

Study finds with vacant lots greened, residents feel safer

August 7 2012

Greening vacant lots may make neighborhood residents feel safer and may be associated with reductions in certain gun crimes, according to a new study from the Perelman School of Medicine at the University of Pennsylvania. Results show that residents living near greened vacant lots feel safer than those near non-greened sites. Additionally, researchers noted that incidents of police-reported crimes may be reduced after greening. The results expand upon previous studies and are the next step in helping researchers understand the full impact of vacant lot greening on crime, safety, and health. Full results of the study were published online this week in *Injury Prevention*.

"Vacant lot greening changes the physical environment of a neighborhood from one that may promote crime and fear to one that may reduce crime and make people feel safer," said lead author Eugenia C. Garvin, MD, a resident in the Department of [Emergency Medicine](#) at the Perelman School of Medicine. "Our theory is that transforming [vacant lots](#) from a space overgrown with vegetation and filled with trash to a clean and green space may make it difficult for people to hide illegal guns and conduct other [illegal activities](#) such as [drug use](#) in or near the space. Additionally, green space may encourage community cohesion."

The study is the first to use a [randomized controlled trial](#) design - the gold standard in scientific research - to examine the effects of vacant lot greening. Researchers randomly selected two clusters of vacant lots - one cluster which was later greened, and one control cluster which was not. The team worked with members of the Pennsylvania Horticultural

Society who performed greening of select vacant lots by removing debris, planting grass and trees, building fences, and performing regular maintenance every two weeks.

"Philadelphia LandCare has helped transform thousands of vacant lots in key neighborhoods across the city," said Bob Grossmann, director of the Pennsylvania Horticultural Society's vacant land program. "We know that these improvements help neighborhoods and residents in a number of ways, but studies like the one led by Dr. Garvin help us to determine very specifically how we're impacting the city so we can continue to drive change where it's needed most and in the way that will have the most positive effects."

Twenty one residents living near both sites were interviewed before and after the greening. Survey results show that residents living near the greened vacant lots felt significantly safer at the three-month follow-up visit compared to those near the control site. Additionally, the research team analyzed police reported crime data from three months before and three months after the greening. Total crime, as well as assaults with and without a gun, was less after the greening.

Results from two other portions of the interview are still being analyzed: an in-depth qualitative interview about the impact of the [physical environment](#) on health, and a walking interview around the neighborhood, in which residents' heart rates were monitored. The goal of the walking interview was to explore a link between the environment and heart rate, a physiologic marker for stress. Data from the interviews will be published at a later time.

"We know health can be affected by the environment of one's neighborhood, but we know very little about what causes the impact," said Garvin. "One theory is that chronic stress from the neighborhood environment can lead to poor health outcomes, but there are few studies

that examine the physiologic basis for this link. By monitoring the participants' heart rate during the walking interview, we hope to get a better idea of how the body reacts to the environment, and how vacant land might influence a resident's health."

Until now, few studies have examined vacant lot interventions to reduce violence and improve health. The results of the new study expand upon a 2011 study led by Charles Branas, PhD, associate professor of Epidemiology at Penn Medicine and senior author on the current study, in which a quasi-experimental, decade-long comparison of thousands of greened and non-greened vacant lots documented significant before-and-after reductions in gun assaults around vacant lots that were greened compared with those which were not.

Randomized controlled trials of vacant lot greening such as the present study provide the next level of statistical evidence needed to provide the best information to urban planners and city officials interested in greening as a strategy to prevent violence and encourage safety. A significantly larger randomized controlled trial examining hundreds of vacant lots is currently under way.

Provided by University of Pennsylvania School of Medicine

Citation: Study finds with vacant lots greened, residents feel safer (2012, August 7) retrieved 2 May 2024 from <https://phys.org/news/2012-08-vacant-lots-greened-residents-safer.html>

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