Health and Place 52 (2018) 221–230

Contents lists available at ScienceDirect

Health & Place

journal homepage: www.elsevier.com/locate/healthplace

Community change and resident needs: Designing a Participatory Action Research study in Metropolitan Boston

Mariana C. Arcaya[a,*], Alina Schnake-Mahl[b], Andrew Binet[a], Shannon Simpson[c], Maggie Super Church[d], Vedette Gavin[d]on behalf of the Healthy Neighborhoods Study Team investigators

[a] Department of Urban Studies and Planning, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139, USA
[b] Department of Social and Behavioral Sciences, Harvard T.H. Chan School of Public Health, 677 Huntington Ave, Boston, MA 02115, USA
[c] Dudley Street Neighborhood Initiative, 550 Dudley St, Roxbury, MA 02119, USA
[d] Conservation Law Foundation, 62 Summer St, Boston, MA 02110, USA

The Healthy Neighborhoods Study investigator team includes:Bill Coleman, Shoshanna Levine, Annika Nielsen, Leigh Carroll, Sanouri Ursprung, Ben Wood, Halley Reeves, Barry Keppard, Noemie Sportiche, Jessie Partirdge, Jose Figueora, Austin Frakt, Mariel Alfonzo, Dina Abreu, Tatiana Abreu, Trena Ambroise, Eric Andrade, Eduardo Barrientos, Arnetta Baty, Carl Baty, Katrina Benner, Clifton Bennett, Amy Blanchette, Roseann Bongiovanni, Olivia Cardile, Cristian Corchado, Caleb Dixon, Crystal Dodson, Juan Dominguez, Mytha Durena, Yrma Fiestas, Josee Genty, Nicole Graffam, Adela Gonzalez, Emma Grigsby, Patricia Hayden, Stephanie Hernandez Alvado, Zuleyka Hernandez, Isaac Hodes, Jarred Johnson, Kathryn Keefe, Krystle Latimer, Shoshanna Levine, Christina Logg, Nelson Martinez, Khadijah Mboup, Doug McPhorson, Steve Meacham, Daynaba Mohammed, Emily Moss, Annika Nielsen, Kathleen O'Brien, Lisa Owens, Jessie Partridge, Lillie Pearl Johnson, Maria Belen Power, Taylee Rebelo, Ronel Remy, Gail Roderigues, Qamar Sabtow, Clarisa Sanchez, Andrew Seeder, Ramon Sepulveda, Noemie Sportiche, Sanouri Ursprung, Emma West, Leah Winters, Ben Wood, Tremayne Youmans

ARTICLE INFO

Keywords:
Neighborhood
Participatory Action Research
Social determinants of health
Gentrification
Socioeconomic status
Urban development

ABSTRACT

The health implications of urban development, particularly in rapidly changing, low-income urban neighborhoods, are poorly understood. We describe the Healthy Neighborhoods Study (HNS), a Participatory Action Research study examining the relationship between neighborhood change and population health in nine Massachusetts neighborhoods. Baseline data from the HNS survey show that social factors, specifically income insecurity, food insecurity, social support, experiencing discrimination, expecting to move, connectedness to the neighborhood, and local housing construction that participants believed would improve their lives, identified by a network of 45 Resident Researchers exhibited robust associations with self-rated and mental health. Resident-derived insights into relationships between neighborhoods and health may provide a powerful mechanism for residents to drive change in their communities.

* Corresponding author at: Department of Urban Studies and Planning, Massachusetts Institute of Technology, 77 Massachusetts Avenue, 9-426, Cambridge, MA 02139, USA
E-mail addresses: marcaya@mit.edu (M.C. Arcaya), Alinasmahl@mail.harvard.edu (A. Schnake-Mahl), abinet@mit.edu (A. Binet), ssangelee1.0@gmail.com (S. Simpson), mpschurch@clf.org (M.S. Church), vgavin@clf.org (V. Gavin).

https://doi.org/10.1016/j.healthplace.2018.05.014
Received 23 January 2018; Received in revised form 18 May 2018; Accepted 31 May 2018

1. Background

Convincing evidence links many of the neighborhood changes sought by healthy community development initiatives (Williams and Marks, 2011; Rogerson et al., 2014) to better health. Exposure to lower neighborhood-level poverty has been shown to reduce the risk of diabetes and extreme obesity (Ludwig et al., 2011), fewer vehicles miles traveled have been linked to reductions in childhood asthma episodes (Friedman et al., 2001), and more walkable built environments may promote lower body mass index (Arcaya et al., 2014a), among other examples (Kawachi and Berkman, 2003). Further, Health Impact Assessments predict that health improvements are likely to follow the construction of urban development projects that provide affordable housing, improve transit-access, improve air quality and reduce injury risk by decreasing vehicle miles traveled, and promote economic stability (Metropolitan Area Planning Council, 2013).

However, despite a large and growing body of work (Arcaya et al., 2016; Oakes et al., 2015) showing observational associations, and in rare cases causal estimates of neighborhood effects on health (Ludwig et al., 2011), there is limited evidence on how to effectively promote health through urban development, or how to mitigate health risks associated with urban development projects. Efforts to promote health through changing the neighborhood environment could fail if health benefits depend on specific contextual mediators, or only operate within certain populations. Additionally, poorly understood, unintended consequences of development, including the potential for accelerated gentrification and associated displacement, could overwhelm any salutary effects of what is intended to be "healthy development" (Cole et al., 2017).

For example, development that lowers neighborhood poverty rates, improves housing quality, and provides access to green space could also help drive up rents, putting existing residents at risk of higher housing cost burden, crowding, displacement, and dislocation from neighborhood-based social and material resources (Aboelata et al., 2017). Given the growing interest in neighborhood effects on health, there are surprisingly few studies that evaluate the benefits and risks of urban development efforts to make residents healthier (Oakes et al., 2015).

In part, this gap in the research reflects a paucity of wellness-based development projects to evaluate. Centering real estate investment and development decisions on the goal of improving health is a relatively new phenomenon (Pastor and Morello-Frosch, 2014). An example of one such effort is the Healthy Neighborhoods Equity Fund (HNEF), a $23 million private equity fund created to support healthy neighborhood development by investing in mixed-income, mixed-use transit-oriented development (TOD) real estate projects in urban areas across Massachusetts that exhibit poor health outcomes and demonstrate a need for economic growth (HNEF and Home Internet, 2017). TOD includes a mixture of housing, office, retail, and other amenities integrated into a walkable neighborhood, and located within a quarter to a half-mile of public transportation. HNEF finances projects that improve neighborhood conditions and support the community's vision for growth in neighborhoods that are in the early stages of economic and social change. The Fund was co-founded by the Conservation Law Foundation in partnership with the Massachusetts Housing Investment Corporation.

This paper reports study design and baseline results from the Healthy Neighborhoods Study (HNS), an investigation into how transit-oriented developments supported by HNEF and other funding sources affect health and wellbeing. We note that HNEF has no financial stake in the outcome of HNS, which is independently funded by the Robert Wood Johnson Foundation. HNEF investments are not tied to, nor dependent upon, the results of the HNS. A Participatory Action Research (PAR) (Baum et al., 2006; Cornwall and Jewkes, 1995) approach grounds the HNS in the insights and lived experiences of community residents, involving residents in all aspects of study design and analysis (Wallerstein et al., 2017).

PAR, like Community Based Participatory Research (CBPR) (Wallerstein et al., 2017) and "popular epidemiology" (Brown, 1993), falls within the family of participatory epidemiology practices. At the foundation of participatory epidemiology are equitable research partnerships, often comprising academic, community-based, public agency, non-profit, and other traditionally silent stakeholders (Bach et al., 2018), that integrate diverse perspectives on health and its determinants. The novel, multifaceted insights such partnerships uncover can extend modern epidemiology's (Rothman et al., 2008) ability to investigate complex, interacting determinants of health at the individual-, neighborhood-, and policy-levels (Bach et al., 2018; Krieger, 1994). As such, participatory research is a well-recognized best practice for exploring links between neighborhoods and health, and for understanding neighborhood-level interventions (Minkler et al., 2008).

The objective of this paper is to describe an innovative application of PAR to understand how urban development influences social determinants of health, and ultimately population health. We present our participatory research design, introduce study protocols that were developed by a community-centered research network, present baseline survey data, and examine associations between resident-prioritized health risk/protective factors and self-reported health metrics from the first year of the study.

2. Study methods

HNS examines: 1) health risks that could be effectively addressed through development activities, and 2) residents' complex relationship with neighborhood conditions and neighborhood change in order to identify health risks and protective factors introduced by new development. HNS is a multi-site, longitudinal PAR study that is centered on a network of 45 "Resident Researchers" working collaboratively with academic, non-profit, and public agency partners. The study team designed and collected baseline surveys on individual characteristics and neighborhood perceptions from respondents in nine low-income urban neighborhoods in the metropolitan Boston region (see Exhibit 1) that are experiencing rising real estate development pressures.

2.1. Study design

To capture a range of development contexts, nine neighborhoods in the greater Boston metropolitan area were selected for the study. These neighborhoods are places where large investments in TOD from HNEF or other public and private funding sources were likely to occur in the next five years, and which exhibit poor population health and economic disadvantage. Specific criteria for site selection included: 1) the presence of a walkable urban center located near public transit, 2) significant need, and opportunity for, economic growth, 3) early to mid-stage transformational growth, and 4) poor population health outcomes. We used these criteria to screen municipalities and neighborhoods across Massachusetts for inclusion, relying on grey and scholarly literature to understand local built form, development context, and health status (Arcaya et al., 2014b; Leinberger and Lynch, 2015). To select study sites within the sample of neighborhoods that met the criteria above, we focused on areas with the highest rates of the following health challenges, which were ranked by HNS research partners the Metropolitan Area Planning Council and Massachusetts Department of Public Health for the purposes of site screening: chronic heart disease, cardiovascular disease, chronic obstructive pulmonary disease, diabetes, hypertension, stroke, substance abuse, and asthma.

Within the least healthy quartile of sites that met the original screening criteria, we identified three communities expected to receive HNEF investments over the short term. These were matched to six otherwise similar control communities that lack planned investments (Exhibit 1). Matching relied on a multidimensional, demographic, socioeconomic, built form, and health community typology (Arcaya et al., 2014b), geographic proximity, and real estate development pressure,