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# BACKGROUND MATERIAL

Why Are Indian Children Shorter Than African Children?

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## SUPPORTING FIGURES & TABLES

**“But this overlooks one key fact: firstborn Indian children are taller than firstborn African children.”**

- Figure 1: Height-for-age z-scores by birth order
- Table 1: Height-for-age z-scores and stunting by birth order

**“Among children born third or later, 48 percent are stunted in India versus 40 percent in Africa, while the rates for firstborn children are 35 percent in India versus 37 percent in Africa.”**

- Figure 2: Stunting by birth order
- Table 1: Height-for-age z-scores and stunting by birth order

**“Interestingly, compared to their African counterparts, girls born before the family’s eldest son actually fare better than boys born after him, while girls born after the eldest son fare worst of all.”**

- Figure 3: Height-for-age z-scores by position relative to eldest son
- Figure 4: Stunting by position relative to eldest son
- Figure 5: India-Africa height-for-age gap by position relative to eldest son
- Figure 6: India-Africa stunting gap by position relative to eldest son
- Table 2: Height-for-age and stunting by position relative to eldest son

**“While firstborn Indian children receive, on average, one more essential childhood immunization than their counterparts in Africa, this is not the case for their younger siblings.”**

- Figure 7: Number of vaccinations by birth order
- Figure 8: Number of vaccinations by position relative to eldest son
- Table 3: Number of vaccinations

**“In fact, the India-Africa height gap is apparent at birth, and remains consistent through childhood.”**

- Figure 9: India-Africa height-for-age gap
- Figure 10: India-Africa stunting gap

Figure 1: Height-for-age z-scores by birth order

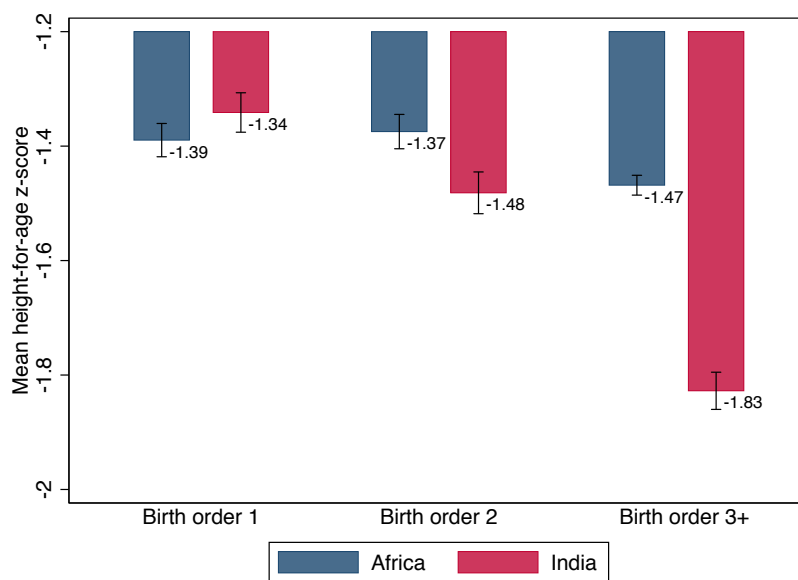


Figure 2: Stunting by birth order

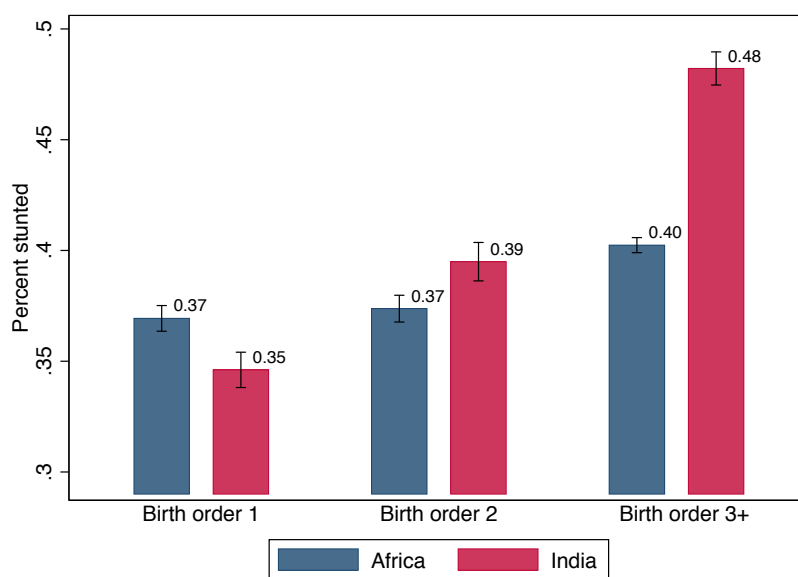


Table 1: Height-for-age z-scores and stunting by birth order, with and without family fixed effects

	HFA z-score		Stunted	
	(1)	(2)	(3)	(4)
India	0.054** [0.026]		-0.022*** [0.006]	
India*2nd child	-0.171*** [0.030]	-0.270*** [0.079]	0.047*** [0.007]	0.106*** [0.019]
India*3rd+ child	-0.409*** [0.029]	-0.426*** [0.137]	0.104*** [0.006]	0.142*** [0.033]
2nd child	0.041** [0.019]	-0.205*** [0.047]	-0.000 [0.004]	0.045*** [0.010]
3rd+ child	-0.056*** [0.017]	-0.461*** [0.075]	0.029*** [0.003]	0.093*** [0.016]
Africa mean of dep. var.	-1.435	-1.448	0.390	0.396
Mother fixed effects	No	Yes	No	Yes
Child age*India fixed effects	No	Yes	No	Yes
Observations	174,157	88,263	174,157	88,263

*Notes:* 1. Survey year and child age dummies are included in all regressions.

2. Standard errors are clustered by mother and appear in brackets.

3. The main effect *India* is included in the regression, but is not shown in columns 2 and 4.

Figure 3: Height-for-age z-scores by position relative to eldest son

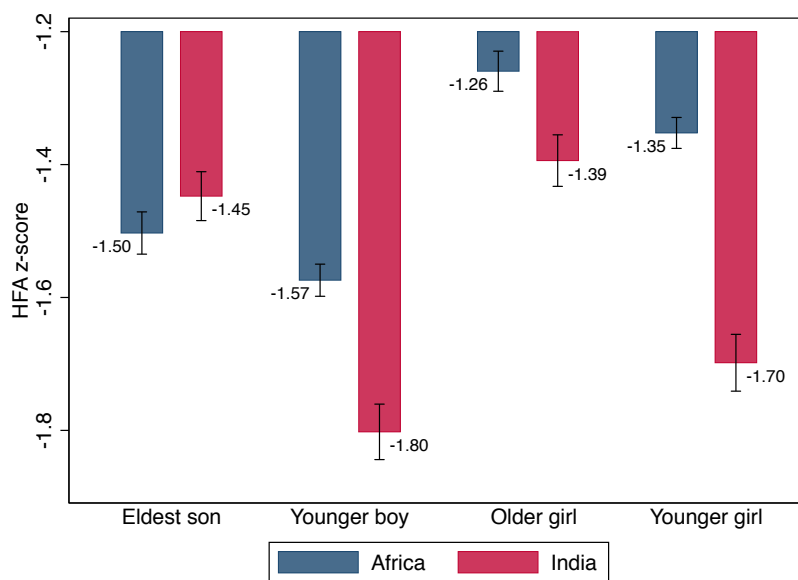


Figure 4: Stunting by position relative to eldest son

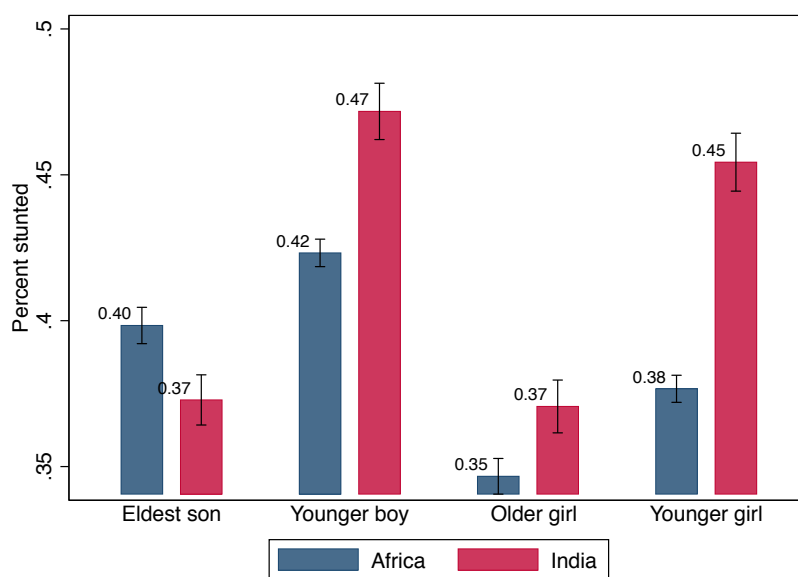


Figure 5: India-Africa height-for-age gap by position relative to eldest son



Figure 6: India-Africa stunting gap by position relative to eldest son



Table 2: Height-for-age and stunting by position relative to eldest son, with and without family fixed effects

	HFA z-score		Stunted	
	(1)	(2)	(3)	(4)
India	0.069** [0.028]		-0.026*** [0.006]	
Boy younger than eldest son	-0.066*** [0.019]	-0.264*** [0.053]	0.024*** [0.004]	0.050*** [0.011]
Girl older than eldest son	0.279*** [0.033]	0.392*** [0.068]	-0.056*** [0.009]	-0.083*** [0.014]
Girl younger than eldest son	0.160*** [0.019]	-0.045 [0.052]	-0.023*** [0.004]	0.003 [0.011]
India*Boy younger than eldest son	-0.274*** [0.033]	-0.235** [0.093]	0.073*** [0.007]	0.075*** [0.023]
India*Girl older than eldest son	-0.252*** [0.049]	-0.035 [0.105]	0.077*** [0.015]	-0.013 [0.026]
India*Girl younger than eldest son	-0.425*** [0.033]	-0.290*** [0.090]	0.107*** [0.008]	0.101*** [0.022]
Africa mean of dep. var.	-1.435	-1.448	0.390	0.396
Mother fixed effects	No	Yes	No	Yes
Child age*India fixed effects	No	Yes	No	Yes
Observations	145,426	79,275	145,426	79,275

Notes: 1. Survey year and child age dummies are included in all regressions.  
2. Standard errors are clustered by mother and appear in brackets.  
3. The main effect *India* is included in the regression, but is not shown in columns 2 and 4.  
4. This sample only includes children from households with an eldest son.

Figure 7: Number of vaccinations by birth order

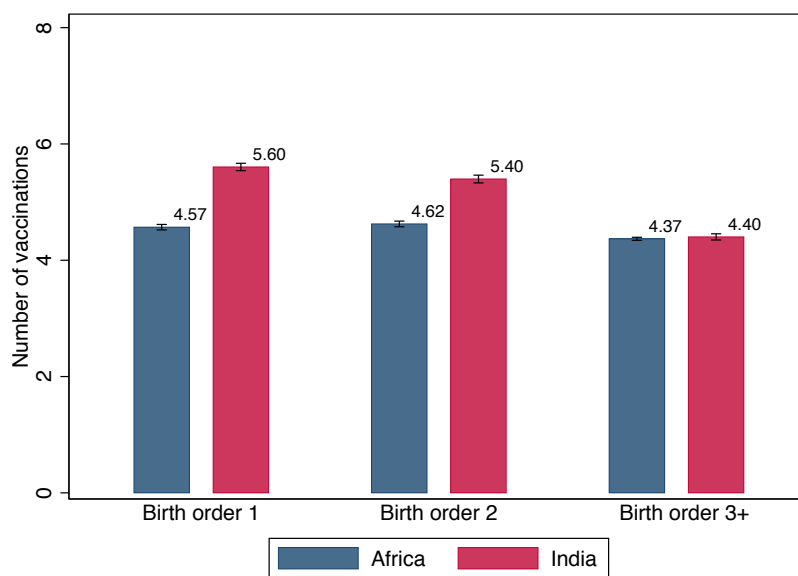


Figure 8: Number of vaccinations by position relative to eldest son

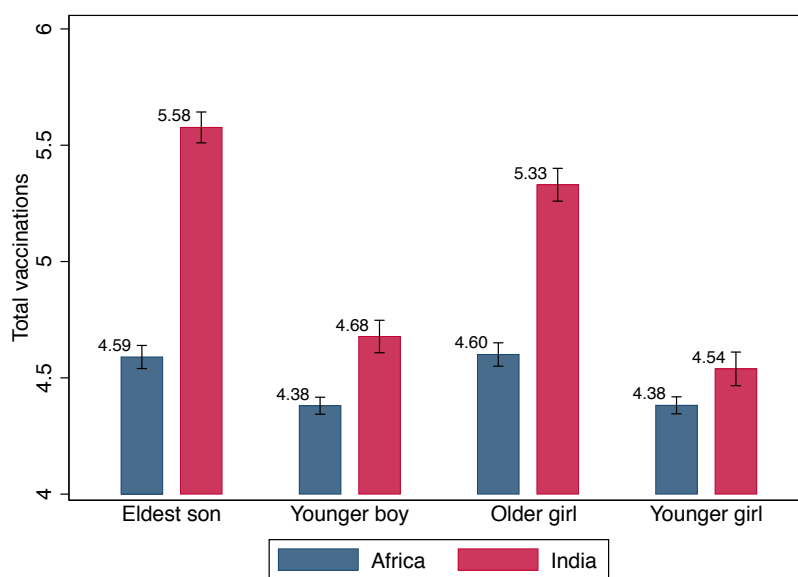


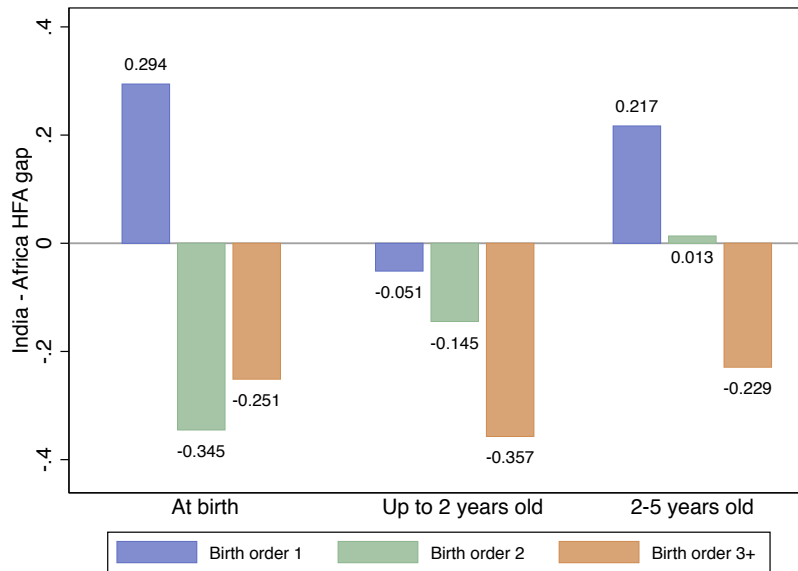


Table 3: Number of vaccinations, with and without family fixed effects

Sample:	Number of vaccinations	
	All (1)	All (2)
India	0.793*** [0.043]	
India*2nd child	-0.230*** [0.043]	-0.272*** [0.103]
India*3rd+ child	-1.158*** [0.046]	-0.470** [0.185]
2nd child	-0.075*** [0.029]	0.027 [0.067]
3rd+ child	-0.446*** [0.026]	0.094 [0.107]
Africa mean of dep. var.	6.187	5.973
Mother fixed effects	No	Yes
Child age*India fixed effects	No	Yes
Observations	127,544	64,341

*Notes:* 1. Survey year and child age dummies are included in both regressions.  
2. Standard errors are clustered by mother and appear in brackets.  
3. The main effect *India* is included in the regression, but is not shown in column 2.  
4. The maximum number of vaccines that a child can receive is 9.  
5. The recommended age for vaccinations is up to age 12 months, so this sample is restricted to children ages 13-59 months.

Figure 9: India-Africa height-for-age gap



Notes: The “At birth” subgroup is defined as those under age 1 month. The “Up to 2 years old” is defined as those older than 1 month and under 2 years old.

Figure 10: India-Africa stunting gap

