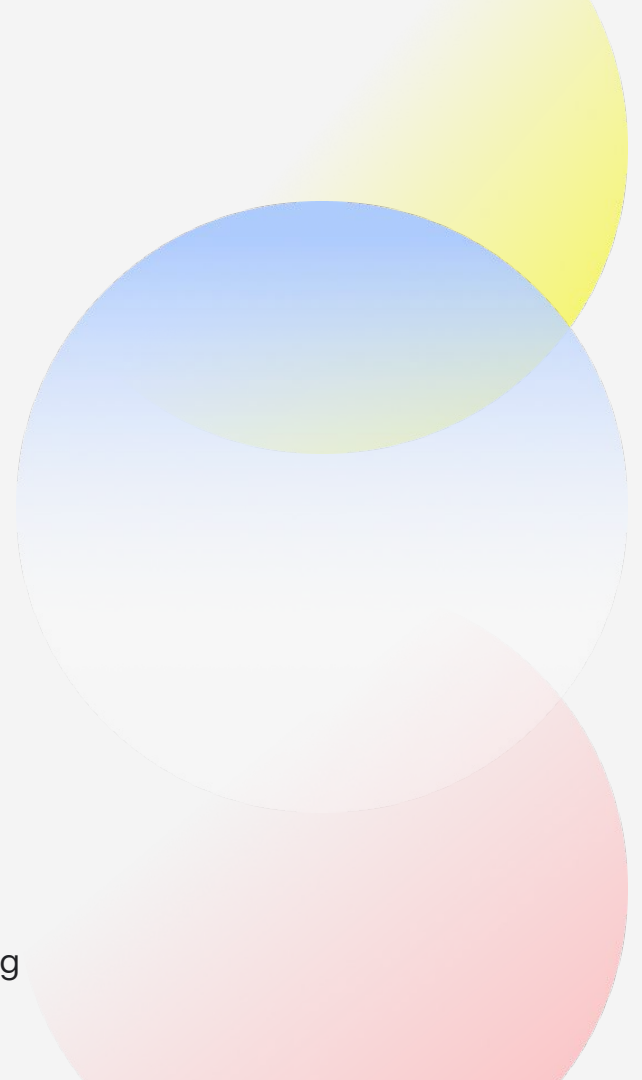


# Global Under Five Stunting and Early Childhood Development

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# The connection between under-five stunting and early childhood development

- Early childhood is a critical developmental period where nutrition is thought to play a key role in later outcomes
- **Under-five stunting** provides a population-level measure to investigate how nutrition relates to early development



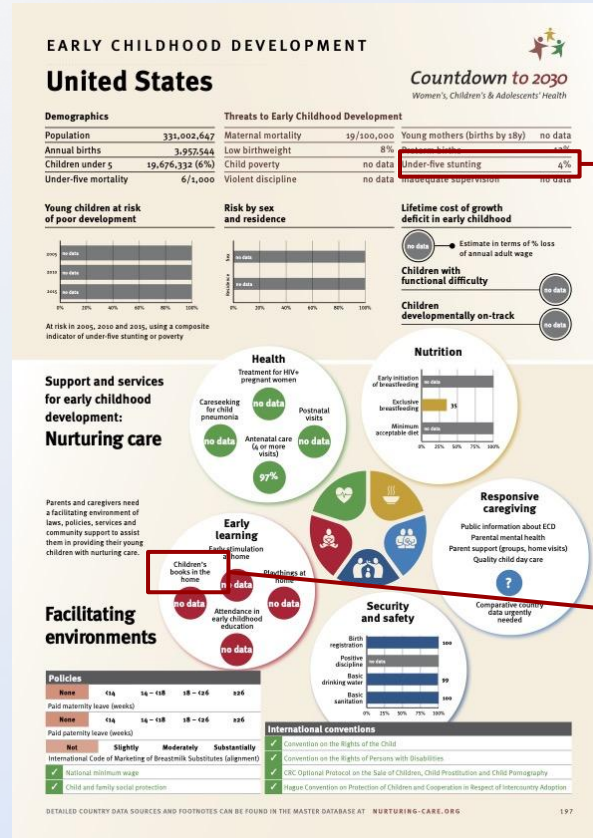
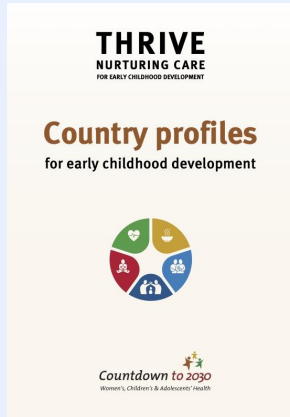
## Research question:

To what extent is under-five stunting associated with the proportion of children that are developmentally on-track across countries?

**Stunting:**  
**< 2 SD below**  
WHO child  
growth  
standards  
**median**

**Developmentally on track:**  
On track for  $\geq 3$  of the  
following domains:  
literacy-numeracy, physical  
dev., social-emotional dev.,  
and learning

# Data set: country profiles for early childhood development

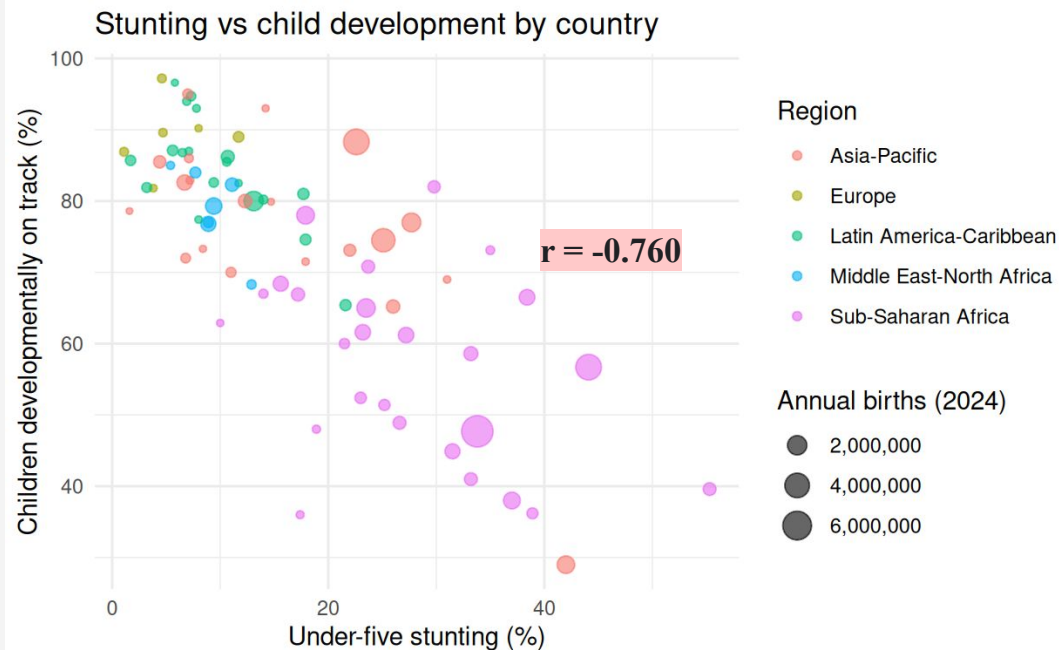


Under-five stunting

Books in the home

Country profiles for early childhood development provides one-page summaries for 197 countries tracking 40+ early child development indicators, including health, nutrition, and early learning

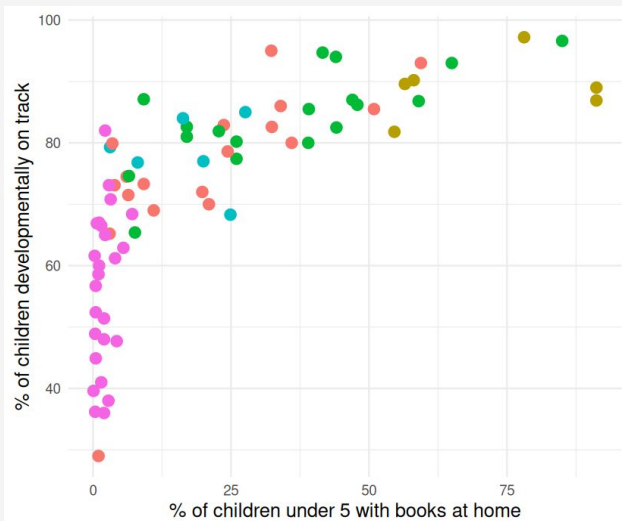
- Countries with **higher stunting rates** tend to have **lower percentages of children developmentally on track**
- This pattern is especially **pronounced in Sub-Saharan Africa**, while **Europe and Latin America cluster** at low stunting and high development levels.



$$\overbrace{\text{children dev on track}} = 90.89 - 1.06 \times \text{under five stunting}$$

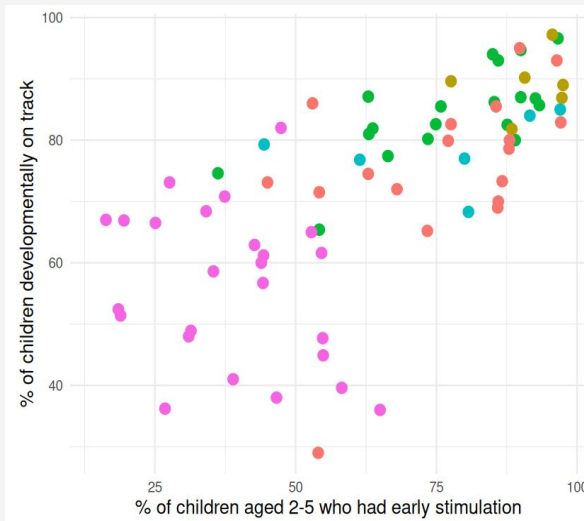
# Early Childhood Environment

## Books at Home vs. Development



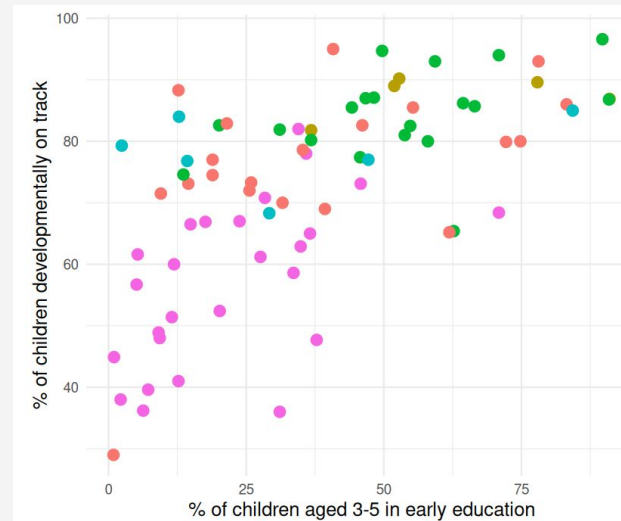
$r = 0.713$

## Early Stimulation vs. Development



$r = 0.666$

## Early Education vs. Development

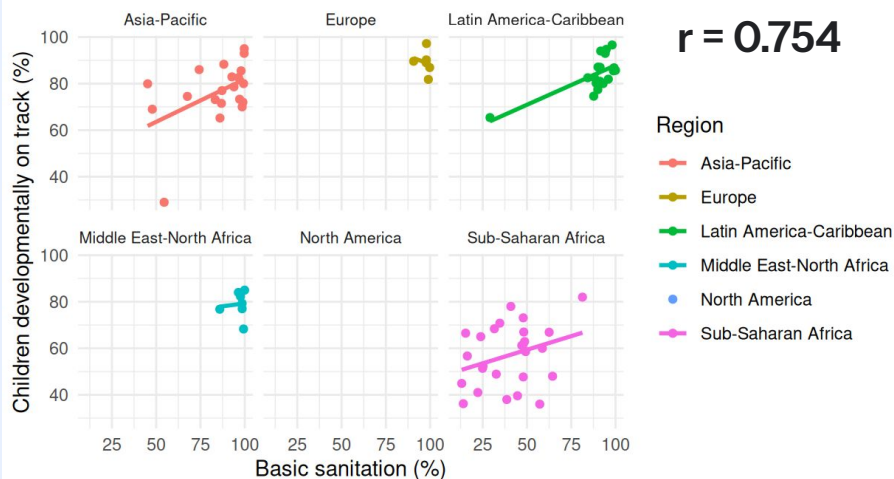


$r = 0.628$

Region ● Asia-Pacific ● Europe ● Latin America-Caribbean ● Middle East-North Africa ● North America ● Sub-Saharan Africa

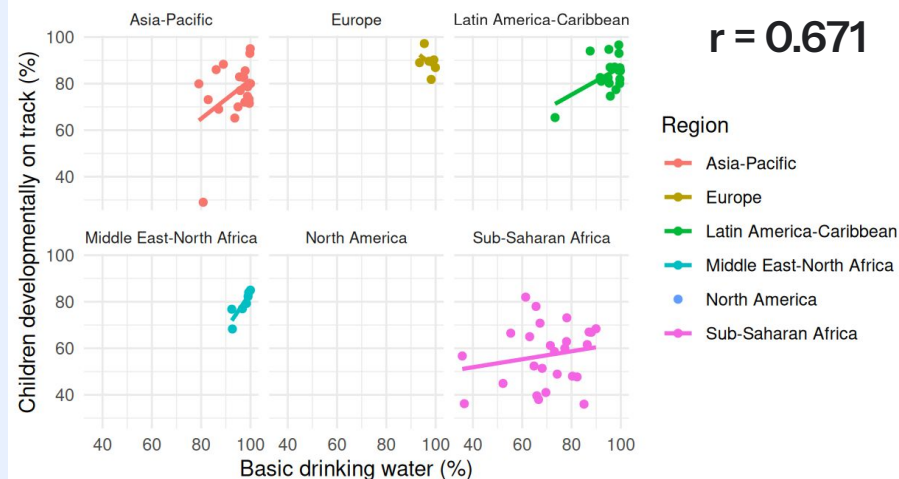
# ↓ A look at environmental variables

Percentage of the population using basic sanitation vs. children development on track



Note: “Basic sanitation” = the percentage of the population using an improved sanitation facility that is not shared with other households (improved facilities include: flush/pour flush to piped sewerage systems, septic tanks or pit latrines; ventilated improved pit latrines; composting toilets or pit latrines with slabs)

Percentage of the population with basic drinking water vs. children development on track



Note: “Basic drinking water” = the percentage of the population using an improved drinking water source, where collection time is not more than 30 minutes for a round trip including queuing (improved sources include: piped water; boreholes or tube wells; protected dug wells; protected springs; rainwater; and packaged or delivered water)

# Takeaways & Discussion

Under-five stunting has the greatest effect of all the observed variables on child development

Among important nurturing care elements, per UNICEF, nutrition appears to have the strongest relationship with child development

Important to note that analyses were performed by region when taking into account conclusions

Funding needs to be mobilized to support data collection and analyses in order to contribute to improving children's prospects during this formative stage of life

# Thank you!

