Students at the Sdei Kraom School in Battambang province, Cambodia.
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The NOURISH Evaluation: Can WASH and Nutrition Boost Kids' Growth?

May 26, 2016

Children who reach their growth potential have enormous advantages. But, growth delays incurred early in life — typically in the first 1,000 days after conception, or by the child's second birthday — are irreversible and associated with greater risk of disease, death or lower quality of life, including low educational achievement and reduced economic productivity. An estimated 26 percent of children globally are stunted, characterized as being two or more standard deviations from the WHO Child Growth Standards median, reflecting serious growth delays.

Reducing stunting is therefore a major health and development objective.

Most efforts to reduce the incidence of stunting have sensibly focused on providing children with better nutrition during the critical period when stunting occurs. However, many studies have shown that better nutrition alone cannot wholly eliminate growth delays: acute and persistent infections associated with unsafe water, poor sanitation, and inadequate hygiene (WASH) can impact gut health and therefore

overall nutrition and growth. There is some evidence that better access to sanitation alone can lead to increases in height-for-age — perhaps especially as community-level sanitation expands — though the current evidence for WASH measures by themselves leading to reduced undernutrition and enhanced growth is mixed: notably, recent trials of sanitation programs in India saw no effect on this outcome.

There is growing interest in the potential for combined nutrition and WASH interventions to yield complementary and even synergistic effects on enteric infections, measures of gut health, and child growth along with the many follow-on impacts of reduced undernutrition. The limited empirical evidence we have, and our understanding of the links between enteric infections and nutrition, strongly suggests this would be the case (see figure below), but more research is needed. Several current trials are testing key hypotheses around these effects, including the WASH-Benefits trials in Kenya and Bangladesh and SHINE, aiming to rigorously evaluate carefully conducted interventions in the field, under the scrutiny of investigators.

Building an Evidence Base

A separate but related practical question is whether real-world programming on WASH and nutrition can deliver even better results when conducted in tandem in the same population. Rosenboom's Law that "pilots never fail, and never scale" suggests that we should look to activities conducted independently of investigators (i.e., in typical programs) to understand whether the hypothesized effects can be realized.

The NOURISH Impact Evaluation intends to do exactly that, through randomizing the roll-out of large-scale nutrition and WASH programs in rural communities, implemented by Save the Children and SNV across three provinces of Cambodia: Siem Reap, Pursat, and Battambang.

We're using a trial study design that allows us to identify the individual and combined causal effects of nutrition and WASH interventions: a factorial cluster randomized controlled trial (cRCT). We will measure the effects of WASH alone (primarily a community-led total sanitation approach, coupled with supply chain strengthening and social and behavior change communication), nutrition alone (complementary feeding and education through community-based growth promotion, as well as conditional cash transfers linked to the utilization of key health and nutrition services focusing on first 1,000 days families), and combined WASH/nutrition compared with a control group.

Apart from randomizing the interventions to communes and stipulating even roll-out across the groups, the evaluation team has had no role in designing or managing the interventions. Our job is to allow the intervention to proceed as planned, and measure differences in height-for-age (used to identify chronic malnutrition) in children after exposure to these interventions during the first two years of life.

We hope the end result will be important evidence on the potential value of program integration in the field, ultimately helping to give kids a healthier start in life.

By Dr. Joe Brown

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Additional Resources:

- USAID/Cambodia
- Georgia Tech School of Civil and Environmental Engineering

This article appears in Global Waters, Vol. 7, Issue 2; for past issues of the magazine, visit Global Waters' homepage on Globalwaters.org.