



“The ‘Projects’ Are Nice Now”: Resident Perspectives on the Rental Assistance Demonstration (RAD) Program

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ABSTRACT

The Rental Assistance Demonstration (RAD) program, administered by the U.S. Department of Housing and Urban Development (HUD), seeks to improve and preserve affordable housing by converting traditional public housing (Section 9) to Section 8 rental assistance. This study examined a RAD conversion in California’s Central Valley, one of the first in the nation, to understand residents’ experiences and their perspective on the program. We conducted 30 in-depth interviews with residents across three RAD sites: a small city and two rural areas. Residents identified four main outcomes of the RAD conversion: (a) upgraded heating/cooling systems and appliances; (b) improved unit layout, aesthetics, and conditions; (c) perceived safety and connectedness; and (d) enhanced resident resources and pride of place. Areas for improvement included increased resident education throughout the RAD process, as well as improving social support and community-building efforts among residents. Our article demonstrates notable (and mostly positive) results associated with RAD conversions according to residents. This is especially relevant as housing authorities across the United States proceed to implement RAD, particularly in large urban areas. Future research should continue to evaluate the impact of the RAD program, with particular emphasis on resident outcomes.

ARTICLE HISTORY

Received 16 July 2018
Accepted 18 February 2019

KEYWORDS

Rental Assistance Demonstration; capital improvements; public housing; housing and health; social determinants of health; housing interventions

The U.S. Department of Housing and Urban Development (HUD) subsidizes 1.2 million public housing units nationwide; however, a documented \$26–49 billion capital backlog threatens to reduce this housing inventory while also posing health and quality-of-life challenges for residents (U.S. Department of Housing & Urban Development, 2018a). The Rental Assistance Demonstration (RAD) program is the latest HUD-sponsored initiative to preserve public housing while addressing deferred maintenance and its ill effects. RAD converts Section 9 public housing, and certain other subsidized housing developments (Rent Supplement, Rental Assistance Payment, Section 8 Moderate Rehabilitation, and Moderate Rehab Single Room Occupancy) to Section 8 rental assistance contracts. RAD’s main goals are to improve and preserve affordable housing while also improving resident outcomes (U.S. Department of Housing & Urban Development, 2018a). As of May 2017, \$4 billion in new funding (both private and public) has been leveraged through RAD with 61,472 units (dispersed amongst 571 housing developments) having completed conversion, primarily in urban areas (89%; U.S. Department of Housing & Urban Development, 2017). New funding priorities seek to expand RAD, and some cities (e.g., San Francisco, California) have recently transitioned their entire public housing portfolio to RAD. Given its recent implementation, research examining potential effects of the RAD program is limited and in very early stages.

The present study is unique in that it examines the impacts of a federal program that incorporates major renovations and returns residents to their original residences after a temporary relocation. This approach builds upon previous efforts to address issues endemic to the national public housing model. HUD has previously experimented with interventions in an attempt to improve living conditions as well as health and economic outcomes for tenants. The HOPE VI demonstration (which took place from 1993 to 2007) was a place-based program that demolished old developments to build new mixed-income units. HOPE VI resulted in the demolition of 150,000 units, but the units were rebuilt at a rate of just 55%, leaving fewer units for low-income individuals and families (Collinson, Ellen, & Ludwig, 2015). After redevelopment, HOPE VI provided higher quality housing for residents by decreasing toxic environmental exposures, increasing room size, providing safe and clean places to live and play, and reducing the stigma associated with living in affordable housing (Clampet-Lundquist, 2004; Cove, Eiseman, & Popkin, 2005; Popkin, 2010; Sullivan & Lietz, 2008). However, research found that some families were at increased risk of displacement, residential instability, the loss of social ties, and higher energy costs related to improvements in the units (Keene & Geronimus, 2011; Popkin, Levy, & Buron, 2009; Walker & Hanchette, 2015).

A subsequent demonstration effort, Moving to Opportunity (MTO), which was implemented between 1994 and 1998, provided public housing residents with access to housing in lower poverty neighborhoods through mobile vouchers. Study findings indicated that adults and children who moved experienced improved physical and mental health and felt safer (Feins & Shroder, 2005; Gennetian et al., 2012; Leventhal & Brooks-Gunn, 2003; Ludwig et al., 2013). MTO was not found to significantly improve short-term academic outcomes for children or increase incomes for adults, and often led to social, institutional, and community network disconnections (Sanbonmatsu, Kling, Duncan, & Brooks-Gunn, 2006). However, recent research demonstrates that children who moved through MTO to higher quality neighborhoods at age 13 or younger were more likely to attend college and earn higher incomes as adults compared with children who stayed in their original neighborhoods (Chetty, Hendren, & Katz, 2016).

As an extension of the HOPE VI and MTO interventions, the RAD approach permits residents to benefit from improved living conditions in their existing units while allowing for continuity in their residential environments. Many RAD developers have taken the opportunity to integrate health and sustainability measures and also include resources to support human and social capital development. HUD has included measures to ensure that tenants are better informed about the forthcoming changes, with requirements for proper notification about all planned procedures and disruptions associated with RAD. Furthermore, RAD includes a significant set of tenant protections, including: (a) at minimum three meetings with residents to inform them of the RAD process and their procedural rights, and to elicit feedback; (b) guaranteed right-of-return in the case of relocation, without risk of being rescreened for eligibility at their current residence; (c) phased-in rent increases over 3–5 years; (d) continued recognition of and funding for resident organizations (a carryover from public housing); (e) formal eviction and grievance procedures; and (f) the provision of choice-mobility for residents, allowing them to receive a voucher or other tenant-based rental assistance, after 1–2 years of residing in the converted property (U.S. Government Accountability Office, 2018b). This last protection allows for some degree of neighborhood choice by allowing residents to request a voucher that can be used in the private market (U.S. Department of Housing and Urban Development, 2018b).

Because of the differences in income eligibility under public housing programs and programs under low-income housing tax credits (LIHTCs) (which are managed by each state's housing credit agency), some residents with incomes above the LIHTC limit would be eligible to return; however, the owner would not be able claim LIHTC credits for those units, thereby incentivizing housing operators to push out ineligible tenants. For this reason, the 2018 Consolidated Appropriations Act included a provision that allows for income-averaging which would permit occupancy by families that earn 60–80% of Area Median Income (AMI; Scally, Gold, & DuBois, 2018). This shift away from per-unit credits reduces the need to displace ineligible households and thereby protects residents' right of return to units that have been converted via LIHTC. Beyond this, residents may also be

offered monetary incentives to move to another program and/or may leave the program voluntarily, but residents are not forced to leave. Still, even with a high degree of protections and resident involvement, the interim effects of the RAD model on residents' lives are not yet known.

The purpose of this article is to examine resident perspectives on the RAD conversion process to understand how these changes impacted residents in affected housing communities. The current study is among the first to examine the impact of RAD in one of the first sites in the United States to successfully undergo the RAD conversion. This qualitative study addresses the following research questions: (a) In what ways did public housing sites (units and complexes) change based on RAD renovations according to residents?; (b) What were residents' experiences during the RAD implementation process?; and (c) What were the overall benefits and challenges of the experience from the residents' perspective? This project was funded by a grant from HUD. The Columbia University's Medical Center and Teachers College institutional review boards and the partnering housing authority approved this study.

Methods

Site

We examined a RAD intervention that occurred in a central California county across three sites: one mid-sized urban area and two rural towns with large immigrant populations. This housing authority was among the first nationally to fully implement the RAD conversion in 2015. The housing type consisted of low-density, attached single-unit apartments with an average of 58 units within the housing complex.

The rehabilitation plan was developed based on the results of the capital needs assessment. As part of the RAD rehabilitation, improvements were made to building and unit quality to bring them up to market standards and enhance community development. Properties underwent upgrades to amenities, appliances, and interior finishes, including the installation of new unit dishwashers, and building washer/dryers, lighting, and recycling stations. Floors were replaced, and kitchen cabinets were also replaced or repainted in a light color. Three- and four-bedroom units were provided an additional bathroom. Structural upgrades were made to the roof, building envelope, landscaping (e.g., new irrigation system and trees), and existing mechanical, electrical and plumbing systems were replaced, including upgrades to the heating, ventilation and air conditioning systems. Energy efficiency gains were anticipated as a result of these appliance and structural changes. Residents also benefited from a more streamlined management experience. Nearly every property has on-site management staff. Residents saw upgrades to recreational and common areas to accommodate more services, community organizations and gatherings, and other property management functions. Some examples included the expansion of an existing community building, new community centers, and new outdoor play areas and community gardens.

Sample

This study primarily draws on in-depth interviews with residents from three housing developments. The study sample consists of 30 female heads of household ranging in age from 25 to 55 with an average age of 39. All participants were the parent or legal guardian of a child 10 years of age or younger and had on average 3.3 children. Most were single mothers of Hispanic descent and native English (50%) or Spanish (50%) speakers. Nearly two thirds of the respondents (60%) were at least high school educated and the majority earned less than \$20,000 per year (80%); and half were unemployed whereas 20% were seasonally employed in the agriculture industry. Compared with local public housing residents, our study population was slightly older (39 vs. 37 years), more Hispanic (93% vs. 80%), had more children (3.3 vs. 2.4), and overwhelmingly earned less than \$20,000 per year (80% vs. 59%). [Table 1](#) shows study sample demographic characteristics by housing site.

Table 1. Demographic characteristics of interviewed residents ($n = 30$).

Residents	Urban ($n = 10$)	Rural 1 ($n = 10$)	Rural 2 ($n = 10$)	All sites ($n = 30$)
Age (%)				
25–35 years	40 ($n = 4$)	60 ($n = 6$)	60 ($n = 6$)	53 ($n = 16$)
36–45 years	30 ($n = 3$)	30 ($n = 3$)	30 ($n = 3$)	30 ($n = 9$)
46–64 years	20 ($n = 2$)	-	10 ($n = 1$)	10 ($n = 3$)
65+ years	10 ($n = 1$)	10 ($n = 1$)	-	7 ($n = 2$)
Race (%)				
Hispanic/Latino	90 ($n = 9$)	90 ($n = 9$)	100 ($n = 10$)	94 ($n = 28$)
White	-	-	-	-
Black	-	10 ($n = 1$)	-	3 ($n = 1$)
Asian	10 ($n = 1$)	-	-	3 ($n = 1$)
Highest level of education (%)				
Primary/elementary school	40 ($n = 4$)	-	30 ($n = 3$)	23 ($n = 7$)
Some high school	10 ($n = 1$)	20 ($n = 2$)	-	10 ($n = 3$)
High school graduate	10 ($n = 1$)	60 ($n = 6$)	30 ($n = 3$)	33 ($n = 10$)
Some college	20 ($n = 2$)	10 ($n = 1$)	30 ($n = 3$)	20 ($n = 6$)
College graduate	20 ($n = 2$)	-	-	7 ($n = 2$)
Did not specify	-	10 ($n = 1$)	10 ($n = 1$)	6 ($n = 2$)
Employment status (%)				
Currently working	40 ($n = 4$)	20 ($n = 2$)	10 ($n = 1$)	23 ($n = 7$)
Seasonal worker	20 ($n = 2$)	10 ($n = 1$)	30 ($n = 3$)	20 ($n = 6$)
Currently not working	40 ($n = 4$)	50 ($n = 5$)	60 ($n = 6$)	50 ($n = 15$)
No answer	-	20 ($n = 2$)	-	7 ($n = 2$)
Household income (%)				
Less than \$5,000	20 ($n = 2$)	30 ($n = 3$)	20 ($n = 2$)	23 ($n = 7$)
\$5,000–\$9,999	20 ($n = 2$)	20 ($n = 2$)	30 ($n = 3$)	23 ($n = 7$)
\$10,000–\$14,999	10 ($n = 1$)	30 ($n = 3$)	10 ($n = 1$)	17 ($n = 5$)
\$15,000–\$19,999	40 ($n = 4$)	-	10 ($n = 1$)	17 ($n = 5$)
\$20,000–\$24,999	10 ($n = 1$)	10 ($n = 1$)	10 ($n = 1$)	10 ($n = 3$)
\$25,000–\$29,999	-	-	10 ($n = 1$)	3 ($n = 1$)
No answer	-	10 ($n = 1$)	10 ($n = 1$)	7 ($n = 2$)
Number of children				
Average number of children	3.4	3.3	3.1	3.3
Language of interview (%)				
English	60 ($n = 6$)	40 ($n = 4$)	50 ($n = 5$)	50 ($n = 15$)
Spanish	40 ($n = 4$)	60 ($n = 6$)	50 ($n = 5$)	50 ($n = 15$)

Recruitment

Study participants were recruited through posted flyers, via door-to-door recruitment, and by referral from other participants. Eligible participants had at least one young child (10 years old or younger) and participated in the full RAD conversion. Participants received a \$25 gift card.

Data Collection

In-person, in-depth interviews were conducted using a semistructured interview guide primarily in the participants' remodeled apartment units. The interviews covered a range of topics including residential history, participation in the RAD planning and implementation process, and perceptions of RAD-related changes. An experienced bilingual, qualitative researcher (DH) conducted the interviews in the participant's preferred language (English or Spanish). The recorded interviews lasted 30–45 minutes on average and were professionally transcribed.

Data Analysis

Interview transcripts were systematically coded for emergent themes using a phenomenological approach to understand common experiences with the RAD conversion process. A phenomenological approach enables the identification of core elements of a shared experience, providing a basis from

which to describe how several individuals perceive a collective encounter. In this case, we aimed to distill the essential elements of the RAD planning and implementation process to explore residents' knowledge, experiences, and perceptions of the conversion process across the three sites. The interview transcripts were coded and analyzed by three members of the research team. They used MaxQDA (versions 11 and 12), a qualitative software program, to manage general coding, code categorization, and theme development of the textual data. Findings are based on thematic analysis across the sample. To validate the results, the three coders verified the consistent application of codes that informed themes and jointly discussed and modified any discrepancies.

Results

They've really, really improved and upgraded, as far as the outside and inside. So now when I tell people, "Oh, I live in the projects," they're like, "Oh, those are nice."

This study examined the short-term impacts of RAD conversions among residents at RAD sites. At the time of the interviews, most participants had returned to their units within the past 90 days (40%), 4–6 months (20%), or 7 months or more (17%), although some (23%) did not specify. As such, all were relatively acclimated to their new living quarters. The sample participants had varied relocation experiences: 30% were reassigned for 3 months or less, 20% were away for 4–6 months, 27% were relocated for 7–9 months, 17% stayed with family, and 6% did not specify. Participants described diligently complying with the RAD certification process, which involved submitting "lots of paperwork" to the housing authority to verify income and other eligibility criteria. In this process, residents saw some neighbors lose their housing benefits.

Most participants (80%) attended at least one RAD planning meeting, and an equal number of residents reported having a general understanding of RAD. For the most part, they understood that the initiative entailed renovating apartments, thus requiring them to temporarily relocate and move back once the renovations were completed. Only two participants understood the change from public housing to Section 8, whereas the majority had no understanding or did not mention this administrative shift. Additionally, participants expressed frustration because their input was not fully incorporated in the redesign of the units and complexes. More than half (59%) felt their recommendations were not taken into account, and some (27%) felt the renovations failed to meet their expectations.

Aside from these procedural hurdles and shortcomings, we identified four main themes across respondent interviews that describe their perspectives on the effects of RAD conversions: (a) upgraded heating/cooling systems and appliances; (b) improved unit layout, aesthetics, and conditions; (c) perceived safety and connectedness; and (d) enhanced resident resources and pride of place (see [Figure 1](#)).

1. Upgraded Heating/Cooling Systems and Appliances

It's comfortable and practical because every area has its own air unit.

Heating/Cooling

Respondents described the condition of their heating, cooling, and thermal comfort as one of the most notable changes that occurred in the RAD conversion process. When asked about the most challenging aspect of their living situation prior to the RAD renovations, more than half of participants (57%) mentioned their inability to control and maintain the temperature of their apartment as desired. Residents mentioned that "swamp coolers" resulted in cooling hardships.

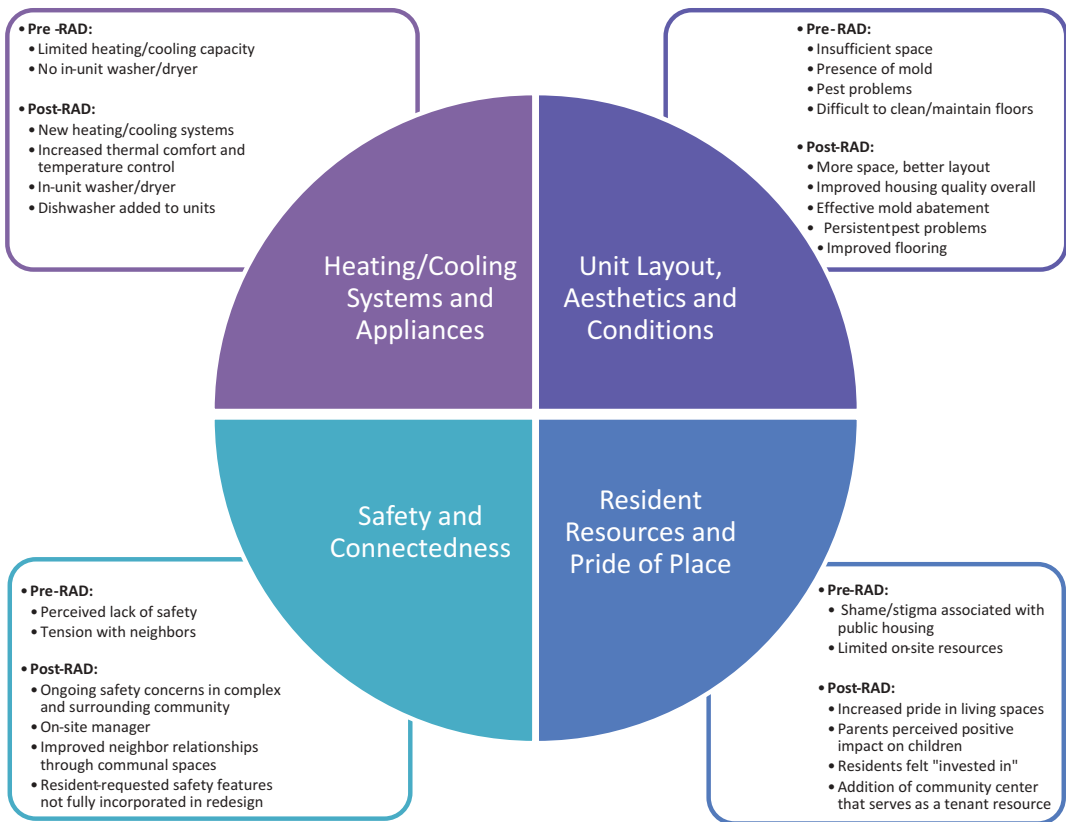


Figure 1. Resident perspectives on Rental Assistance Demonstration (RAD) program-related changes.

Evaporative “swamp” coolers function by drawing in arid outdoor air and treating it with moisture, thereby causing indoor temperature to drop. They tend to work best in dry, hot areas and represent an economical and efficient cooling option. However, dated coolers and their suboptimal location in main corridors presented challenges for residents to effectively cool their homes, especially during bouts of extreme heat. One resident summed up her experience with swamp coolers and thermal discomfort:

The problem I always had was during the hot season. The coolers that I had weren’t good for anything because the house would stay somewhat warm and there was only one in the hallway. There wasn’t one in the living room, the kitchen, and the rooms. It was always hot and on top of it not cooling, there was a lot of noise, noise all day. You would even end up with a headache at night from having to hear that noise.

Residents had similar experiences with the heating system in their apartments prior to the RAD renovations. Heaters were often limited to the living room and residents frequently experienced nonfunctional heaters. One resident described how she remedied her heating deficiencies:

It was horrible. And in the winter, all the kids would be in here with the blankets because it was freezing cold... The wall heater would just hit the living room. It wouldn’t go anywhere else in the rooms, none of the bedrooms or the bathroom. So I had to buy two or three space heaters and just a lot of blankets.

After participants moved into their renovated apartments, the majority (70%) noted their satisfaction with the air conditioning and heating systems. The installation of wall-mounted heating and

cooling (mini-split) units in each room was considered a significant improvement. Participants appreciated having better temperature control and improved air circulation: “Everything is perfect because now the rooms, everyone sets the temperature they want, it’s not too hot, it’s perfect now...more comfortable.”

Despite broad satisfaction with the heating and cooling systems, nearly half (47%) of the respondents noted higher expenses. One resident described how she managed her energy use and tried to contain costs: “Why am I going to want to air condition my whole house? Right now I just need it right here, and that’s exactly what I do. [Even still] my bill is like \$60.00 higher a month.”

Although the higher operating costs were described as a drawback, the residents mostly acknowledged the advantages of greater temperature control and thermal comfort.

Laundry and Kitchen Appliances

Most participants (70%) felt the placement and use of new appliances within the renovated apartment was a positive change. Participants approved of the revised apartment layouts that were modified to create dedicated space for in-unit washer and dryer sets: “I like the fact that the washer and dryer is inside...before they were outside, so I had to go out the door, outside at night to wash and dry.”

The housing authority furnished the new machines; therefore, residents were no longer responsible for independently purchasing and maintaining laundry appliances. One disadvantage was that residents had previously line-dried clothing but the outdoor clotheslines were removed, forcing participants to use dryers or hang their clothes indoors, solutions with their respective downsides—added costs and indoor moisture. Additionally, half of the participants did not need or use the dishwashers provided, either because they did not know how to operate them or preferred instead to wash the dishes by hand and use the dishwashers for storage. Whereas water conservation was important to the housing authority, the respondents were more concerned that running the dishwashers would increase their own electricity bills.

2. Improved Unit Layout, Aesthetics, and Conditions

We get a lot of compliments about how the housing looks; they look better than they did.

Unit Layout

Respondents noted improvements to the apartment layout (23%) and floors (27%). They commonly described the prerenovated units as small with an odd room configuration or stated that the family had outgrown the space. One resident described the limited space as making it difficult to live; although the unit had enough bedrooms, she said: “The rooms were really small...my children were cramped.” In addition to right-sizing according to family size upon relocation, the plans included additional square footage and changes to the layout to increase room size and designated space for appliances, namely the washer and dryer: “Before it was like the kitchen was smaller, the bedrooms were smaller, you only had one restroom, now there’s two restrooms. There’s more space.” Upon returning to the renovated units, many respondents (66%) were satisfied with their new apartment size and layout. Respondents specifically highlighted additional space and cabinets in the kitchen and larger living rooms, bathrooms, and closets.

Flooring

Another significant change to the apartment aesthetic was related to flooring. Prior to the renovations, the apartments featured light-colored linoleum flooring, which was considered difficult to maintain: “No matter what you do, no matter if you clean it, you mop, it looks the same.” After RAD renovations, the majority (80%) were pleased with the upgraded flooring materials, from linoleum and carpet to hardwood laminate. In addition to appreciating the aesthetic appeal, the

floors were also less burdensome to maintain. “The floors, I was like wow, it’s wood! And it’s brown, so you can’t really tell if it’s dirty [laughter].”

Hazardous Conditions

The two most frequently reported pre-RAD renovation hazards mentioned were roaches (27%) and mold (23%). Participants described roaches as a persistent problem. Besides their vexing presence, the infestation led to secondary effects, including crawling on residents and their kids, overtaking appliances and electrical sockets, and spoiling food. One respondent described her disgust:

Roaches are dirty, they’re nasty, they’re diseased...I have other things to do with my life other than to spin around catching bugs. I want to be able to open my shelves and cook freely with my children. I don’t want to have the hazards, health hazards for my kids.

Many residents (59%) noted the continued presence of roaches and water bugs after the renovations. Residents attributed this to the lack of effective pest management and a new source: the mulch that replaced the grass in outdoor yards. One resident described the emergent pest problem:

Before it was grass, it wasn’t like those woodchips. In the nighttime, it’s like thousands, millions of cockroaches coming in from those woods... Less than a month ago, I went to the ER because I was asleep, and one of those bugs—that came in the house from outside—went inside my ear.

The frequency of the roach problem after the RAD renovations, as well as the potential health impacts of their presence on residents, suggests that maintenance practices including integrated pest management that incorporates resident education must be sustained post renovation.

Mold occurring indoors is usually due to high moisture in the air. In addition to being unsightly, mold presents health risks. One respondent described the difference in mold conditions after the renovations: “I feel like it’s much cleaner. The houses we lived in [before], it had a lot of mold, and I noticed my kids they got sick a lot.” Respondents did not report continued mold issues post renovation, perhaps attributable to the newly installed mechanical ventilation system and new floor and wall tiling in the bathrooms.

3. Perceived Safety and Connectedness

I had many problems with the front door neighbor but since I moved, she changed a lot.

Many participants (40%) considered safety an ongoing issue after the RAD renovations. Participants expressed concerns about outsiders coming into the apartment complex and potentially victimizing them. In the planning process, residents emphasized safety—some suggested having an onsite security guard, cameras, or fences, but these ideas were not incorporated into the redesign, which was disappointing for some:

From the beginning I told the people from housing, why don’t you put in security to patrol the area here... just two days ago I heard that some young guys came running through here like the police was chasing them. I don’t know what happened, but that itself is—No.

Other issues such as neighbors loitering, littering, and breaking smoking rules led to disputes and tension. Still, some participants noted positive changes related to safety and resident turnover:

The only change I see is that they cleaned house. They removed certain families that were doing stuff outside, like in the middle of the night and stuff. So it’s a lot quieter now... Some people that were living on that side, kind of catty-corner from me, they would party outside and they would leave weed outside...but they don’t live here anymore.

The presence of an on-site manager was reassuring as well: “It was better for me when they told me there was going to be a manager living here.”

The RAD process also encouraged new and improved relationships among neighbors, including during the temporary relocation: “So we’d talk to our downstairs neighbor, and then the pool was a plus because we talked to everybody out there at the pool, the kids swam together. We met people that are going stay our friends.” Overall, however, many residents did not feel completely at ease or connected to their neighbors and the surrounding community.

4. Enhanced Resident Resources and Pride of Place

We are more comfortable and my kids, they’re happier in the big house—they’re really willing to live there now. Even though it is not our house, we feel as if it were our house.

Resident Resources

Residents were grateful for the additional amenities that were implemented as part of the RAD process. They believed that recreational and academic resources targeting children and adolescents in the housing communities would have a positive influence over time:

I’m glad that they have the community center now, ‘cause that keeps kids off the streets. I wish they would have had something like that [years ago], because maybe I would have grew up a little bit better... The kids gain in the long run, so I’m glad that they put it here.

Pride of Place

Several participants noted how much more prideful their children felt after the renovations:

Before my daughter would say, “I don’t want to live here.” And I would ask, “Why not?” She would say, “Because these houses are very ugly.” And now that we’ve come back that they’re pretty, I ask her, “And now what do you say?” She says, “I like it!” That’s why I’m also pleased, because my kids say, “We want to stay here.”

Parents were pleased not only for the positive impact on their children but also acknowledged what this investment meant for their own ability to thrive: “The housing authority did all this basically saying that, ‘You deserve this,’ because there’s no way that they would put somebody in an apartment so beautiful for you just to fail. I feel almost obligated now to show them more.”

Discussion

Key successes of the RAD conversion were highlighted through interviews with tenants. Aesthetic upgrades and improved thermal comfort were well received and provided a more comfortable living environment for families. Residents expressed a newfound sense of pride after the renovation. Others noted improved health particularly from mold abatement. Tenant relations, on-site management, and resident resources were perceived as gains whereas safety and pest infestations were not completely resolved by the renovations. Although these successes were emphasized, several tensions and areas for continued attention emerged. In this section, we offer several recommendations that stem from these results but also engender broader observations based on wide-scale RAD implementation.

Results highlighted the need to prioritize resident education at all phases of the conversion process. Comprehensive prerovation education efforts could help minimize confusion regarding what the process fully entails and clarify administrative requirements that many residents found challenging. One example was allaying concerns about losing housing benefits in the transition and in future reeligibility processes, which was distressing to residents given that some neighbors reportedly were not able to exercise their right to return. Furthermore, postrenovation education efforts are also crucial. Residents were introduced into renovated units without adequate orientation to the new features of the space, and as a result many of these features were underused (e.g., dishwashers). Comprehensive resident manuals and educational videos as well as apartment

walkthroughs would increase knowledge of the changes made during the renovation, particularly those upgrades that have technological elements and potential cost implications for the residents or housing authority. Some of the design choices observed in the sites introduced new financial burdens for families, namely the heating and cooling systems. Educating residents on efficient use strategies, as well as providing residents with assistance in creating a household budget that accounts for these new costs, could ease the financial challenges posed by the system upgrades. These education efforts would be most impactful if completed in the resident's primary language.

The link between housing quality and health outcomes has been substantiated (Acevedo-Garcia et al., 2004; Gibson et al., 2011; Shaw, 2004); however, further research leading to empirically supported models that elucidate the pathway by which housing improvement impacts health is needed. This would provide policymakers and housing developers with theoretical tools necessary to make evidence-based design choices that would yield the greatest positive impact for residents. Importantly, integrating such models may require creative financing to achieve scale. Whereas consideration of cost is essential in policy discourse and decision-making, improvements in affordable/public housing are more likely to be enacted and scaled if cost calculations are balanced by additional gains related to health and quality of life. The economic impact of housing investments, such as those implemented through RAD, should be measured according to cost offsets to healthcare, criminal justice, and increased educational attainment and social mobility.

Neighborhood cohesion has been shown to moderate adverse outcomes for low-income children and families (Browning, Gardner, Maimon, & Brooks-Gunn, 2014; Donnelly et al., 2016). Improving social relationships through housing could strengthen cohesion and mitigate potential adverse impacts of many proximal neighborhood stressors. Creating shared spaces that are functional and conducive to fostering community within a housing complex is an important step toward strengthening tenants' relationships with one another. Opening these shared spaces to occasional neighborhood-wide programming could better integrate tenants into their broader neighborhood contexts and reduce the social stigma that is often attached to public housing.

RAD shows promise for residents of an aging public housing stock in dire need of critical repairs. The program also improves access to housing features and amenities that are essential elements of modern living. Although our data provide rich accounts of tenant experiences at RAD sites in central California, the study has some limitations. For instance, our study only covered the postrenovation period; therefore, the results do not capture prer renovation perspectives nor does the study offer a longitudinal assessment of the changes. Furthermore, given our small sample size, our results are not representative of all residents and do not incorporate the perspectives of those who may have lost benefits in the RAD conversion process. Additional data gathered over time from other RAD sites will be useful in identifying further, longer term trends in resident experiences with the demonstration project, which could inform statutory changes in affordable housing policy and standards. Although this study provides key insights into the resident experience during the planning and postrenovation processes, further research into the temporary relocation period could provide valuable information related to the disruption of daily routines in this transitional phase. Additionally, analysis that examines residents after longer durations post renovation are needed to better document the impact of RAD on physical and mental health outcomes and social mobility among residents.

Conclusion

Based on in-depth, semistructured interviews with 30 residents at three RAD sites, we gained insights into residents' experiences and opinions about the RAD conversion process. Residents reported being pleased with aesthetic upgrades, improved thermal comfort, increased feelings of pride, and improved tenant relations after the renovation. However, safety concerns and pest infestations were not completely resolved, and residents noted some confusion about the administrative aspects of the RAD process. Based on our results, we provide clear and original policy

recommendations that could be adopted to improve program implementation at future RAD sites. Resident education should be prioritized at all phases of the conversion process by providing comprehensive resident manuals, educational videos, and apartment walkthroughs. Attention also needs to be paid to the possibility of increased financial burdens associated with some of the renovations, such as updated air conditioning systems. RAD represents a key opportunity for affordable housing communities to be renovated with social cohesion in mind. This can be achieved by creating shared spaces that can help foster community and improve resident health and well-being. Although consideration of cost is essential, improvements in public housing are warranted and may prove cost-effective when balanced by additional gains in health and quality of life. Further research is needed on RAD's impact on residents with comprehensive assessments of pre- and postrenovation and long-term outcomes.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the U.S. Department of Housing and Urban Development [Grant H:21666CA]. The writing of this manuscript was also partially supported by a JPB Environmental Health Fellowship granted to Diana Hernández and managed by the Harvard T.H. Chan School of Public Health Grant; and a Career Development Grant from the National Institute of Environmental Health Sciences (NIEHS) under Grant P30ES009089.

Notes on Contributors

Diana Hernández focuses her work on the social and environmental determinants of health by querying the impacts of policy and place-based interventions on the health and socioeconomic well-being of vulnerable populations, and her community-oriented research examines the intersections between the built environment (housing and neighborhoods), poverty/equity, and health, with a particular emphasis on energy insecurity.

Tiana Moore's current research interests include examining features of neighborhoods that contribute to health and education disparities, and dual-generation interventions that improve outcomes for both children and their parents.

Sarah Lazzeroni provides administrative and research support for the National Center for Children & Families at Columbia University, and her current research interests include examining the impacts of housing interventions on children and families, as well as understanding how inequality impacts health outcomes for children and families.

Uyen Sophie Nguyen provides research support across the National Center for Children in Poverty at Columbia University, using her experience in collecting and analyzing data, conducting research reviews, and coordinating projects to support several projects in the Early Childhood, Health and Mental Health, and Family Economic Security units.

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