percent crop cover.