

Housing, Health and Happiness: The Impacts of Cement Flooring in Mexico



The Challenges of Urban Slums.

Worldwide nearly 1 billion urban dwellers live in inadequate housing, with poor access to clean water and limited sanitation and ventilation. This number is growing: by 2050, as much as 70 percent of the world's population will be living in cities (up from 50 percent today), with most of this growth occurring in developing countries. Such rapid expansion is likely to result in an explosion of unplanned informal settlements and slums.

While urban growth brings opportunities for education, income generation and social development, it also poses serious health threats, particularly for the poor. Overcrowding, lack of access to resources, and poor infrastructure can fuel infectious disease outbreaks, malnutrition, violence and serious mental health problems.

Dirt floors are a major threat to the health of slum dwellers, by providing a breeding ground for parasites. In neighborhoods without sanitation, fecal matter can enter the house easily and, on a dirt floor, become difficult to spot and remove. This contributes to the heavy burden of parasitic infections in children, resulting in diarrhea, malnutrition and anemia. Among young children, these infections can also affect cognitive development, causing losses in school readiness, skills development, and long-term productivity.

The Mexican Government Devises A Solution.

To improve the health and well-being of the urban poor, in 2000 the Mexican Government created *Piso Firme*. The program replaces slum dwellers' dirt floors with more hygienic cement flooring, thereby interrupting the transmission of parasitic infections, particularly among children. As part of the program, the government offers homeowners with dirt floors up to 538 square feet of concrete flooring, at a cost of about \$150 per home. Homeowners can prepare and lay the new flooring themselves, a task which takes about 30 minutes.

To identify the impacts of this simple slum upgrade on welfare and development, CEGA researcher Paul Gertler at the University of California, Berkeley worked with colleagues from Washington University in St. Louis, the World Bank and the Mexican government to rigorously evaluate *Piso Firme*. They compared improved slum households with those left unimproved, and found that:

- Adults in upgraded homes were substantially happier (as measured by their degree of satisfaction with their housing and quality of life) and experienced lower rates of depression and stress.
- Children experienced almost 13 percent fewer episodes of diarrhea and benefited from a 20 percent reduction in anemia.
- Toddlers' language and communication skills jumped 30 percent, while youth scored 9 percent higher on vocabulary tests.

Broader Impacts: The Scale-up of *Piso Firme*.

Several years later, CEGA's evaluation of *Piso Firme* has proven influential. According to Gertler, the study's findings helped the Mexican government to justify expansion of program, which is now offered nationwide. In addition, the non-governmental organization *Un Techo Para Mi País* (translated as "a roof for my country"), which builds low-cost housing for urban dwellers, has been able to expand its operations internationally, by attracting new funding for their evidence-based approach. Established in Chile in 1991, the organization is now funded to work in 14 Latin American countries. CEGA is partnering with the group to evaluate whether other slum upgrades—like improved roofing and ventilation—can provide additional health benefits for the urban poor.

Read More: Cattaneo, Matias, D. Galiani, Sebastian, Gertler, Paul, J. Martinez, Sebastian and Titiunik, Rocio. 2009. Housing, Health, and Happiness. *American Economic Journal: Economic Policy* 1:1, 75-1.

